

# Tuberculosis

In New York State  
2012 Annual Statistical Report

Bureau of Tuberculosis Control



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# 2012 Annual Report


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## SUMMARY

- Between 2011 and 2012, tuberculosis (TB) morbidity decreased in New York State. The 2012 total of 866 cases (651 cases in New York City, 215 cases in the remainder of New York State) represents a 4.8 percent decrease from the 910 cases reported in 2011. The decline in morbidity was less in New York State than in the nation (4.8% and 5.4%, respectively). Since 1992, the recent peak epidemic year with 4,574 cases, New York State has experienced an 81.1 percent decrease compared to a national decline of 62.7 percent.
- In New York State (exclusive of New York City), the number of TB cases decreased 2.7 percent from 221 cases in 2011 to 215 cases in 2012. The number of TB cases in New York City decreased by 5.5 percent from 689 cases in 2011 to 651 cases in 2012. In 2012, the nation as a whole reported 9,951 TB cases, down from the 10,521 cases reported in 2011.
- New York State was sixth nationally with an incidence rate of 4.4 per 100,000 population in 2012. This rate is influenced by New York City, which had a TB case rate of 8.0/100,000. In contrast, New York State (exclusive of New York City) reported an incidence rate of 1.9/100,000. The national average for 2012 was 3.2/100,000.
- Three counties - Nassau, Suffolk, and Westchester - reported almost half of the TB cases in New York State (exclusive of New York City) in 2012.
- Asians, Hispanics, and blacks had higher rates of TB compared to whites, both in New York City and the rest of the state.
- Among individuals with drug susceptibilities reported in 2012, the number of multidrug-resistant (MDR TB) cases in New York City was 16, the same number seen in 2011. In New York State (exclusive of New York City), the number of MDR TB cases decreased 50.0%, from six cases in 2011 to three cases in 2012.
- Statewide, including New York City, the proportion of cases contributed by foreign-born individuals increased slightly from 77.7 percent in 2011 to 80.5 percent (697 cases) in 2012, with people born in China contributing the greatest number of foreign-born TB cases (107). In New York State (exclusive of New York City), people born in India contributed the greatest number of TB cases (20).
- Since 1991, the number of TB cases among the New York State Department of Corrections and Community Supervision (DOCCS) inmate population has been continually declining. In 2011 and 2012, no new cases were reported.

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# **Tuberculosis in New York State 2012**

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**Introduction**

New York State Public Health Law and the State Sanitary Code require reporting of all suspected and confirmed tuberculosis (TB) cases to the local health unit where a patient resides. All reports received by the local health units are sent to the New York State Department of Health.

In 2012, 866 new cases of tuberculosis were reported among New York State residents (Table 1, page 8). New York City reported 651 new TB cases while the rest of the state had 215.

The overall trend in TB cases has been downward in New York State, including New York City, with an increase in 1975 (the Centers for Disease Control and Prevention [CDC] changed their policy to include reactivated cases as well as new TB cases) and in the early 1990s (period of the most recent TB epidemic).

## Tuberculosis Cases

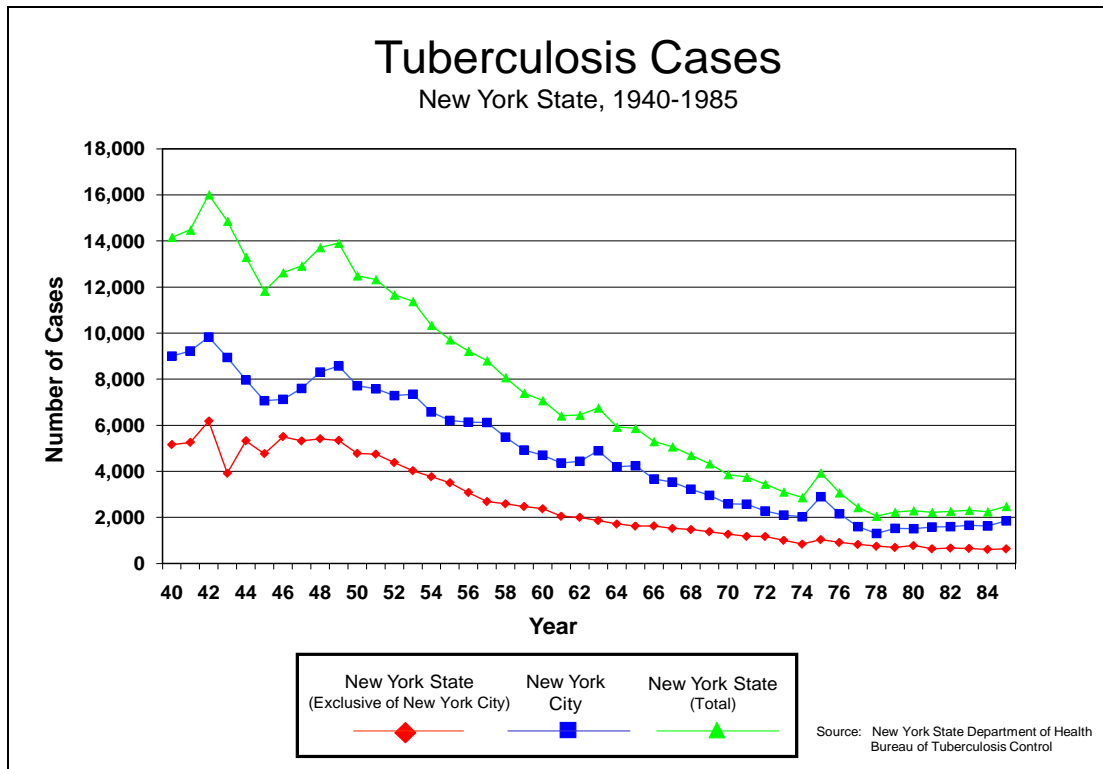
1960-2012

Year	New York State (Exclusive of New York City)		New York City		New York State (Total)	
	No.	Rate per 100,000	No.	Rate per 100,000	No.	Rate per 100,000
1960	2,376	26.4	4,699	60.4	7,075	42.2
1961	2,052	22.3	4,360	56.3	6,412	37.8
1962	2,005	21.4	4,437	56.7	6,442	37.5
1963	1,865	19.6	4,891	61.7	6,756	38.7
1964	1,715	17.8	4,207	52.7	5,922	33.6
1965	1,627	16.6	4,242	53.0	5,869	33.0
1966	1,633	16.5	3,663	45.7	5,296	29.5
1967	1,527	15.2	3,542	44.4	5,069	28.1
1968	1,475	14.5	3,224	40.5	4,699	25.9
1969	1,384	13.5	2,951	37.4	4,335	23.9
1970	1,275	12.3	2,590	32.8	3,865	21.2
1971	1,180	11.3	2,572	32.5	3,752	20.4
1972	1,176	11.2	2,275	29.0	3,451	18.8
1973	1,009	9.6	2,101	27.4	3,110	17.1
1974	844	8.1	2,022	26.6	2,866	15.9
1975	1,041	9.9	2,893	38.6	3,934	21.8
1976	916	8.7	2,156	29.0	3,072	17.1
1977	829	7.9	1,605	22.0	2,434	13.6
1978	753	7.1	1,307	18.2	2,060	11.6
1979	699	6.6	1,530	21.5	2,229	12.6
1980	780	7.4	1,514	21.4	2,294	13.1
1981	641	6.1	1,582	22.4	2,223	12.7
1982	674	6.4	1,594	22.5	2,268	12.9
1983	658	6.2	1,651	23.1	2,309	13.1
1984	616	5.8	1,630	22.6	2,246	12.7
1985	638	6.0	1,843	25.5	2,481	13.9
1986	615	5.8	2,223	30.6	2,838	15.9
1987	615	5.8	2,197	30.1	2,812	15.7
1988	688	6.5	2,317	31.8	3,005	16.8
1989	657	6.2	2,545	34.8	3,202	17.8
1990	656	6.1	3,520	48.1	4,176	23.2
1991	748	7.0	3,673	50.2	4,421	24.6
1992	763	7.2	3,811	52.0	4,574	25.4
1993	717	6.7	3,235	44.2	3,952	22.0
1994	641	6.0	2,995	40.9	3,636	20.2
1995	621	5.8	2,445	33.4	3,066	17.0
1996	535	5.0	2,053	28.0	2,588	14.4
1997	535	5.0	1,730	23.6	2,265	12.6
1998	442	4.1	1,558	21.3	2,000	11.1
1999	377	3.5	1,460	19.9	1,837	10.2
2000	412	3.8	1,332	16.6	1,744	9.2
2001	415	3.8	1,261	15.7	1,676	8.8
2002	350	3.2	1,084	13.5	1,434	7.6
2003	340	3.1	1,140	14.2	1,480	7.8
2004	324	3.0	1,039	13.0	1,363	7.2
2005	305	2.8	984	12.3	1,289	6.8
2006	317	2.9	954	11.9	1,271	6.7
2007	261	2.4	914	11.4	1,175	6.2
2008	305	2.8	895	11.2	1,200	6.3
2009	246	2.2	760	9.5	1,006	5.3
2010	243	2.2	711	8.7	954	4.9
2011	221	2.0	689	8.4	910	4.7
2012	215	1.9	651	8.0	866	4.5

\*Figures after 1974 include reactivated cases

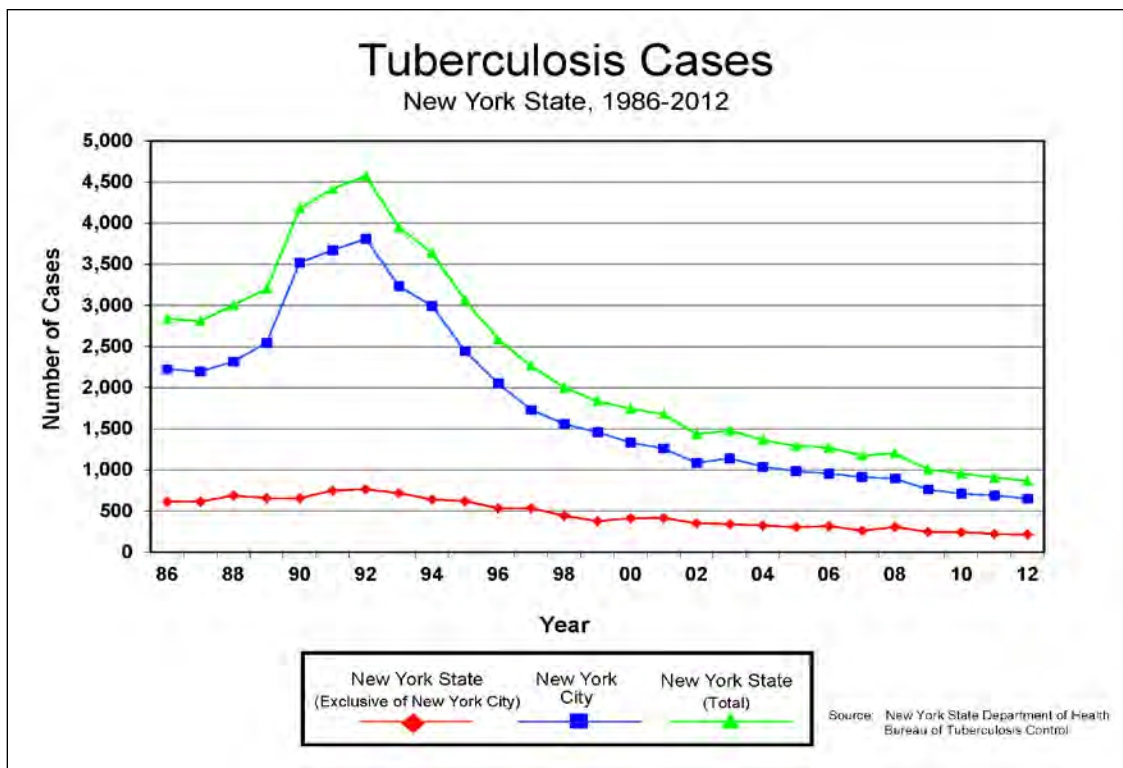
Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 1: Tuberculosis Cases, New York State, 1960-2012**

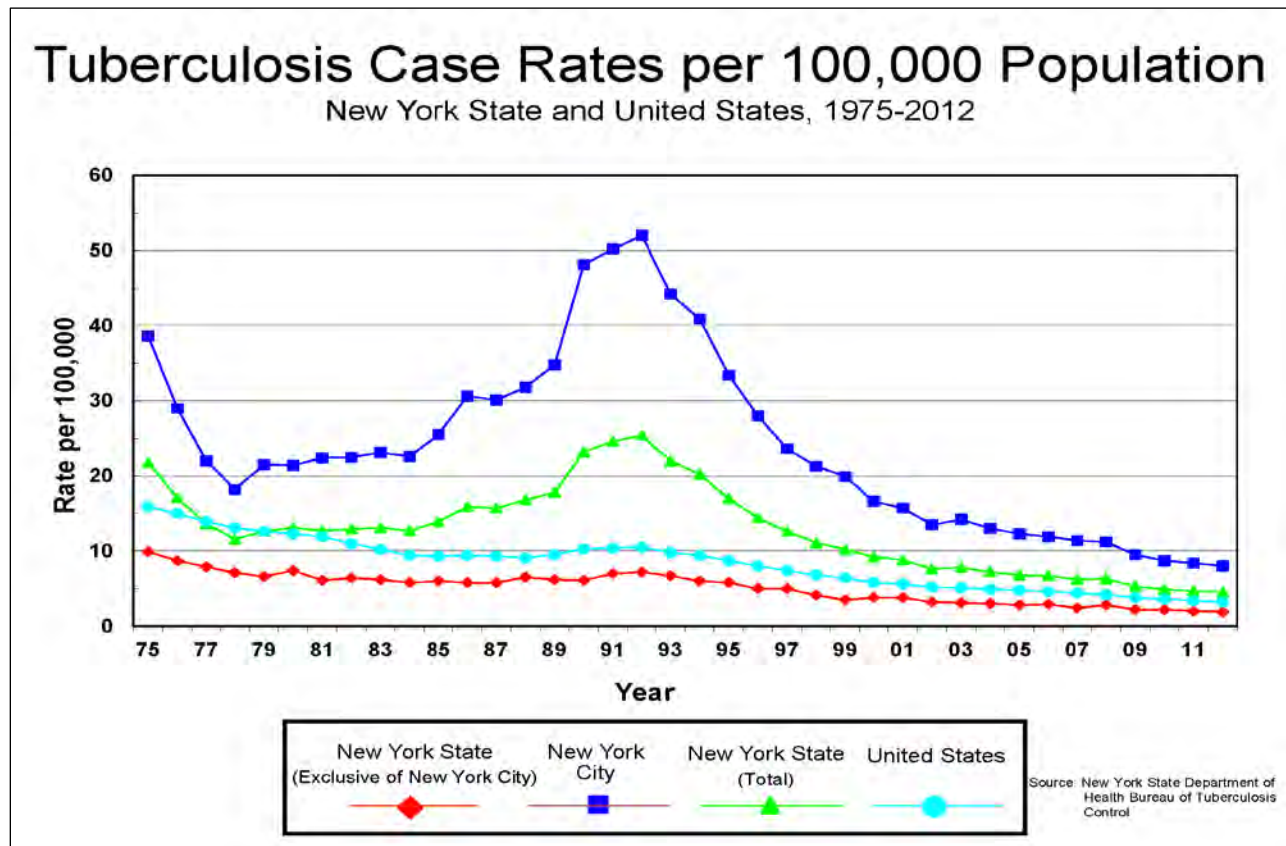


**Figure 1a: Tuberculosis Cases, New York State, 1940-1985**

TB cases in New York State have decreased dramatically since 1940. The increase in 1975 was due to a change in CDC policy to include reactivated cases. The increase in the early 1990s represents the peak of the most recent epidemic.



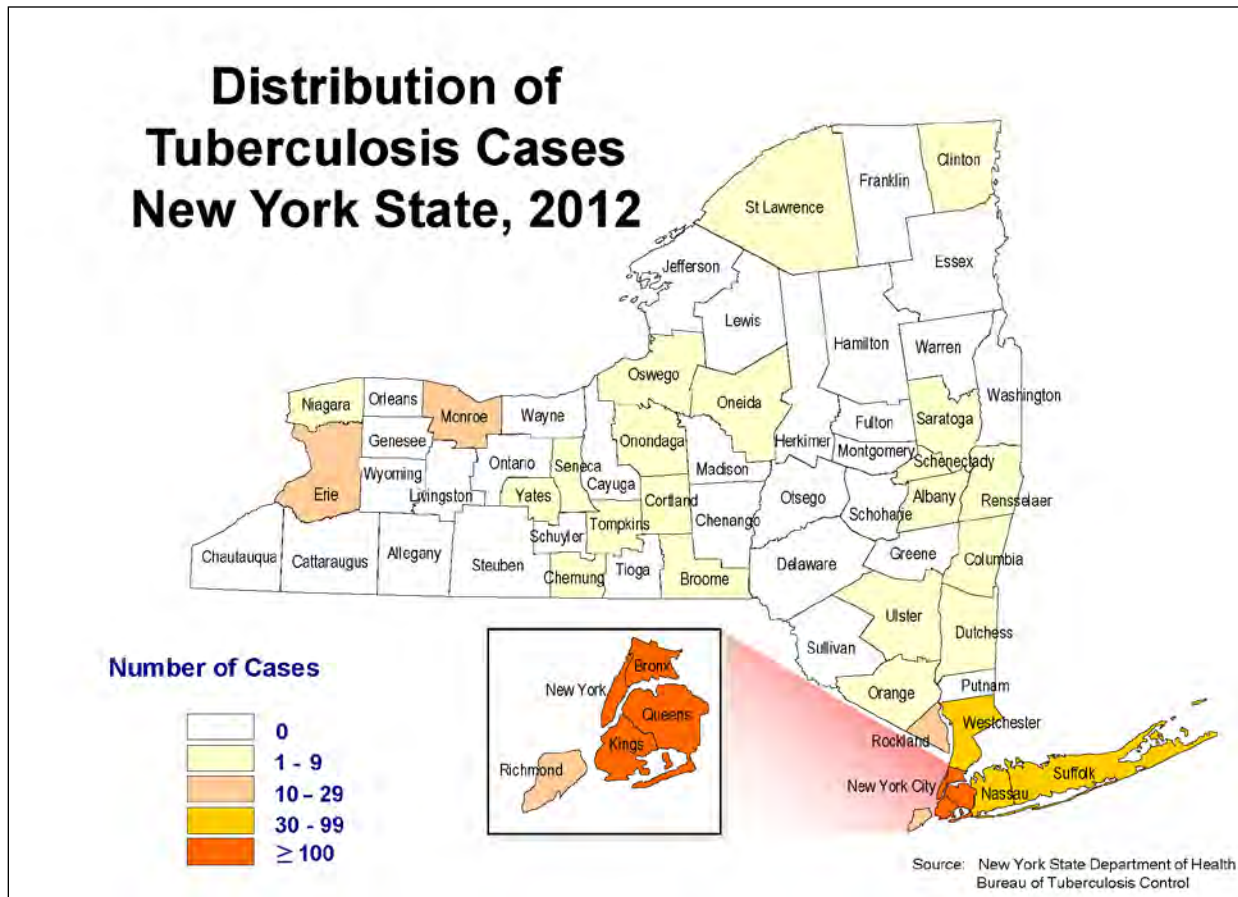
**Figure 1b: Tuberculosis Cases, New York State, 1986-2012**



**Figure 2: Tuberculosis Case Rates per 100,000 Population, New York State, 1975-2012**

Historically, TB case rates in New York State (exclusive of New York City) have been lower than the national average, while TB case rates in New York City have exceeded national rates. The difference was most evident at the peak of the recent epidemic in 1991 and 1992 when New York City's TB incident case rates exceeded 50 per 100,000 compared to the national rate of approximately 10.5 per 100,000.

For New York State as a whole, the 2012 TB case rate was 4.5 per 100,000 population (New York City, 8.0; New York State exclusive of New York City, 1.9). The national rate for 2012 was 3.2 per 100,000.



**Figure 3: Distribution of Tuberculosis Cases, New York State, 2012**

New York City represents 75.2 percent of the State's TB cases despite having only 42.2 percent of the population. In New York State (exclusive of New York City), higher numbers of cases were noted in the major metropolitan areas with three counties - Nassau, Suffolk, and Westchester - accounting for almost half of the TB cases reported in 2012. Thirty-five counties either had no cases or only one reported case of TB in 2012. Refer to Table 2, page 12 for case numbers by county and geographic region.

## Tuberculosis Cases and Rates per 100,000 Population by County and Region

New York State, 2007-2012

	2007		2008		2009		2010		2011		2012	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Albany	7	2.4	4	1.4	3	1.0	10	3.3	8	2.6	6	2.0
Clinton	1	1.3	1	1.3	1	1.3	0	0.0	0	0.0	2	2.4
Columbia	0	0.0	0	0.0	1	1.6	1	1.6	0	0.0	2	3.2
Delaware	0	0.0	1	2.1	0	0.0	0	0.0	1	2.1	0	0.0
Essex	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	1	2.0	2	3.9	1	2.0	0	0.0	0	0.0	0	0.0
Fulton	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Greene	0	0.0	1	2.1	1	2.1	0	0.0	0	0.0	0	0.0
Hamilton	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Montgomery	0	0.0	0	0.0	1	2.0	1	2.0	0	0.0	0	0.0
Otsego	0	0.0	1	1.6	0	0.0	0	0.0	0	0.0	0	0.0
Rensselaer	6	3.9	0	0.0	0	0.0	3	1.9	2	1.3	3	1.9
Saratoga	1	0.5	0	0.0	3	1.5	2	0.9	0	0.0	1	0.5
Schenectady	2	1.4	0	0.0	3	2.0	5	3.2	3	1.9	3	1.9
Schoharie	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Warren	0	0.0	1	1.6	0	0.0	0	0.0	0	0.0	0	0.0
Washington	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Albany Regional Total</b>	<b>18</b>	<b>1.2</b>	<b>11</b>	<b>0.8</b>	<b>14</b>	<b>1.0</b>	<b>22</b>	<b>1.5</b>	<b>14</b>	<b>0.9</b>	<b>17</b>	<b>1.1</b>
Allegany	0	0.0	1	2.0	0	0.0	1	2.0	0	0.0	0	0.0
Cattaraugus	0	0.0	0	0.0	1	1.2	0	0.0	0	0.0	0	0.0
Chautauqua	0	0.0	0	0.0	1	0.7	1	0.7	0	0.0	0	0.0
Erie	9	0.9	16	1.7	14	1.5	11	1.2	14	1.5	19	2.1
Genesee	2	3.3	1	1.7	2	3.3	1	1.7	2	3.3	0	0.0
Niagara	1	0.5	2	0.9	2	0.9	0	0.0	1	0.5	2	0.9
Orleans	0	0.0	0	0.0	0	0.0	1	2.3	1	2.3	0	0.0
Wyoming	0	0.0	1	2.3	0	0.0	1	2.4	0	0.0	0	0.0
<b>Buffalo Regional Total</b>	<b>12</b>	<b>0.8</b>	<b>21</b>	<b>1.3</b>	<b>20</b>	<b>1.3</b>	<b>16</b>	<b>1.0</b>	<b>18</b>	<b>1.2</b>	<b>21</b>	<b>1.4</b>
Chemung	2	2.2	2	2.2	1	1.1	0	0.0	0	0.0	1	1.1
Livingston	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Monroe	21	2.9	16	2.2	18	2.4	16	2.1	19	2.6	14	1.9
Ontario	1	1.0	1	1.0	0	0.0	1	0.9	3	2.8	0	0.0
Schuyler	0	0.0	0	0.0	1	5.2	0	0.0	0	0.0	0	0.0
Seneca	0	0.0	0	0.0	1	3.0	0	0.0	0	0.0	2	5.7
Steuben	1	1.0	1	1.0	0	0.0	3	3.0	0	0.0	0	0.0
Wayne	2	2.1	0	0.0	4	4.3	1	1.1	3	3.2	0	0.0
Yates	0	0.0	0	0.0	0	0.0	1	3.9	0	0.0	2	7.9
<b>Rochester Regional Total</b>	<b>27</b>	<b>2.1</b>	<b>20</b>	<b>1.6</b>	<b>25</b>	<b>2.0</b>	<b>22</b>	<b>1.7</b>	<b>25</b>	<b>2.0</b>	<b>19</b>	<b>1.5</b>
Broome	4	2.0	5	2.5	1	0.5	1	0.5	1	0.5	5	2.5
Cayuga	0	0.0	1	1.2	1	1.2	0	0.0	1	1.2	0	0.0
Chenango	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cortland	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.0
Herkimer	1	1.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jefferson	0	0.0	1	0.9	1	0.9	0	0.0	1	0.9	0	0.0
Lewis	1	3.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Madison	1	1.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Oncida	6	2.5	7	3.0	5	2.1	7	3.0	8	3.4	5	2.1
Onondaga	14	3.1	22	4.8	19	4.1	13	2.8	8	1.7	11	2.4
Oswego	2	1.6	0	0.0	0	0.0	0	0.0	0	0.0	3	2.5
St. Lawrence	0	0.0	2	1.8	0	0.0	0	0.0	0	0.0	1	0.9
Tioga	2	3.9	1	1.9	0	0.0	0	0.0	0	0.0	0	0.0
Tompkins	2	2.1	2	2.1	5	5.2	0	0.0	3	3.0	4	3.9
<b>Syracuse Regional Total</b>	<b>33</b>	<b>1.9</b>	<b>41</b>	<b>2.4</b>	<b>32</b>	<b>1.8</b>	<b>21</b>	<b>1.2</b>	<b>22</b>	<b>1.3</b>	<b>30</b>	<b>1.7</b>
Dutchess	3	1.1	7	2.5	4	1.4	9	3.0	3	1.0	4	1.3
Nassau	48	3.6	45	3.4	38	2.8	48	3.6	33	2.5	36	2.7
Orange	7	2.1	8	2.3	1	0.3	5	1.3	9	2.4	6	1.6
Putnam	2	2.1	0	0.0	1	1.0	0	0.0	4	4.0	0	0.0
Rockland	18	6.3	24	8.4	17	5.9	21	6.7	10	3.2	11	3.5
Suffolk	44	3.1	63	4.4	51	3.6	40	2.7	43	2.9	33	2.2
Sullivan	0	0.0	0	0.0	1	1.4	1	1.3	1	1.3	0	0.0
Ulster	3	1.7	3	1.7	2	1.1	1	0.5	1	0.5	3	1.6
Westchester	46	5.0	62	6.7	40	4.3	37	3.9	38	4.0	35	3.7
<b>New Rochelle Regional Total</b>	<b>171</b>	<b>3.5</b>	<b>212</b>	<b>4.3</b>	<b>155</b>	<b>3.1</b>	<b>162</b>	<b>3.2</b>	<b>142</b>	<b>2.8</b>	<b>128</b>	<b>2.5</b>
<b>New York State Total</b>	<b>261</b>	<b>2.4</b>	<b>305</b>	<b>2.8</b>	<b>246</b>	<b>2.2</b>	<b>243</b>	<b>2.2</b>	<b>221</b>	<b>2.0</b>	<b>215</b>	<b>1.9</b>
<b>(Exclusive of New York City)</b>												
Bronx	158	11.9	149	11.2	137	10.4	116	8.4	102	7.4	101	7.3
Kings	283	11.5	264	10.7	208	8.4	233	9.3	214	8.5	190	7.6
New York	183	11.9	159	10.3	121	7.9	90	5.7	109	6.9	93	5.9
Queens	267	12.0	300	13.5	275	12.3	259	11.6	250	11.2	244	10.9
Richmond	23	5.2	23	5.2	18	4.1	13	2.8	14	3.0	23	4.9
<b>New York City Total</b>	<b>914</b>	<b>11.4</b>	<b>895</b>	<b>11.2</b>	<b>760</b>	<b>9.5</b>	<b>711</b>	<b>8.7</b>	<b>689</b>	<b>8.4</b>	<b>651</b>	<b>8.0</b>
<b>State Total</b>	<b>1,175</b>	<b>6.2</b>	<b>1,200</b>	<b>6.3</b>	<b>1,006</b>	<b>5.3</b>	<b>954</b>	<b>4.9</b>	<b>910</b>	<b>4.7</b>	<b>866</b>	<b>4.5</b>

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 2: Tuberculosis Cases and Rates per 100,000 Population by County and Region, New York State, 2007-2012**

## Tuberculosis Cases and Rates per 100,000 Population By Age and Gender New York State, 2012

Age (in years)	New York State (Exclusive of New York City)						New York City						New York State (Total)					
	Number of Cases			Rate per 100,000			Number of Cases			Rate per 100,000			Number of Cases			Rate per 100,000		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages	215	123	92	1.9	2.2	1.6	651	365	286	8.0	9.4	6.7	866	488	378	4.5	5.2	3.8
Under 5	4	2	2	0.6	0.6	0.6	5	3	2	1.0	1.1	0.8	9	5	4	0.8	0.8	0.7
5-9	3	0	3	0.4	0.0	0.9	3	1	2	0.6	0.4	0.9	6	1	5	0.5	0.2	0.9
10-14	5	2	3	0.7	0.5	0.8	7	5	2	1.5	2.1	0.9	12	7	5	1.0	1.1	0.8
15-19	9	4	5	1.1	0.9	1.2	19	10	9	3.5	3.7	3.4	28	14	14	2.0	2.0	2.1
20-24	12	8	4	1.6	2.0	1.1	38	21	17	5.9	6.7	5.2	50	29	21	3.5	4.1	3.0
25-34	43	23	20	3.4	3.6	3.2	120	62	58	8.6	9.3	8.0	163	85	78	6.1	6.5	5.8
35-44	26	14	12	1.8	2.0	1.6	107	59	48	9.3	10.5	8.1	133	73	60	5.1	5.7	4.5
45-54	21	9	12	1.2	1.0	1.3	129	76	53	11.6	14.5	9.1	150	85	65	5.2	6.1	4.4
55-64	29	19	10	2.1	2.8	1.4	96	62	34	10.8	15.3	7.0	125	81	44	5.4	7.4	3.6
65+	63	42	21	3.9	6.1	2.2	127	66	61	12.8	16.7	10.2	190	108	82	7.3	10.0	5.3

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 3: Tuberculosis Cases and Rates per 100,000 Population, By Age and Gender, New York State, 2012**

Nine children under the age of five were diagnosed with active TB in 2012 in New York State, a decrease of 50.0 percent from 2011 (N=18). New York City's number of cases in this age group was slightly lower than that identified in 2011 (N=7 in 2011, N=5 in 2012), but for the rest of the state, the number of cases in this age group substantially decreased 63.6 percent, from 11 to four.

The highest morbidity rate in New York City, as well as the rest of the state, occurred in the 65 years and older age group (12.8 per 100,000 and 3.9 per 100,000, respectively). Statewide, the tuberculosis incidence rate among males was 1.4 times the female rate (5.2 compared to 3.8 per 100,000). The largest disparity by gender occurred in the 55-64 year age group, where the male rate was 2.1 times the female rate (7.4 compared to 3.6 per 100,000).

## Tuberculosis Cases and Rates by Gender, Age\*, and Race/Ethnicity\*\*

New York State, 2012

	New York State (Exclusive of New York City)		New York City		New York State (Total)	
	No.	Rate (per 100,000)	No.	Rate (per 100,000)	No.	Rate (per 100,000)
<b>GENDER</b>						
Male	123	2.2	365	9.4	488	5.2
Female	92	1.6	286	6.7	378	3.8
<b>AGE</b>						
Under 5 years	4	0.6	5	1.0	9	0.8
5-9	3	0.4	3	0.6	6	0.5
10-14	5	0.7	7	1.5	12	1.0
15-19	9	1.1	19	3.5	28	2.0
20-24	12	1.6	38	5.9	50	3.5
25-34	43	3.4	120	8.6	163	6.1
35-44	26	1.8	107	9.3	133	5.1
45-54	21	1.2	129	11.6	150	5.2
55-64	29	2.1	96	10.8	125	5.4
65+	63	3.9	127	12.8	190	7.3
<b>RACE/ETHNICITY</b>						
White, non-Hispanic	52	0.6	43	1.6	95	0.8
Black, non-Hispanic	35	3.8	138	7.4	173	6.2
Hispanic	53	4.9	178	7.6	231	6.8
Asian	69	18.3	270	26.3	339	24.1
Native American	0	0.0	0	0.0	0	0.0
Pacific Islander	1	39.6	0	0.0	1	18.8
Multiple Races	1	0.6	12	8.1	13	4.0
Other/Unknown	4	16.8	10	17.3	14	17.2
<b>TOTAL</b>	<b>215</b>	<b>1.9</b>	<b>651</b>	<b>8.0</b>	<b>866</b>	<b>4.5</b>

\*Age calculation based on date of birth and report date.

\*\* Rate Calculations based on 2010 Census.

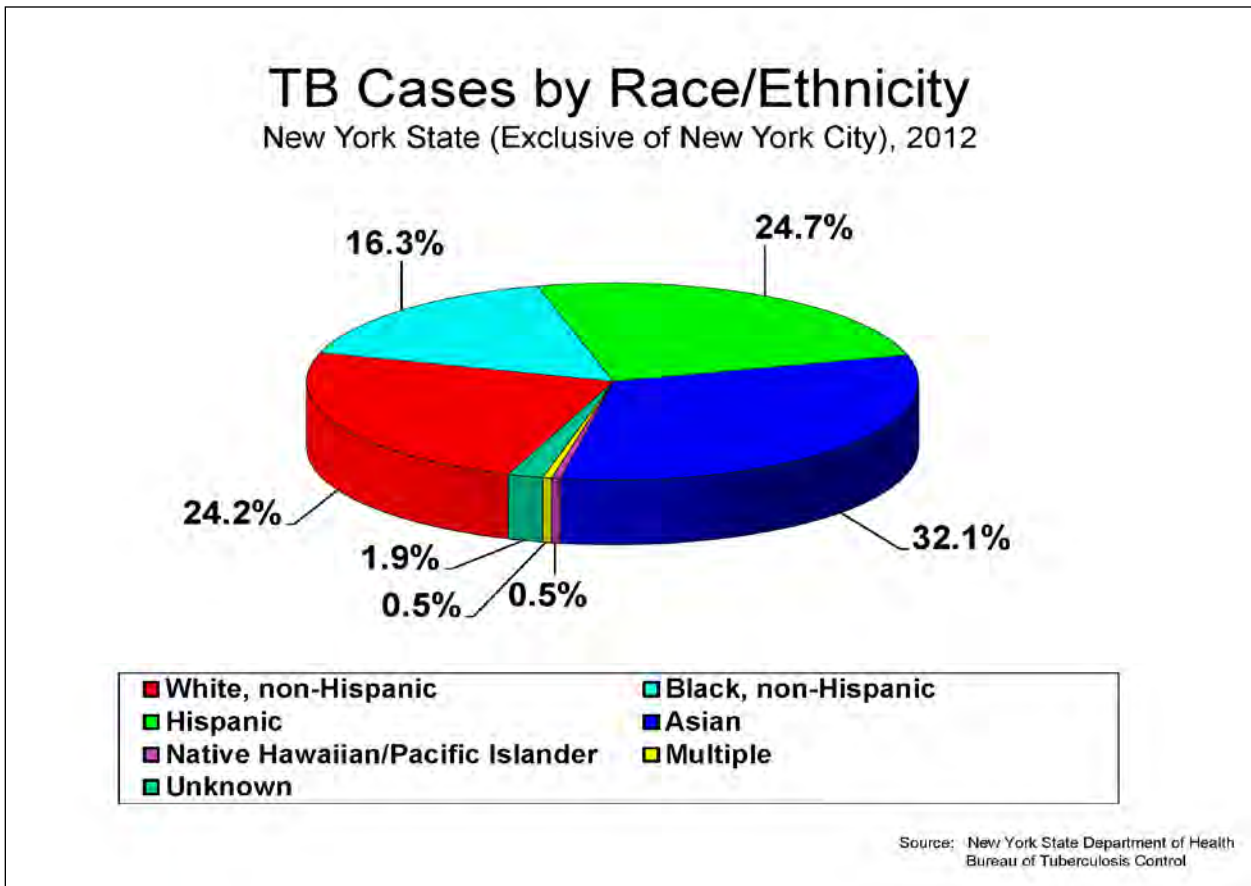
Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 4: Tuberculosis Cases and Rates by Gender, Age, and Race/Ethnicity, New York State, 2012**

Males accounted for 56.4 percent of TB cases reported statewide in 2012. The case rates for males and females in New York City were over 4 times that of males and females in the rest of the state (9.4 compared to 2.2 per 100,000 for males; 6.7 compared to 1.6 per 100,000 for females).

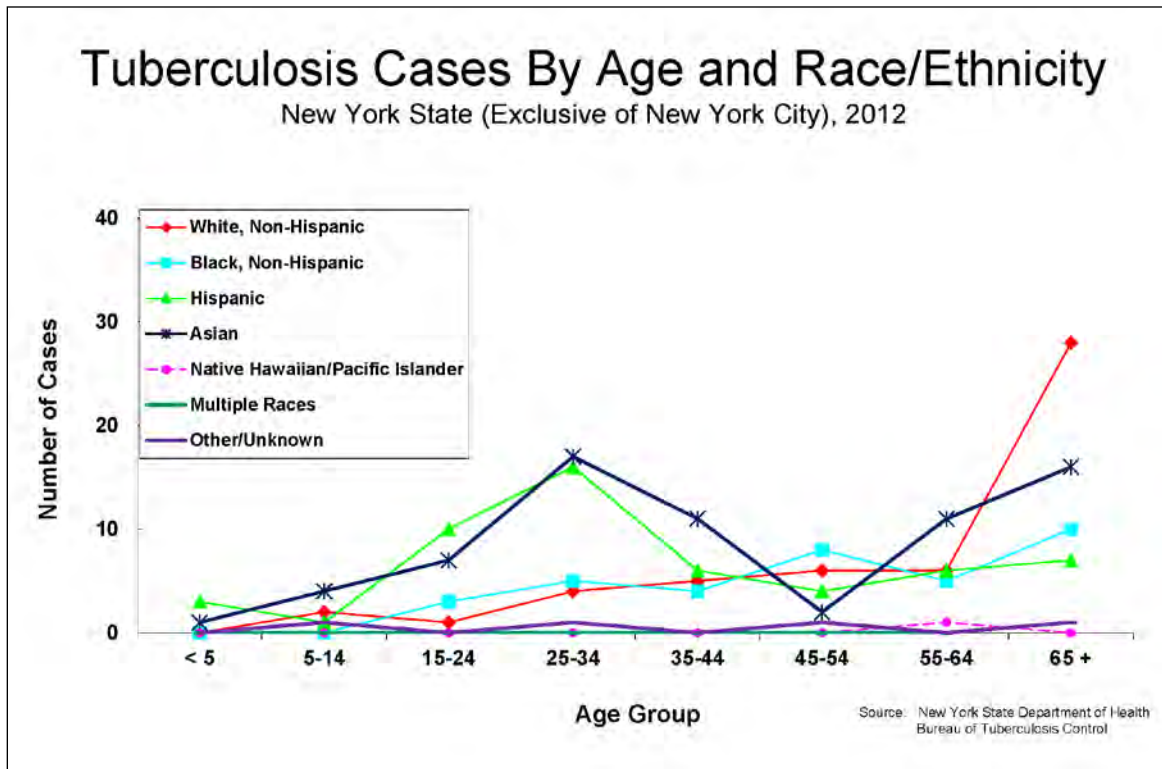
In 2012, the highest case rate statewide was found among Asians (24.1 per 100,000). Hispanics and black, non-Hispanics had similar case rates across the whole state even though Hispanics contributed more cases than black, non-Hispanics (N=231 and 6.8 per 100,000; N=173 and 6.2 per 100,000, respectively).





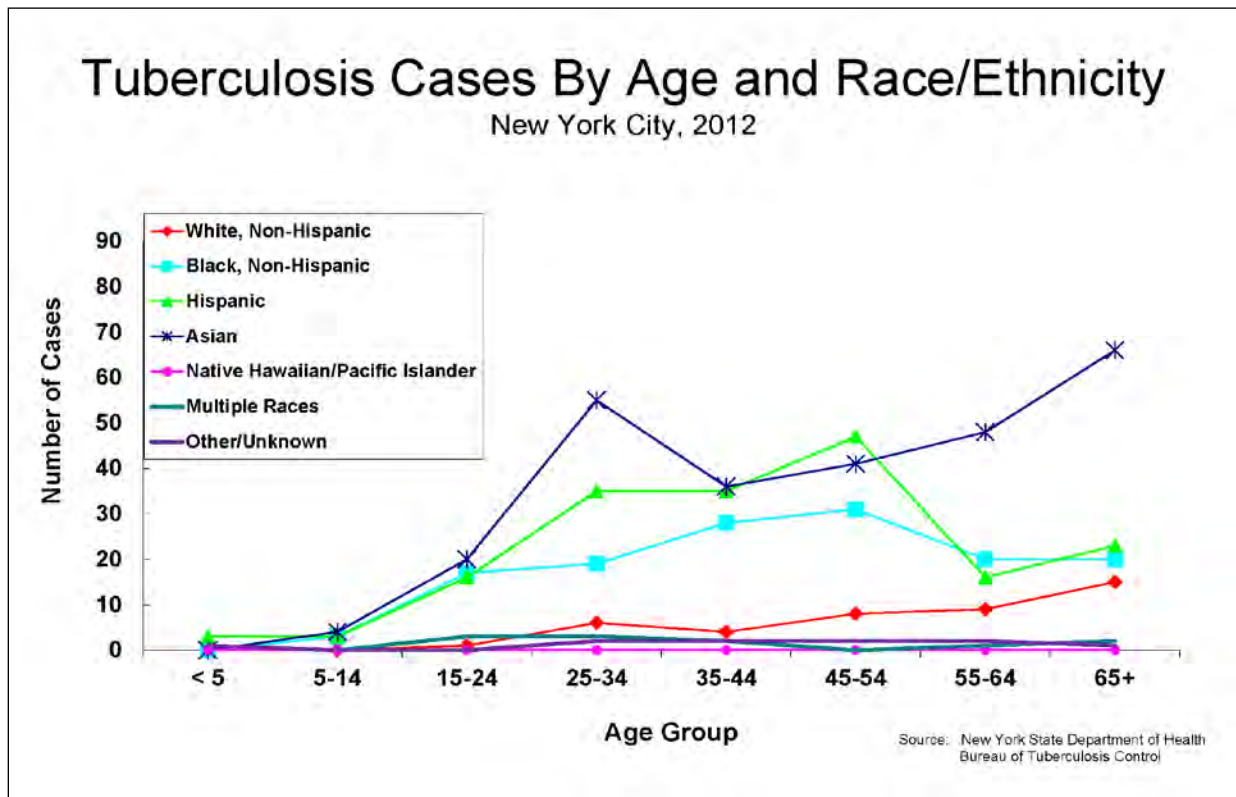
**Figure 4: Tuberculosis Cases By Race/Ethnicity, New York State (Exclusive of New York City), 2012**

In New York State (exclusive of New York City), Asians represented the largest (32.1%) proportion of TB cases in 2012. Hispanics and white, non-Hispanics represented slightly less than one-fourth of TB cases reported.



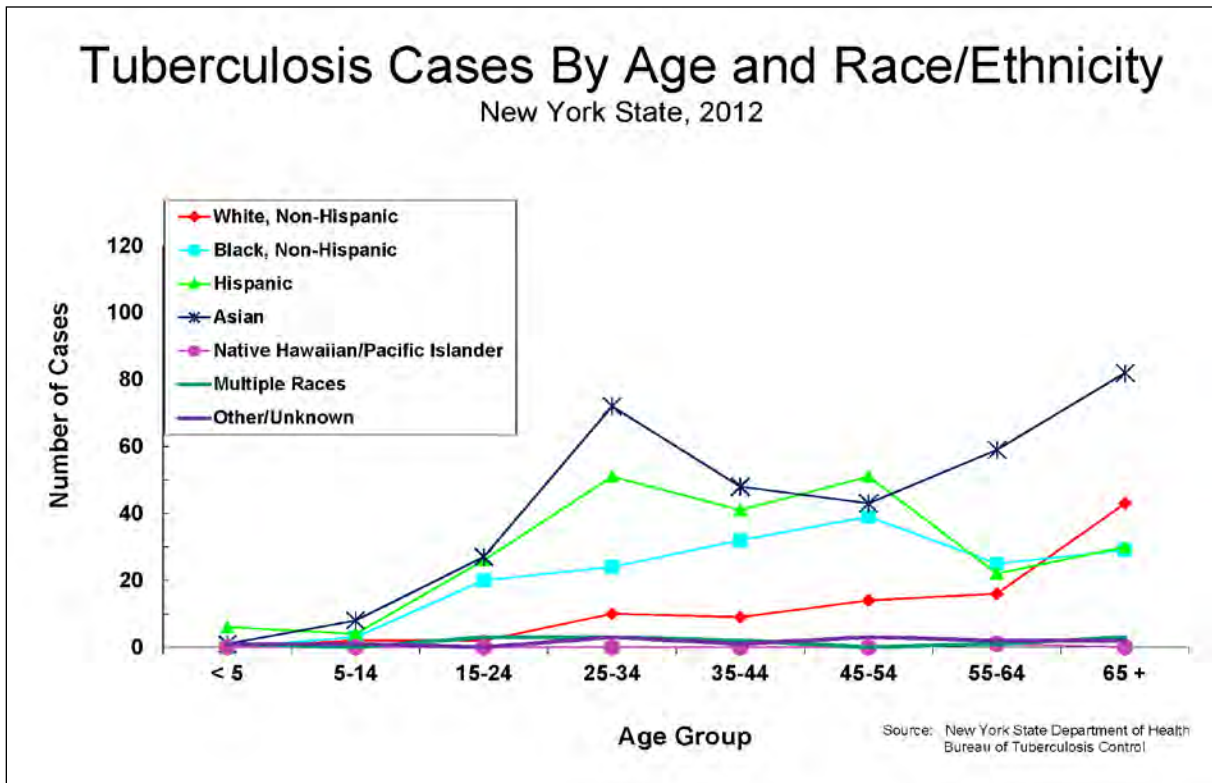
**Figure 5: Tuberculosis Cases By Age and Race/Ethnicity, New York State (Exclusive of New York City), 2012**

The number of TB cases among Asians in New York State (exclusive of New York City) peaked in the 25-34 age group (N=17), with a slightly lower peak in the over 65 year age group (N=16). The largest number of cases in the 65 years and older age group was found among white, non-Hispanic cases (N=28). The greatest morbidity among Hispanics was in the 25-34 year age group (N=16). Hispanics also contributed 75.0% of the cases under the age of five (N=3/4).



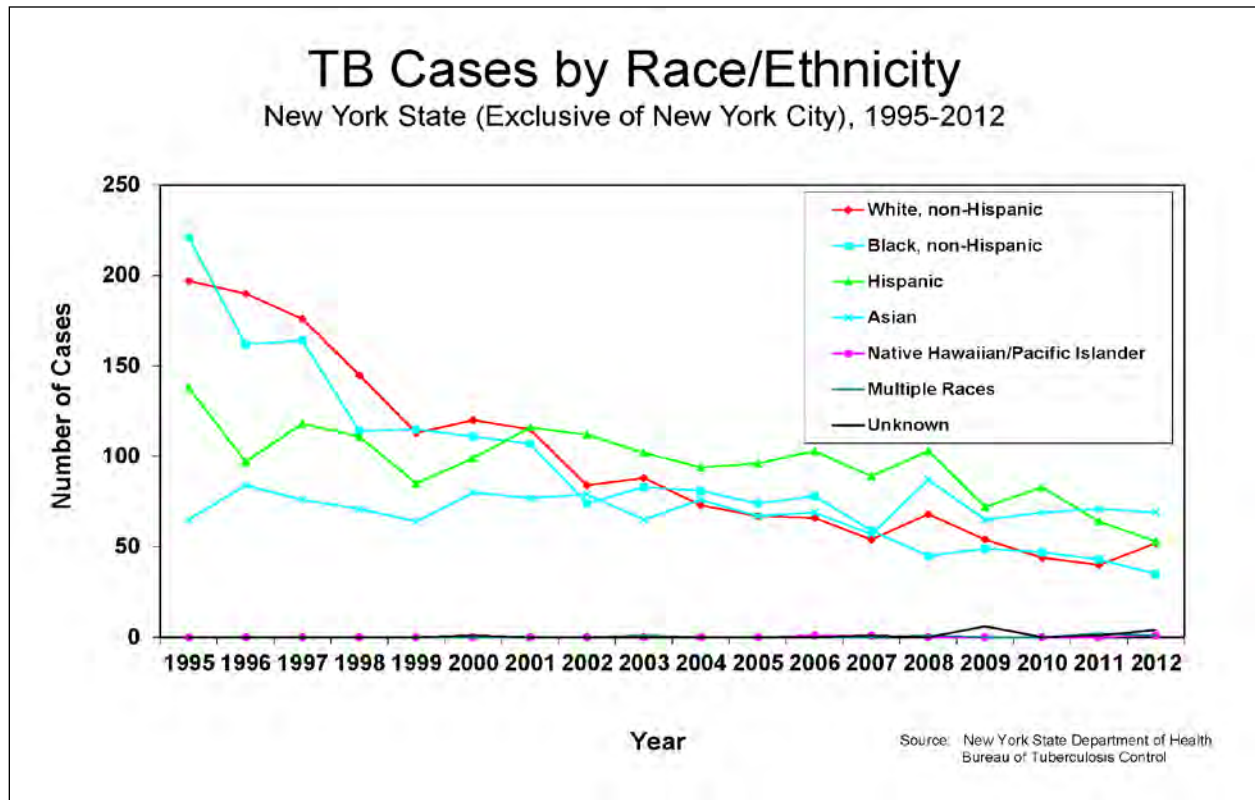
**Figure 6: Tuberculosis Cases By Age and Race/Ethnicity, New York City, 2012**

The number of TB cases among Asians in New York City peaked in the 65 and older age group as well as the 25-34 year age group (N=66 and N=55, respectively). Among Hispanics and black, non-Hispanics, the greatest morbidity was seen in the 45-54 year age group (N=48 and N=31). The largest number of white, non-Hispanic cases occurred in those 65 years of age and older (N=15).



**Figure 7: Tuberculosis Cases By Age and Race/Ethnicity, New York State, 2012**

Statewide the largest number of cases came among Asians in the 65 years and older age group as well as the 25-34 year age group (N=82 and N=72, respectively). Hispanics followed with the highest morbidity in the 25-34 and 45-54 year age groups (N=51 for both groups).



**Figure 8: Tuberculosis Cases By Race/Ethnicity, New York State (Exclusive of New York City), 1995-2012**

The number of TB cases among white and black, non-Hispanics in New York State (exclusive of New York City) has decreased considerably over the last 18 years. Since 1995, the number of white, non-Hispanics decreased 73.6 percent from 197 cases to 52 cases and black, non-Hispanics decreased 84.2 percent from 221 cases to 35.

Over the last year, the number of TB cases decreased across all racial/ethnic groups, except for white, non-Hispanics who increased 30.0 percent (N=40 in 2011 and N=52 in 2012). Hispanics experienced the largest decline in case numbers, from 64 in 2011 to 53 in 2012 (17.2%).

## Tuberculosis Cases by U.S.-Born and Foreign-Born\*

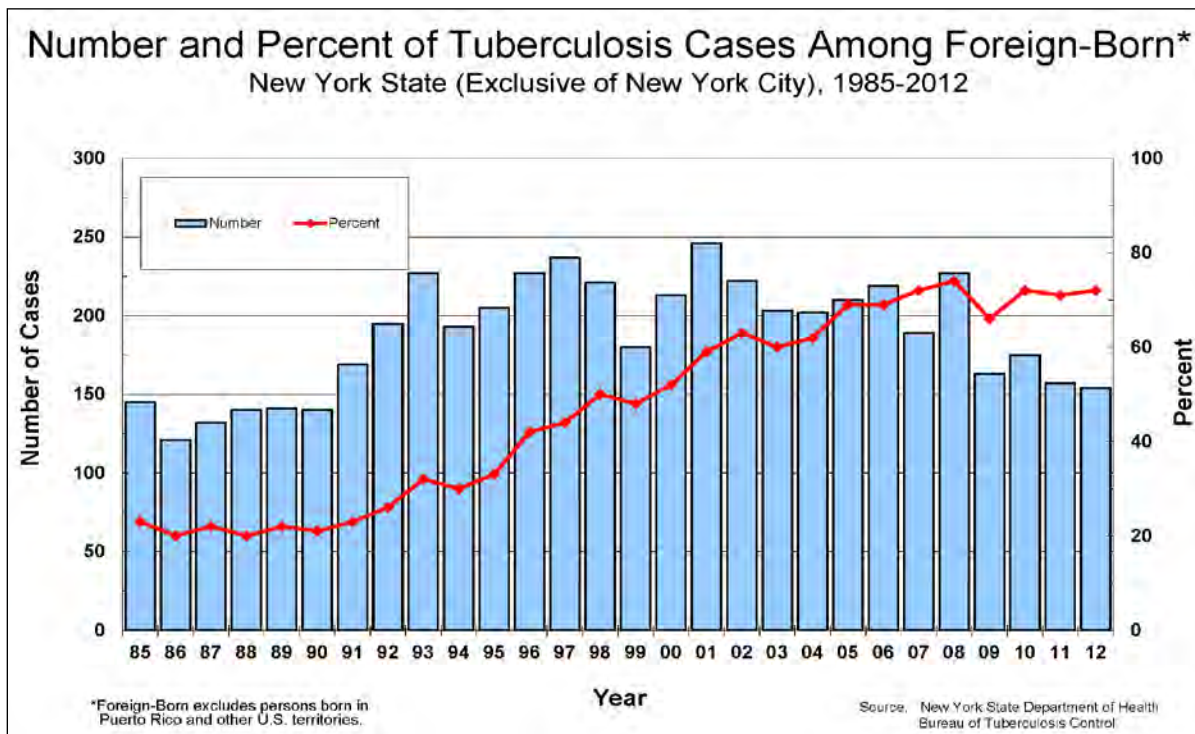
Total Number; Number of U.S.-Born; Number and Percent of Foreign-Born  
New York State Counties (Exclusive of New York City), 2012

County	Total Number	U.S.-Born Number	Foreign-Born Number	Foreign-Born Percent
Albany	6	3	3	50.0
Allegany	0	0	0	0.0
Broome	5	0	5	100.0
Cattaraugus	0	0	0	0.0
Cayuga	0	0	0	0.0
Chautauqua	0	0	0	0.0
Chemung	1	0	1	100.0
Chenango	0	0	0	0.0
Clinton	2	1	1	50.0
Columbia	2	1	1	50.0
Cortland	1	1	0	0.0
Delaware	0	0	0	0.0
Dutchess	4	1	3	75.0
Erie	19	6	13	68.4
Essex	0	0	0	0.0
Franklin	0	0	0	0.0
Fulton	0	0	0	0.0
Genesee	0	0	0	0.0
Greene	0	0	0	0.0
Hamilton	0	0	0	0.0
Herkimer	0	0	0	0.0
Jefferson	0	0	0	0.0
Lewis	0	0	0	0.0
Livingston	0	0	0	0.0
Madison	0	0	0	0.0
Monroe	14	3	11	78.6
Montgomery	0	0	0	0.0
Nassau	36	8	28	77.8
Niagara	2	1	1	50.0
Oneida	5	1	4	80.0
Onondaga	11	5	6	54.5
Ontario	0	0	0	0.0
Orange	6	1	5	83.3
Orleans	0	0	0	0.0
Oswego	3	2	1	33.3
Otsego	0	0	0	0.0
Putnam	0	0	0	0.0
Rensselaer	3	3	0	0.0
Rockland	11	1	10	90.9
St. Lawrence	1	0	1	100.0
Saratoga	1	0	1	100.0
Schenectady	3	0	3	100.0
Schoharie	0	0	0	0.0
Schuyler	0	0	0	0.0
Seneca	2	2	0	0.0
Steuben	0	0	0	0.0
Suffolk	33	11	22	66.7
Sullivan	0	0	0	0.0
Tioga	0	0	0	0.0
Tompkins	4	1	3	75.0
Ulster	3	1	2	66.7
Warren	0	0	0	0.0
Washington	0	0	0	0.0
Wayne	0	0	0	0.0
Westchester	35	7	28	80.0
Wyoming	0	0	0	0.0
Yates	2	1	1	50.0
<b>TOTAL</b>	<b>215</b>	<b>61</b>	<b>154</b>	<b>71.6</b>

\*Foreign-Born excludes persons born in Puerto Rico and other U.S. Territories.

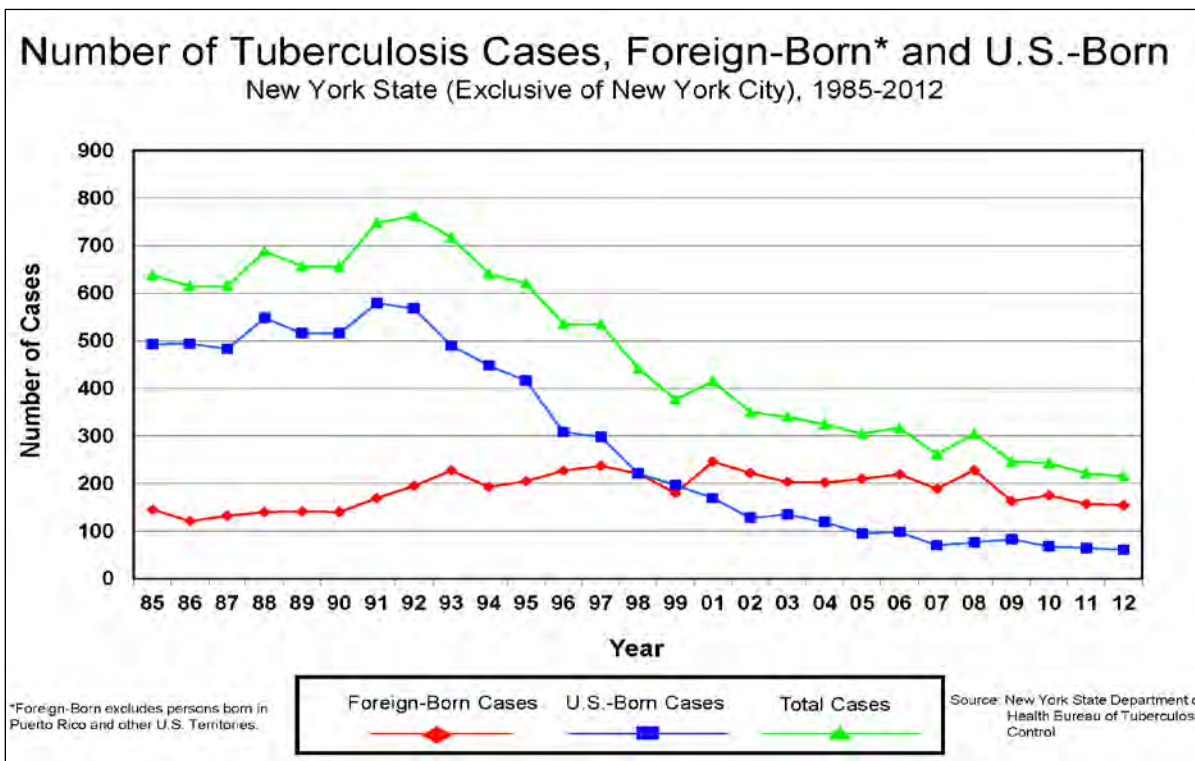
Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 5: Tuberculosis Cases by U.S.-Born and Foreign-Born, New York State  
(Exclusive of New York City), 2012**

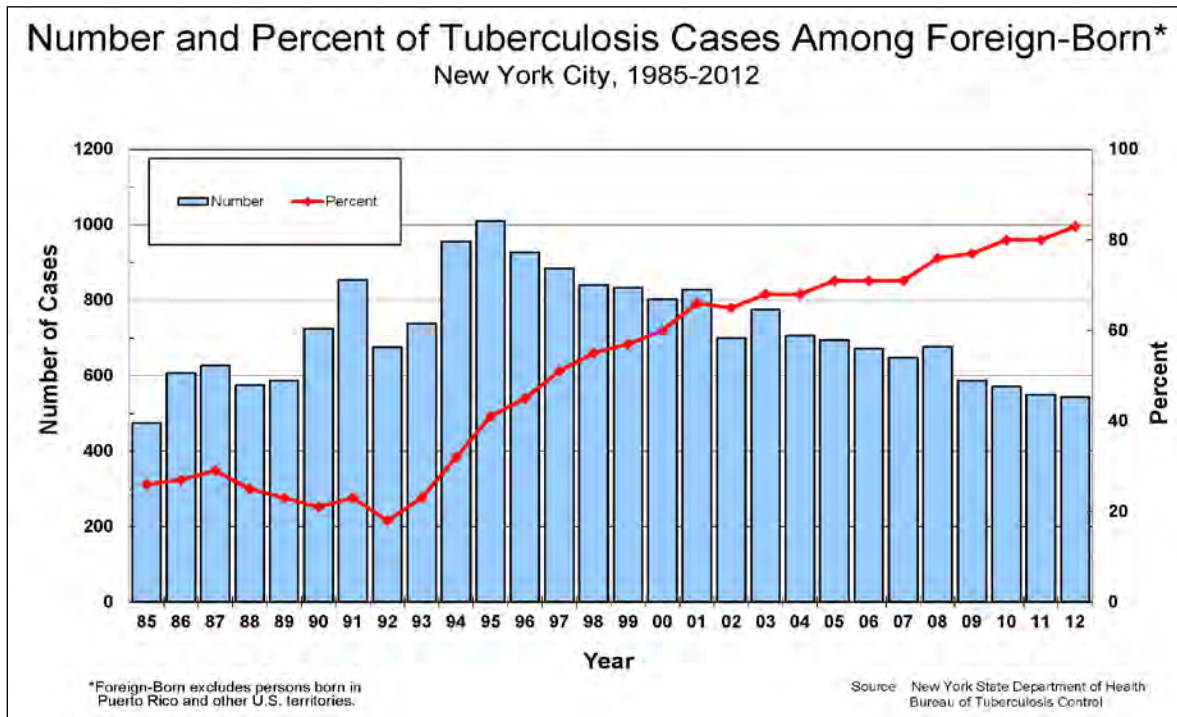


**Figure 9: Number and Percent of Tuberculosis Cases Among Foreign-Born, New York State (Exclusive of New York City), 1985-2012**

The overall number of foreign-born TB cases in New York State (exclusive of New York City) decreased from 157 in 2011 to 154 in 2012. Despite the small decrease in cases, the percent of TB cases reported among the foreign-born increased slightly from 71.0 percent in 2011 to 71.6 in 2012.

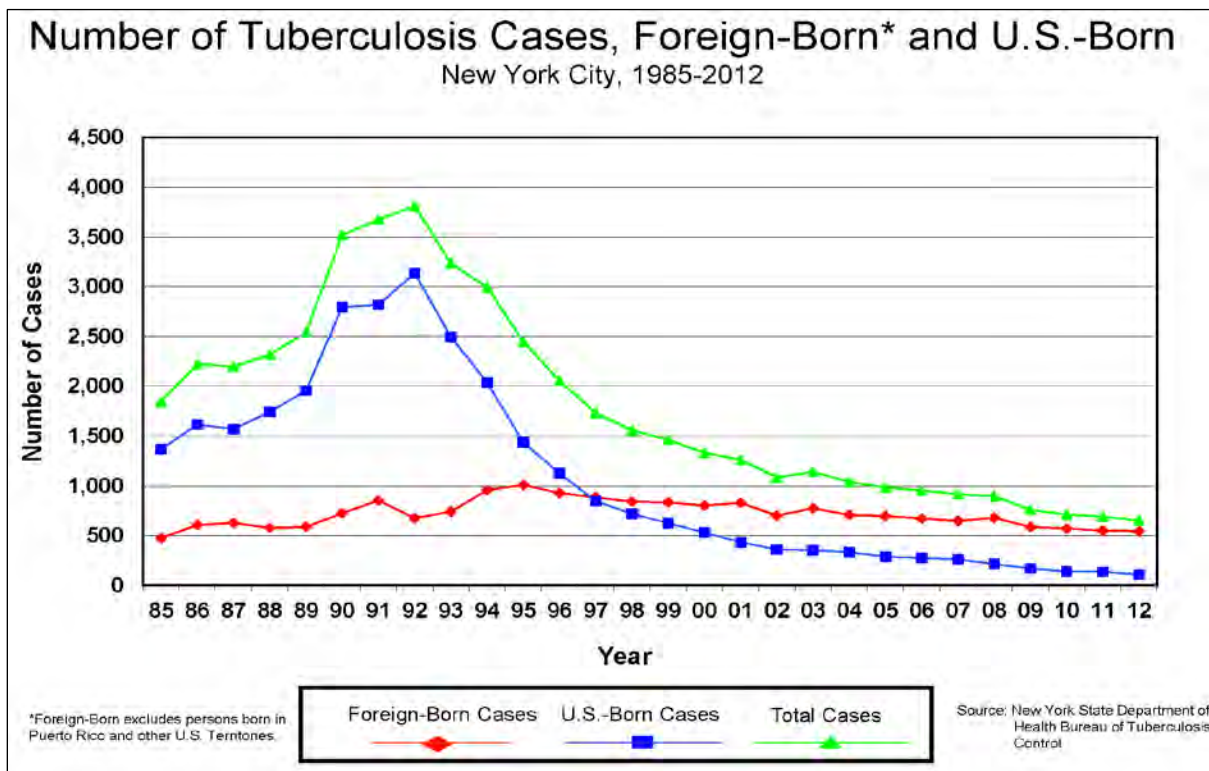


**Figure 10: Number of Tuberculosis Cases, Foreign-Born and U.S.-Born, New York State (Exclusive of New York City), 1985-2012**



**Figure 11: Number and Percent of Tuberculosis Cases Among Foreign-Born, New York City, 1985-2012**

The number of TB cases reported among the foreign-born decreased from 550 in 2011 to 543 in 2012 in New York City. Although there were fewer foreign-born cases, the percentage of foreign-born cases increased from 79.8 percent in 2011 to 83.4 in 2012.



**Figure 12: Number of Tuberculosis Cases, Foreign-Born and U.S.-Born, New York City, 1985-2012**



# Tuberculosis Cases by Country of Origin\*

New York State, 2012

	New York State (Exclusive of New York City)	New York City	New York State (Total)
United States	61	86	147
China	6	101	107
India	20	32	52
Philippines	9	36	45
Ecuador	6	34	40
Mexico	5	34	39
Haiti	9	25	34
Dominican Republic	2	31	33
Bangladesh	3	25	28
Nepal	3	22	25
Puerto Rico**	4	18	22
Pakistan	7	12	19
Korea, Republic of	2	14	16
Guatemala	5	9	14
Burma	5	8	13
Peru	5	8	13
Honduras	7	5	12
El Salvador	9	3	12
Guyana	2	9	11
Hong Kong	1	8	9
Nigeria	1	8	9
Ukraine	2	6	8
Vietnam	4	4	8
Columbia	1	7	8
Trinidad and Tobago	0	7	7
Poland	0	6	6
Jamaica	0	5	5
The Gambia	2	3	5
Thailand	1	4	5
Bhutan	4	1	5
South Africa	1	4	5
Senegal	0	5	5
Other Countries	28	71	99
Unknown	0	0	0
<b>Total</b>	<b>215</b>	<b>651</b>	<b>866</b>

\* Only countries representing  $\geq 5$  TB cases statewide are named.

\*\*Puerto Rico and other U.S. Territories are considered separately for the purpose of this table.

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 6: Tuberculosis Cases by Country of Origin, New York State, 2012**

### Tuberculosis Cases by World Region of Origin

New York State (Exclusive of New York City), 2007-2012

REGION	2007	2008	2009	2010	2011	2012
Africa	21	17	13	13	13	16
East Asia	31	48	35	37	41	30
Caribbean/South and Central America/Mexico	93	101	69	81	62	54
Europe	15	19	13	11	6	11
India/Pakistan/Middle East	29	42	33	29	34	39
United States/Canada*	72	77	83	72	65	65
<b>TOTAL</b>	<b>261</b>	<b>304</b>	<b>246</b>	<b>243</b>	<b>221</b>	<b>215</b>

\*United States/Canada includes Puerto Rico and other U.S. Territories.

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 7: Tuberculosis Cases by World Region of Origin, New York State (Exclusive of New York City), 2007-2012**

In New York State (exclusive of New York City), the TB cases originating from East Asia and the Caribbean/South and Central America/Mexico reached their lowest numbers in the past 6 years, with East Asia experiencing the greatest decline of 26.8 percent over the last year (N=41 in 2011 and N=30 in 2012). The number of cases with U.S. or Canadian origins remained the same over the last year, while those of European descent nearly doubled (N=6 in 2011 and N=11 in 2012).

## Tuberculosis Cases and Rates per 100,000 Population

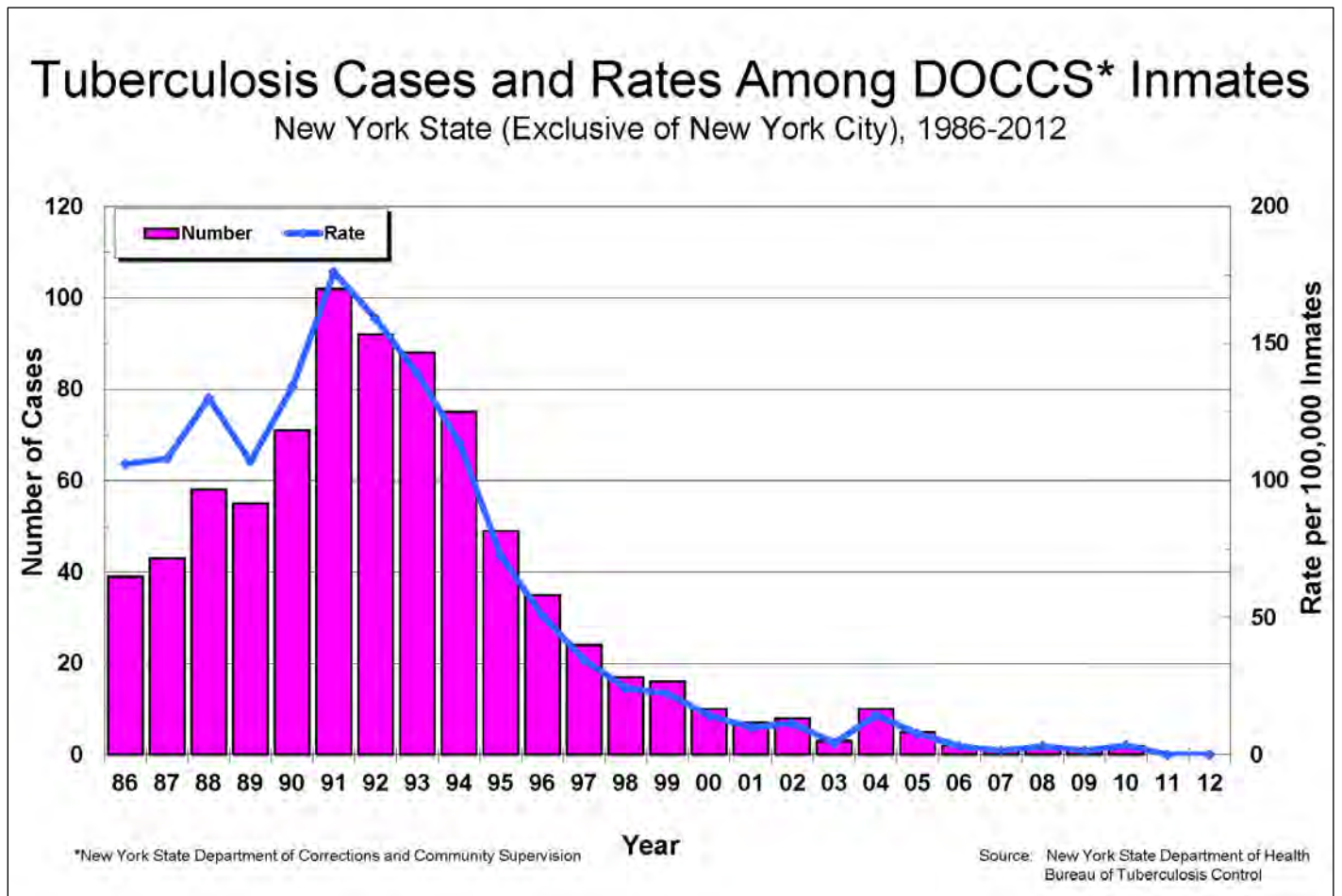
Total Number and Rate; Number and Rate in General Population; Number of DOCCS\* Inmates  
New York State Counties (Exclusive of New York City), 2012

County	2010 Population	Total Number	Rate per 100,000	General Pop. Number	General Pop. Rate	Inmate Number
Albany	304,204	6	2.0	6	2.0	0
Allegany	48,946	0	0.0	0	0.0	0
Broome	200,600	5	2.5	5	2.5	0
Cattaraugus	80,317	0	0.0	0	0.0	0
Cayuga	80,026	0	0.0	0	0.0	0
Chautauqua	134,905	0	0.0	0	0.0	0
Chemung	88,830	1	1.1	1	1.1	0
Chenango	50,477	0	0.0	0	0.0	0
Clinton	82,128	2	2.4	2	2.4	0
Columbia	63,096	2	3.2	2	3.2	0
Cortland	49,336	1	2.0	1	2.0	0
Delaware	47,980	0	0.0	0	0.0	0
Dutchess	297,488	4	1.3	4	1.3	0
Erie	91,9040	19	2.1	19	2.1	0
Essex	39,370	0	0.0	0	0.0	0
Franklin	51,599	0	0.0	0	0.0	0
Fulton	55,531	0	0.0	0	0.0	0
Genesee	60,079	0	0.0	0	0.0	0
Greene	49,221	0	0.0	0	0.0	0
Hamilton	4,836	0	0.0	0	0.0	0
Herkimer	64,519	0	0.0	0	0.0	0
Jefferson	116,229	0	0.0	0	0.0	0
Lewis	27,087	0	0.0	0	0.0	0
Livingston	65,393	0	0.0	0	0.0	0
Madison	73,442	0	0.0	0	0.0	0
Monroe	744,344	14	1.9	14	1.9	0
Montgomery	50,219	0	0.0	0	0.0	0
Nassau	1,339,532	36	2.7	36	2.7	0
Niagara	216,469	2	0.9	2	0.9	0
Oneida	234,878	5	2.1	5	2.1	0
Onondaga	467,026	11	2.4	11	2.4	0
Ontario	107,931	0	0.0	0	0.0	0
Orange	372,813	6	1.6	6	1.6	0
Orleans	42,883	0	0.0	0	0.0	0
Oswego	122,109	3	2.5	3	2.5	0
Otsego	62,259	0	0.0	0	0.0	0
Putnam	99,710	0	0.0	0	0.0	0
Rensselaer	159,429	3	1.9	3	1.9	0
Rockland	311,687	11	3.5	11	3.5	0
St. Lawrence	111,944	1	0.9	1	0.9	0
Saratoga	219,607	1	0.5	1	0.5	0
Schenectady	154,727	3	1.9	3	1.9	0
Schoharie	32,749	0	0.0	0	0.0	0
Schuyler	18,343	0	0.0	0	0.0	0
Seneca	35,251	2	5.7	2	5.7	0
Steuben	98,990	0	0.0	0	0.0	0
Suffolk	1,493,350	33	2.2	33	2.2	0
Sullivan	77,547	0	0.0	0	0.0	0
Tioga	51,125	0	0.0	0	0.0	0
Tompkins	101,564	4	3.9	4	3.9	0
Ulster	182,493	3	1.6	3	1.6	0
Warren	65,707	0	0.0	0	0.0	0
Washington	63,216	0	0.0	0	0.0	0
Wayne	93,772	0	0.0	0	0.0	0
Westchester	949,113	35	3.7	35	3.7	0
Wyoming	42,155	0	0.0	0	0.0	0
Yates	25,348	2	7.9	2	7.9	0
<b>TOTAL</b>	<b>11,202,969</b>	<b>215</b>	<b>1.9</b>	<b>215</b>	<b>1.9</b>	<b>0</b>

\*New York State Department of Corrections and Community Supervision

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 8: Tuberculosis Cases and Rates per 100,000 Population, New York State  
(Exclusive of New York City), 2012**



**Figure 13: Tuberculosis Cases and Rates Among DOCCS Inmates, New York State (Exclusive of New York City), 1986-2012**

During the late 1980s and early 1990s, a substantial proportion of TB cases reported by New York State (exclusive of New York City) were in the New York State Department of Corrections and Community Supervision (DOCCS) inmate population. Among the DOCCS inmate population, there has been a notable decline in cases since 1991 when 102 new cases (176 per 100,000 offenders) were reported. In 2011 and 2012 no new cases were reported.

### HIV Status Among Tuberculosis Patients

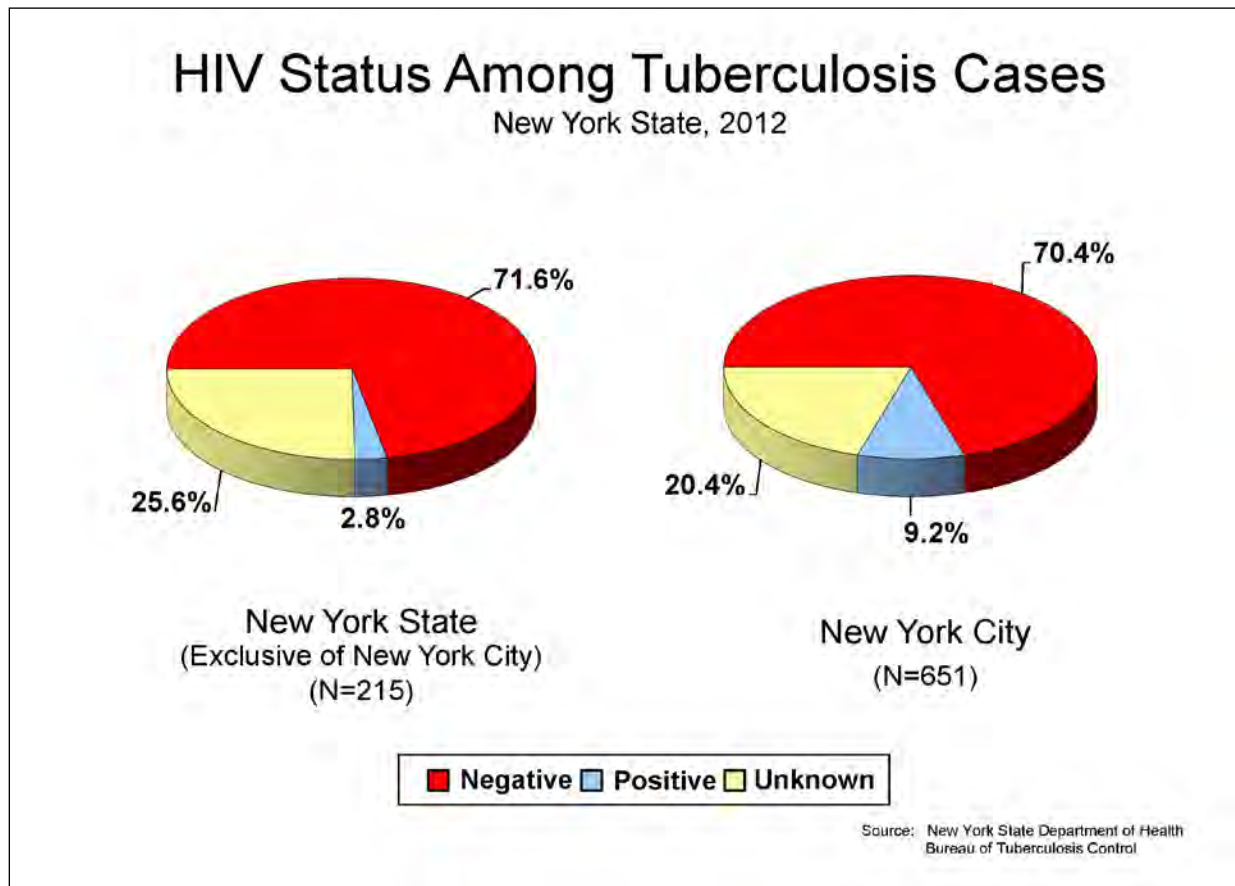
New York State (Exclusive of New York City), 2007-2012

HIV STATUS	2007		2008		2009		2010		2011		2012	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Negative	174	(66.7)	222	(72.8)	163	(66.3)	178	(73.3)	165	(74.7)	154	(71.6)
Positive	17	(6.5)	19	(6.2)	11	(4.5)	16	(6.6)	11	(5.0)	6	(2.8)
Unknown	70	(26.8)	64	(21.0)	72	(29.3)	49	(20.2)	45	(20.4)	55	(25.6)
<b>TOTAL</b>	<b>261</b>	<b>(100.0)</b>	<b>305</b>	<b>(100.0)</b>	<b>246</b>	<b>(100.0)</b>	<b>243</b>	<b>(100.0)</b>	<b>221</b>	<b>(100.0)</b>	<b>215</b>	<b>(100.0)</b>

Source: New York State Department of Health  
Bureau of Tuberculosis Control

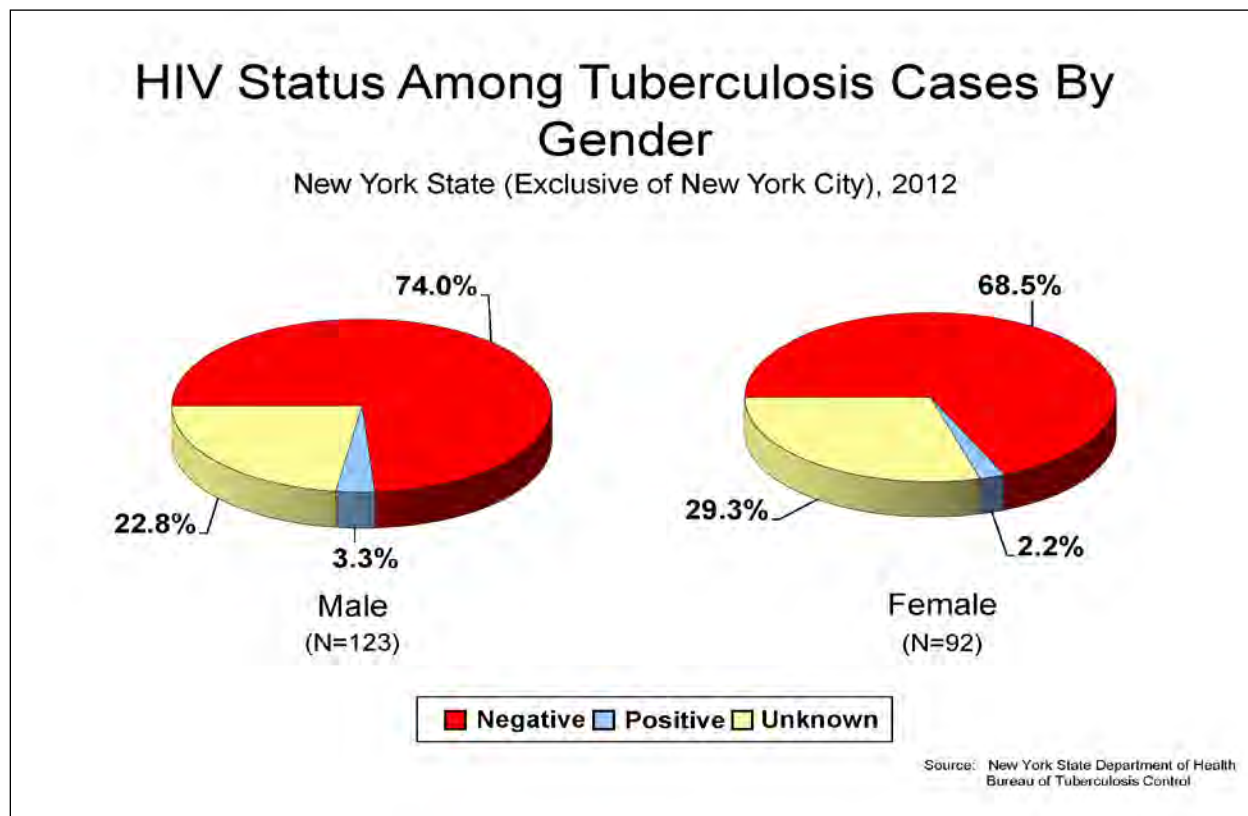
**Table 9: HIV Status Among Tuberculosis Patients, New York State (Exclusive of New York City), 2007-2012**

Knowledge of HIV status is essential for the proper treatment of patients with active TB. Previous comparisons between the HIV and TB registries suggest the percentage of individuals with unknown HIV status was due to a lack of HIV testing of individuals with TB, and not under reporting of HIV results to the TB registry. Of the 215 TB cases in 2012, only six (2.8%) had a positive HIV status, a substantial decrease from the 11 (5.0%) identified in 2011.



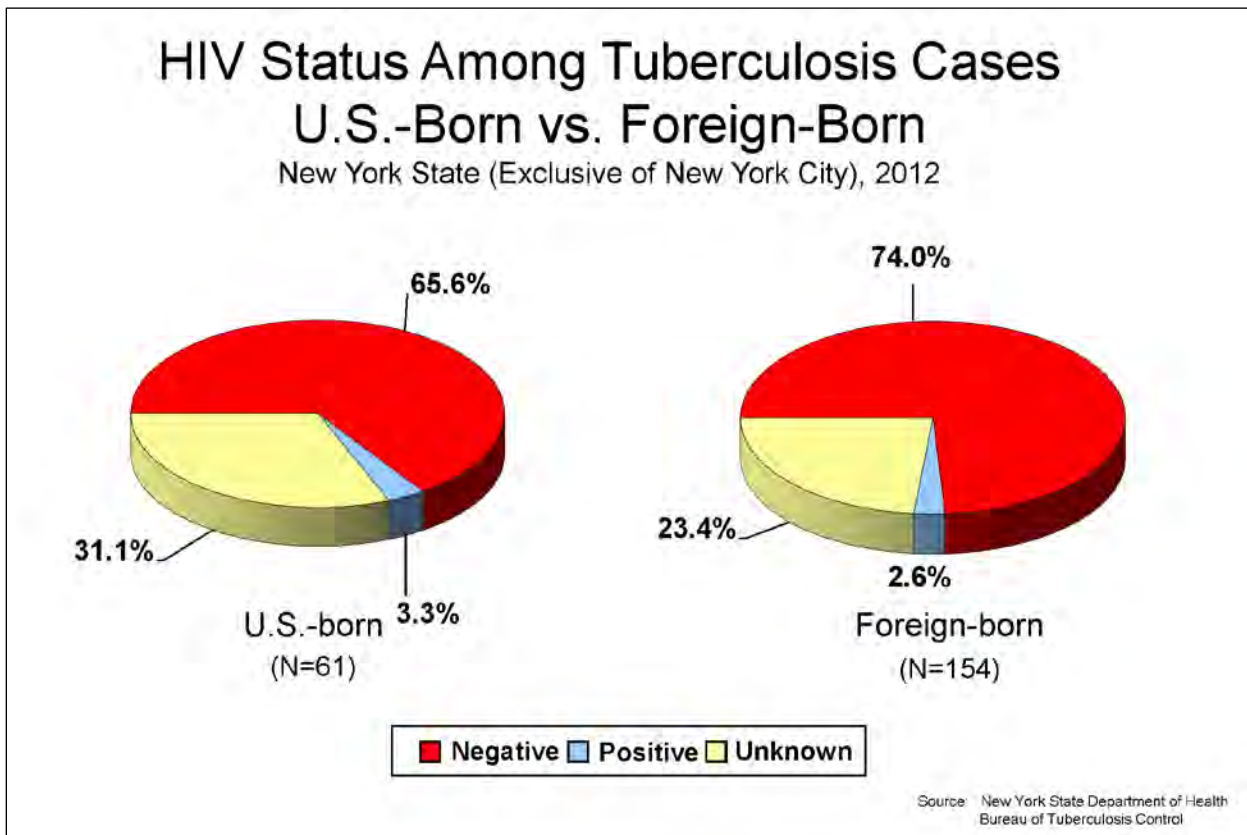
**Figure 14: HIV Status Among Tuberculosis Cases, New York State, 2012**

In 2012, the percentage of TB cases with a known HIV status was greater in New York City compared to New York State (exclusive of New York City) (79.6% and 74.4%, respectively) and the percentage of cases co-infected with HIV was also much greater in New York City than in the rest of the state (9.2% and 2.8%, respectively).



**Figure 15: HIV Status Among Tuberculosis Cases By Gender, New York State (Exclusive of New York City), 2012**

In 2012, 29.3 percent (N=27) of female TB cases and 22.8 percent (N=28) of males in New York State (exclusive of New York City) had an unknown HIV status. The percentage of cases with a negative HIV result was higher for males than females (74.0%, N=91 for males and 68.5%, N=63 for females). The number of female TB cases co-infected with HIV drastically decreased by 60.0%, from five in 2011 to two in 2012.



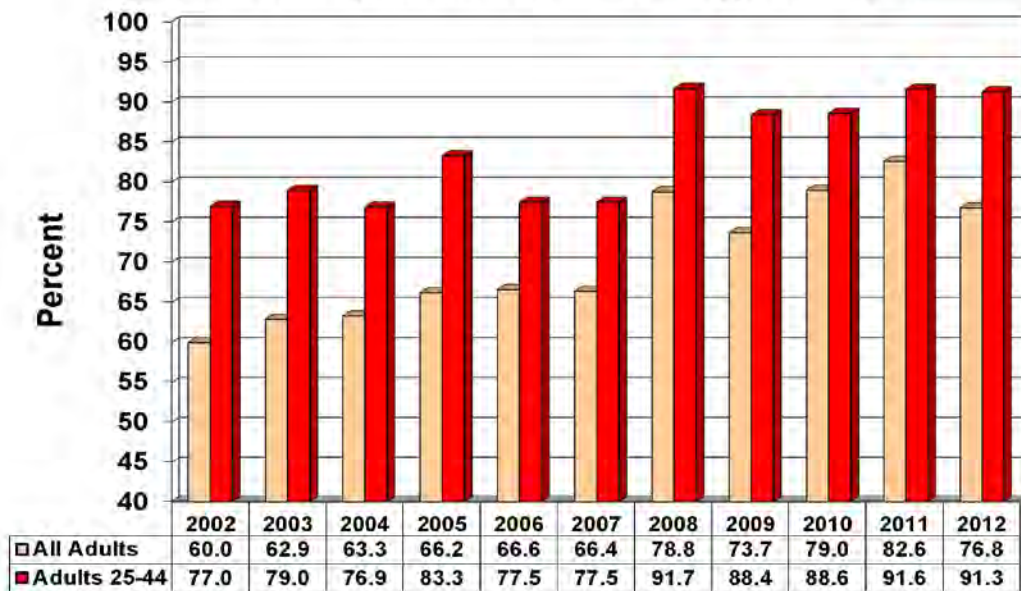
**Figure 16: HIV Status Among Tuberculosis Cases, U.S.-Born vs. Foreign-Born, New York State (Exclusive of New York City), 2012**

In New York State (exclusive of New York City), a greater percentage of foreign-born TB cases (76.6%, N=118) reported a known HIV status, than U.S.-born (68.9%, N=42) in 2012. The percent of U.S.-born TB cases with an unknown HIV status was higher than that seen among foreign-born cases (31.1%, N=19 for U.S.-born and 23.4%, N=36 for foreign-born cases). The percentage of HIV co-infection was similar among both groups (3.3%, N=2 for U.S.-born and 2.6%, N=4 for foreign-born cases).



## Percent of Adults with TB Who Have Been Tested for HIV

New York State (Exclusive of New York City), 2002-2012



Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Figure 17: Percent of Adults with TB Who Have Been Tested for HIV, New York State (Exclusive of New York City), 2002-2012**

Due to the high degree of co-infection with HIV and TB it has become increasingly important to assess the HIV status of all TB patients. In 2012, 76.8 percent of all adults with TB had a known HIV status. In the subgroup of TB cases between the ages of 25 and 44, the percentage with a known HIV status was much higher (91.3%).

## Primary Reason For Evaluation of Tuberculosis Cases

New York State (Exclusive of New York City), 2012

PRIMARY REASON FOR EVALUATION	Non-MDR		MDR	
	No.	(%)	No.	(%)
TB Symptoms	107	(50.5)	2	(66.7)
Abnormal Chest Radiograph	53	(25.0)	1	(33.3)
Incidental Lab Result	35	(16.5)	0	(0.0)
Contact Investigation	4	(1.9)	0	(0.0)
Immigration Medical Exam	3	(1.4)	0	(0.0)
Targeted Testing	2	(0.9)	0	(0.0)
Employment/Administrative Testing	1	(0.5)	0	(0.0)
Health Care Worker	1	(0.5)	0	(0.0)
Unknown	5	(2.4)	0	(0.0)
No Information Provided	1	(0.5)	0	(0.0)
<b>TOTAL</b>	<b>212</b>	<b>(100.0)</b>	<b>3</b>	<b>(100.0)</b>

MDR TB = Multidrug-resistant TB

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 10. Primary Reason for Evaluation of Tuberculosis Cases, New York State (Exclusive of New York City), 2012**

Two-thirds of the multidrug-resistant (MDR TB) (isolates resistant to at least isoniazid and rifampin) cases underwent evaluation based on identification of TB symptoms in 2012. Abnormal chest radiograph was also cited as a reason for evaluation.

Of the 212 non-MDR TB cases, half (50.5%) were evaluated as a result of presenting with TB symptoms. Other common reasons for evaluation included an abnormal chest radiograph (N=53, 25.0%) and an incidental lab result (N=35, 16.5%).

## Additional Risk Factors Among Tuberculosis Cases by Gender

New York State (Exclusive of New York City), 2012

ADDITIONAL RISK FACTOR	Male		Female		Total	
	No.	(%)	No.	(%)	No.	(%)
None	75	(58.6)	55	(59.8)	130	(59.1)
Diabetes Mellitus	15	(11.7)	7	(7.6)	22	(10.0)
Immunosuppression (not HIV/AIDS)	8	(6.3)	7	(7.6)	15	(6.8)
Incomplete LTBI Therapy	5	(3.9)	8	(8.7)	13	(5.9)
Contact of an Infectious TB Patient*	3	(2.3)	5	(5.4)	8	(3.6)
End-Stage Renal Disease	2	(1.6)	1	(1.1)	3	(1.4)
TNF-alpha Antagonist Therapy	1	(0.8)	1	(1.1)	2	(0.9)
Post-organ Transplantation	0	(0.0)	1	(1.1)	1	(0.5)
Contact of an MDR TB Patient*	0	(0.0)	0	(0.0)	0	(0.0)
Missed Contact*	0	(0.0)	0	(0.0)	0	(0.0)
Other	17	(13.3)	7	(7.6)	24	(10.9)
Unknown	2	(1.6)	0	(0.0)	2	(0.9)

\*Within the past 2 years  
LTBI = Latent Tuberculosis Infection

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 11: Additional Risk Factors Among Tuberculosis Cases by Gender, New York State (Exclusive of New York City), 2012**

Aside from the commonly collected risk factors (i.e. HIV status, drug/alcohol usage, occupation, country of birth), 39.5 percent (N=85) of TB cases in New York State (exclusive of New York City) reported that they had at least one other known risk factor for TB disease in 2012. Overall, the most commonly reported factors were diabetes (N=22, 10.0%), having some form of immunosuppression (not HIV/AIDS) (N=15, 6.8%), incomplete LTBI therapy (N=13, 5.9%) and being a contact to an infectious TB patient (N=8, 3.6%).

For male TB cases, diabetes (N=15, 11.7%) was cited as the most common additional risk factor, whereas incomplete LTBI therapy (N=8, 8.7%) was seen as the most prevalent additional risk factor among females.

**Drug Susceptibility Test Results**  
**MDR TB**  
 New York State (Exclusive of New York City), 2007-2012

	2007	2008	2009	2010	2011	2012
<b>Culture Positive</b>	191	229	182	170	172	161
<b>Susceptibility Test Reported</b>	188	227	181	169	169	158
<b>Resistant to INH and RIF (MDR TB)*</b>	0 (0.0%)	1 (0.4%)	5 (2.8%)	3 (1.8%)	6 (3.6%)	3 (1.9%)

\*Among those with susceptibility tests reported.  
 INH = Isoniazid; RIF = Rifampin; MDR TB = Multidrug-resistant TB

Source: New York State Department of Health  
 Bureau of Tuberculosis Control

**Table 12: Drug Susceptibility Test Results, MDR TB, New York State (Exclusive of New York City), 2007-2012**

In New York State (exclusive of New York City), susceptibility results were reported for 98.1 percent (N=158/161) of culture-positive cases in 2012. There were three MDR TB cases identified, half as many cases as was seen in 2011.

**Drug Susceptibility Test Results  
Among Culture Confirmed Tuberculosis Cases  
General Population vs State Inmates  
New York State (Exclusive of New York City), 2010-2012**

	2010			2011			2012											
	General Population		Inmate Population	General Population		Inmate Population	General Population		Inmate Population	Total Population								
	No.	(%)	No. (%)	No.	(%)	No.	(%)	No.	(%)	No. (%)								
Susceptibility test reported	168		1	169	169	0	169	158	0	158								
Susceptible to all first-line drugs	135	(80.4)	1	(100.0)	136	(80.5)	136	(80.5)	132	(83.5)	0	(0.0)	132	(83.5)				
Resistant to INH and RIF (MDR TB)	3	(1.8)	0	(0.0)	3	(1.8)	6	(3.6)	0	(0.0)	6	(3.6)	3	(1.9)	0	(0.0)	3	(1.9)
INH resistant and RIF susceptible	13	(7.7)	0	(0.0)	13	(7.7)	12	(7.1)	0	(0.0)	12	(7.1)	11	(7.0)	0	(0.0)	11	(7.0)
RIF resistant and INH susceptible	4	(2.4)	0	(0.0)	4	(2.4)	1	(0.6)	0	(0.0)	1	(0.6)	0	(0.0)	0	(0.0)	0	(0.0)
Resistant to first-line drugs other than INH and RIF	13	(7.7)	0	(0.0)	13	(7.7)	14	(8.3)	0	(0.0)	14	(8.3)	11	(7.0)	0	(0.0)	11	(7.0)

INH = Isoniazid; RIF = Rifampin; MDR TB = Multidrug-resistant TB

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 13: Drug Susceptibility Test Results Among Culture Confirmed Tuberculosis Cases, General Population vs State Inmates, New York State (Exclusive of New York City), 2010-2012**

In 2012, drug susceptibility tests were performed on 98.1 percent (N=158/161) of culture-positive TB cases in New York State (exclusive of New York City). MDR TB was identified in three cases. An additional eleven culture-positive cases were resistant to isoniazid (INH). There were no inmate TB cases in 2012.

**Drug Susceptibility Test Results  
Among Culture Confirmed Tuberculosis Cases  
U.S.-Born vs Foreign-Born\***

New York State (Exclusive of New York City), 2010-2012

	2010			2011			2012		
	U.S.-Born Population		Total Population	U.S.-Born Population		Total Population	U.S.-Born Population		Total Population
	No.	(%)		No.	(%)		No.	(%)	
Susceptibility test reported	45		169	50		169	43		158
Susceptible to all first-line drugs	32	(71.1)	136	43	(86.0)	136	36	(83.7)	132
Resistant to INH and RIF (MDR TB)	1	(2.2)	3	0	(0.0)	6	2	(4.7)	3
INH resistant and RIF susceptible	3	(6.7)	13	5	(10.0)	12	2	(4.7)	11
RIF resistant and INH susceptible	3	(6.7)	4	0	(0.0)	1	0	(0.0)	0
Resistant to first-line drugs other than INH and RIF	6	(13.3)	13	2	(4.0)	14	3	(7.0)	11

\*For whom country of origin information has been obtained.  
INH = Isoniazid; RIF = Rifampin; MDR TB = Multidrug-resistant TB

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 14: Drug Susceptibility Test Results Among Culture Confirmed Tuberculosis Cases, U.S.-Born vs. Foreign-Born, New York State (Exclusive of New York City), 2010-2012**

In 2012, two-thirds (N=2/3, 66.7%) of the MDR TB cases in New York State (exclusive of New York City) were U.S.-born. Over 80 percent of the patients resistant to INH, were foreign-born.

## Drug Susceptibility Test Results MDR TB

New York City, 2007-2012

	2007	2008	2009	2010	2011	2012
<b>Culture Positive</b>	709	688	539	512	501	494
<b>Susceptibility Test Reported</b>	702	680	534	505	490	486
<b>Resistant to INH and RIF (MDR TB)*</b>	9 (1.0%)	11 (2.0%)	9 (1.7%)	11 (2.2%)	16 (3.3%)	16 (3.3%)

\*Among those with susceptibility tests reported.  
INH = Isoniazid; RIF = Rifampin; MDR TB = Multidrug-resistant TB

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 15: Drug Susceptibility Test Results, MDR TB, New York City, 2007-2012**

In New York City in 2012, susceptibility results were reported for 98.4 percent (N=486/494) of culture-positive TB cases. The number of MDR TB cases remained the same over the last year.

### Tuberculosis Genotyping Summary by Year

New York State (Exclusive of New York City), 2010-2012

	2010		2011		2012	
	N	(%)	N	(%)	N	(%)
<b>Initial Positive Cultures</b>	172		177		163	
<b>False Positives</b>	2	(1.2)	5	(2.8)	2	(1.2)
Control Strain	0	(0.0)	0	(0.0)	0	(0.0)
Contamination	1	(0.6)	2	(1.1)	1	(0.6)
M. bovis BCG	1	(0.6)	3	(1.7)	1	(0.6)
<b>True Positives</b>	170		172		161	
<b>Isolates Available</b>	170		172		155	
Complete Genotype*	166	(97.6)	155	(90.1)	142	(91.6)
Partial Genotype	167	(98.2)	167	(97.1)	154	(99.4)
No Result	3	(1.8)	5	(2.9)	1	(0.6)

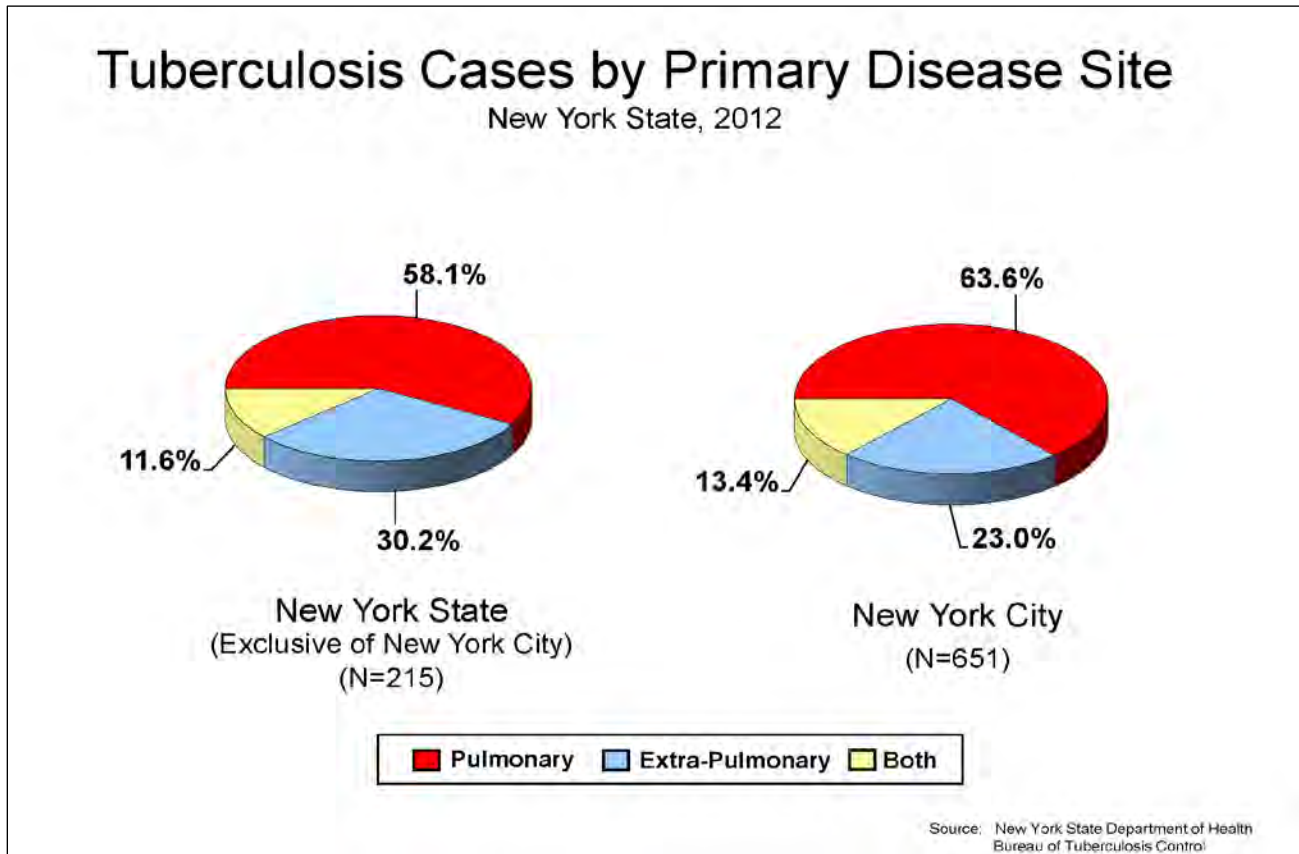
\*Definition of complete genotyping was revised in 2009 to agree with the CDC-sponsored National Tuberculosis Genotyping program. A complete genotype is defined as having a spoligotype and MIRU result.

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 16: Tuberculosis Genotyping Summary by Year, New York State (Exclusive of New York City), 2010-2012**

New York State requires that all initial positive cultures be submitted for genotyping. Beginning in 2004, real time spoligotyping and subsequent restriction fragment length polymorphism (RFLP) testing were performed at the Department's Wadsworth Center for Laboratories and Research. In addition, the CDC-sponsored National Tuberculosis Genotyping regional lab in Michigan performed mycobacterial interspersed repetitive unit (MIRU) and spoligotyping. In 2012, 96.3 percent (N=155/161) of isolates in New York State (exclusive of New York City) were available for genotyping. A spoligotype and MIRU result were available for 91.6 percent of these isolates (N=142/155). Since 2009, due to diminishing resources, RFLP has no longer been performed on all specimens.





**Figure 18: Tuberculosis Cases by Primary Disease Site, New York State, 2012**

Pulmonary TB was the primary site of disease in 62.2 percent (N=539) of cases reported in New York State in 2012. Compared to 2011 (N=702), this was 23.2 percent fewer pulmonary TB cases.

Seventy percent (N=150) of TB cases in New York State (exclusive of New York City) were reported to have pulmonary TB in 2012, a slight decrease from the 75.6 percent in 2011. In New York City, 501 pulmonary TB cases were reported, a decrease of 6.4 percent from the 535 identified in 2011.

Of the TB cases in New York State (exclusive of New York City) with extra-pulmonary TB disease (30.2%, N=65), the most common sites of disease were lymphatic (43.1%, N=28) and pleural (18.5%, N=12). The most frequently reported extra-pulmonary sites in New York City were lymphatic (50.7%, N=76), pleural (14.0%, N=21), and bone (10.7%, N=16).

### Treatment Status of Tuberculosis Cases Reported in 2011\*

New York State (Exclusive of New York City)

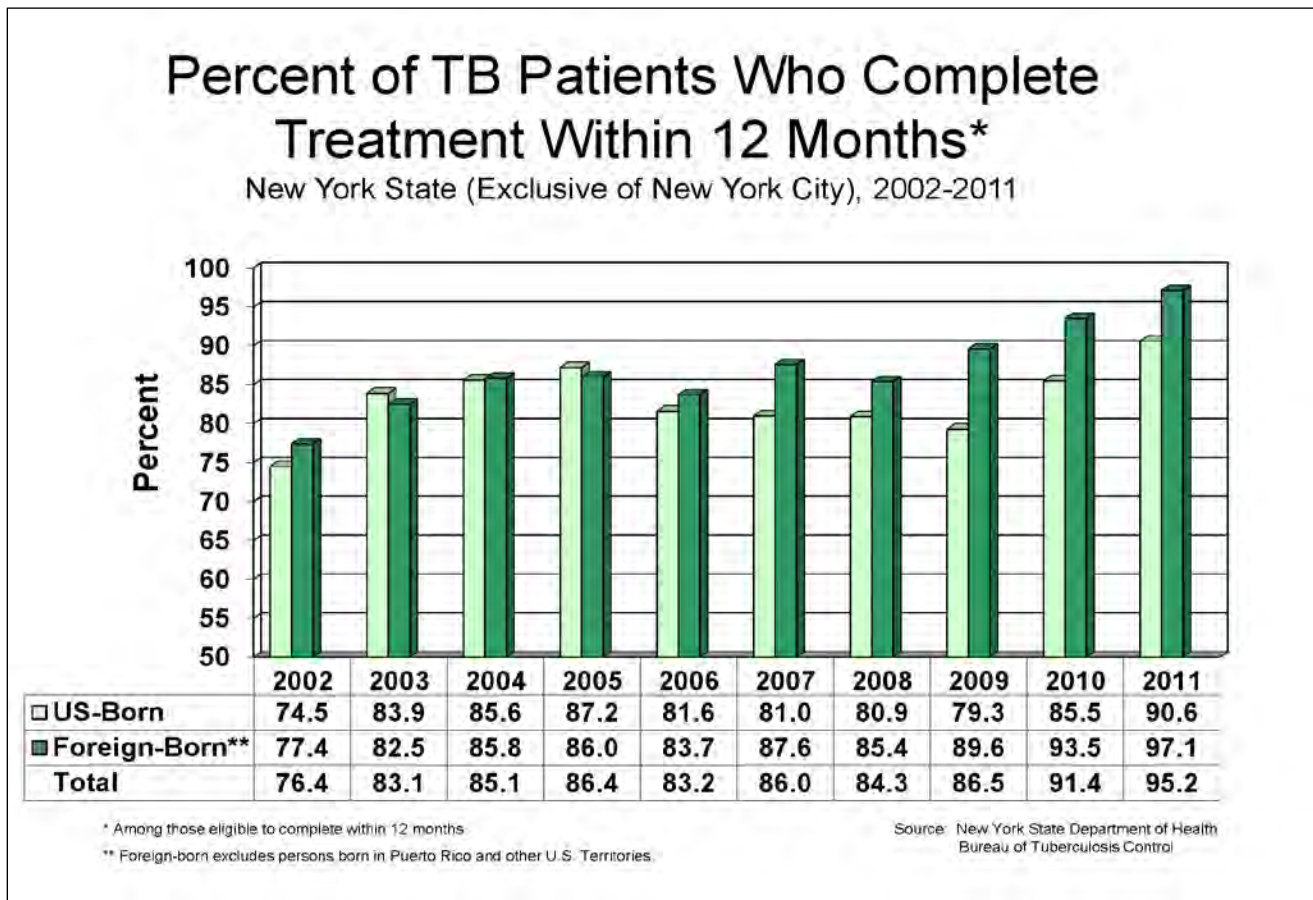
TREATMENT STATUS	Non-MDR		MDR	
	No.	(%)	No.	(%)
Completed	193	(91.0)	3	(50.0)
Prolonged Therapy	0	(0.0)	1	(16.7)
Died	14	(6.6)	1	(16.7)
Uncooperative/Refused	2	(0.9)	0	(0.0)
Lost	0	(0.0)	0	(0.0)
Adverse Treatment Event	1	(0.5)	0	(0.0)
Other or Unknown	2	(0.9)	1	(16.7)
<b>TOTAL</b>	<b>212</b>	<b>(100.0)</b>	<b>6</b>	<b>(100.0)</b>

\*Excludes patients found not to have TB, those who were reported at death and those who never started treatment  
MDR TB = Multidrug-resistant TB

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Table 17: Treatment Status of Tuberculosis Cases Reported in 2011, New York State (Exclusive of New York City)**

Of the 212 non-MDR TB cases in New York State (exclusive of New York City) who were alive at diagnosis in 2011 (the most recent year for which complete information is available), 91.0 percent completed a full course of therapy with a completion index of 99.0 (completion index = number completed / [number alive at diagnosis - number died on treatment - number moved out of jurisdiction]\*100).



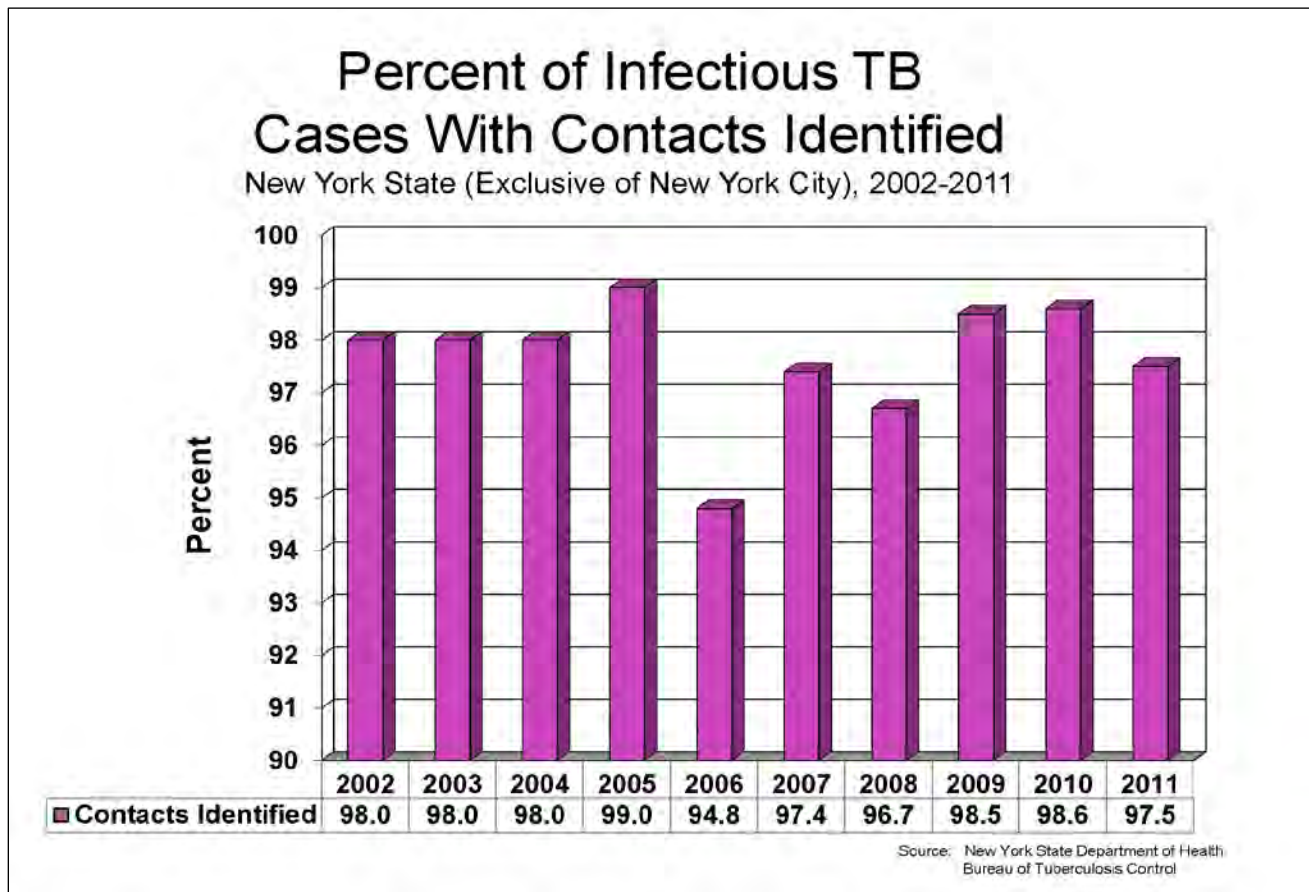
**Figure 19: Percent of Tuberculosis Patients Who Complete Treatment Within 12 Months, New York State (Exclusive of New York City), 2002-2011**

For 2011 (the most recent year for which complete information is available), 95.2 percent (N=180/189) of patients in New York State (exclusive of New York City) eligible\*\*\* to complete treatment within 12 months, did so, an increase from 91.4% in 2010. An additional 3.2 percent (N=6/189) of patients completed treatment in more than 12 months, for an overall completion rate of 98.4 percent.

A larger percentage of foreign-born patients completed therapy within 12 months than U.S.-born in 2011 (90.6% and 97.1%, respectively).

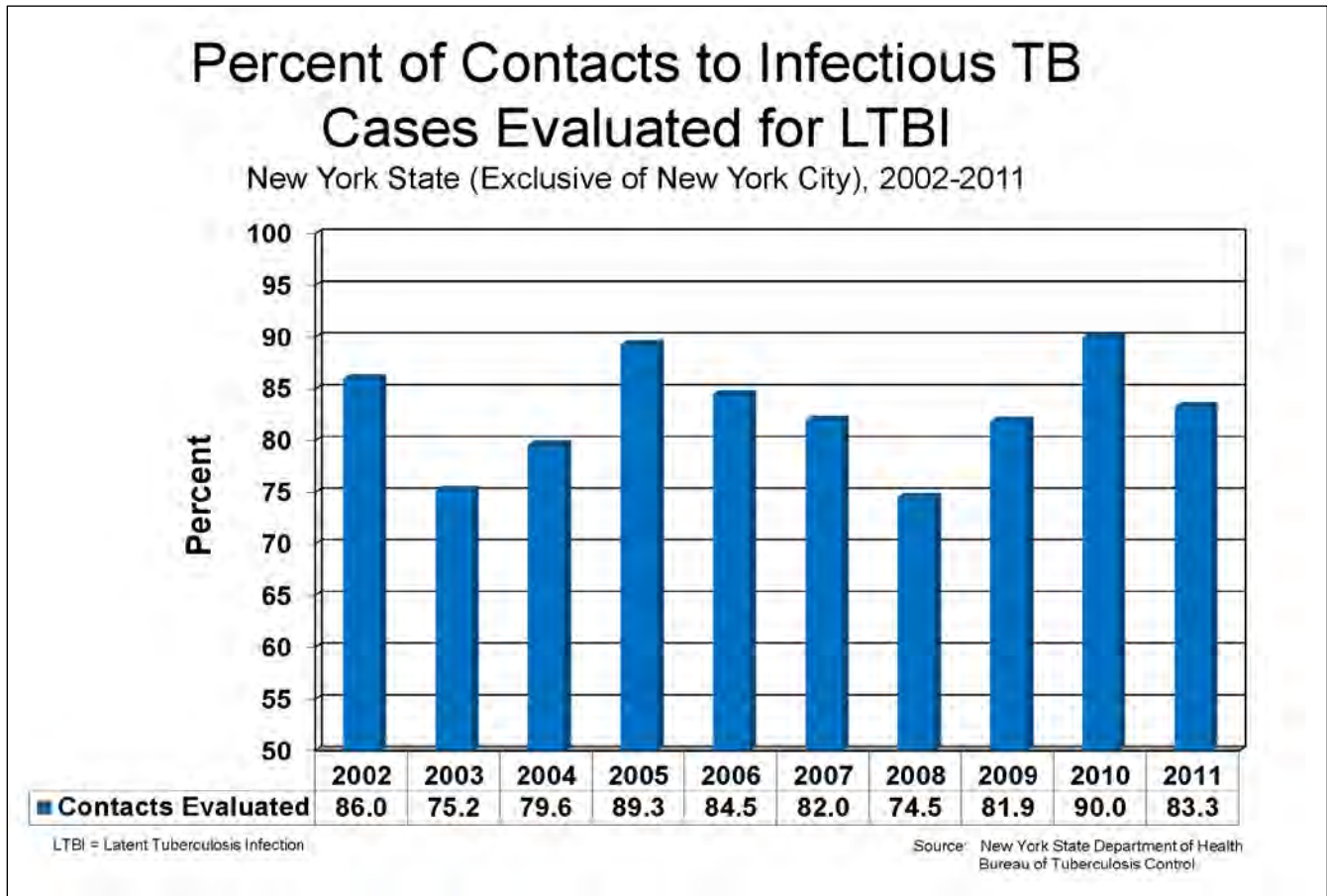
Feedback from New York State county health departments has revealed that most patients not completing therapy within 12 months suffer from significant co-morbidities or adverse drug reactions which result in lengthened treatment regimens.

\*\*\*Patients with Rifampin resistance, those with meningeal TB and children under 15 who have disseminated TB (miliary TB or evidence of miliary TB on chest radiograph, or a positive blood culture) are excluded along with those who were never started on treatment, were dead at diagnosis or who died while on treatment. Effective January 2009, the CDC revised the definition of who is eligible to complete treatment to also exclude those patients who moved out of the country while on treatment.



**Figure 20: Percent of Infectious Tuberculosis Cases with Contacts Identified, New York State (Exclusive of New York City), 2002-2011**

In 2011 (the most recent year for which complete information is available), 97.5 percent (N=78/80) of infectious (sputum smear positive) TB cases in New York State (exclusive of New York City) had contacts identified. This surpasses the state objective of 95.5 percent.

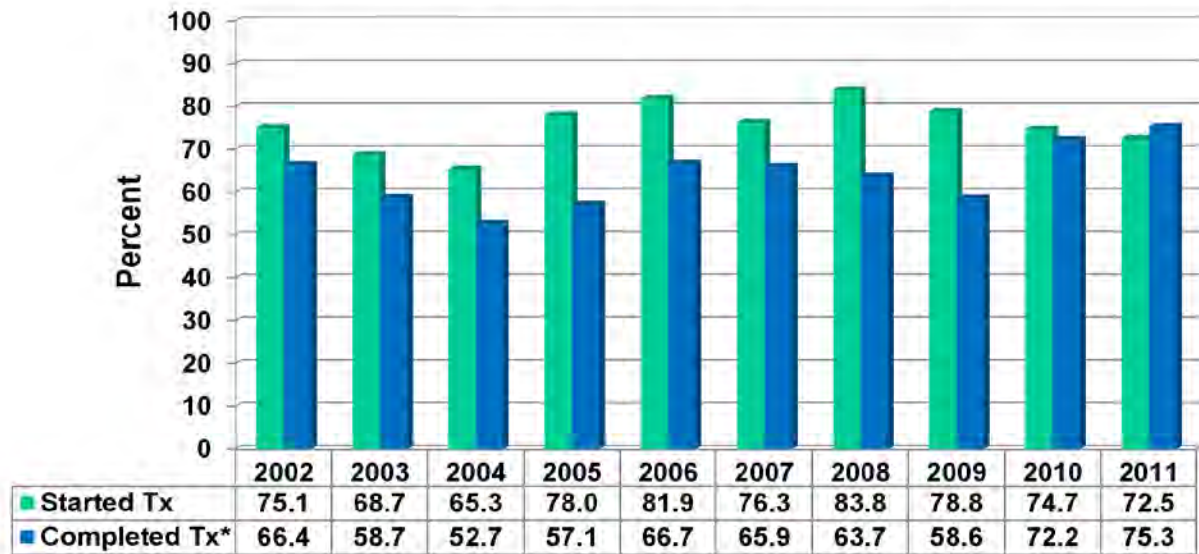


**Figure 21: Percent of Contacts to Infectious Tuberculosis Cases Evaluated for LTBI, New York State (Exclusive of New York City), 2002-2011**

Eighty-three percent (N=3,049) of contacts to infectious (sputum smear positive) TB cases in New York State (exclusive of New York City) were evaluated for latent tuberculosis infection (LTBI) in 2011 (the most recent year for which complete information is available). This is a considerable decrease from the 90.0 percent (N=2,027) evaluated in 2010 but still meets our state objective of 83.0 percent.

## Percent of Infected Contacts to Infectious TB Cases Placed on Treatment and Completed

New York State (Exclusive of New York City), 2002-2011

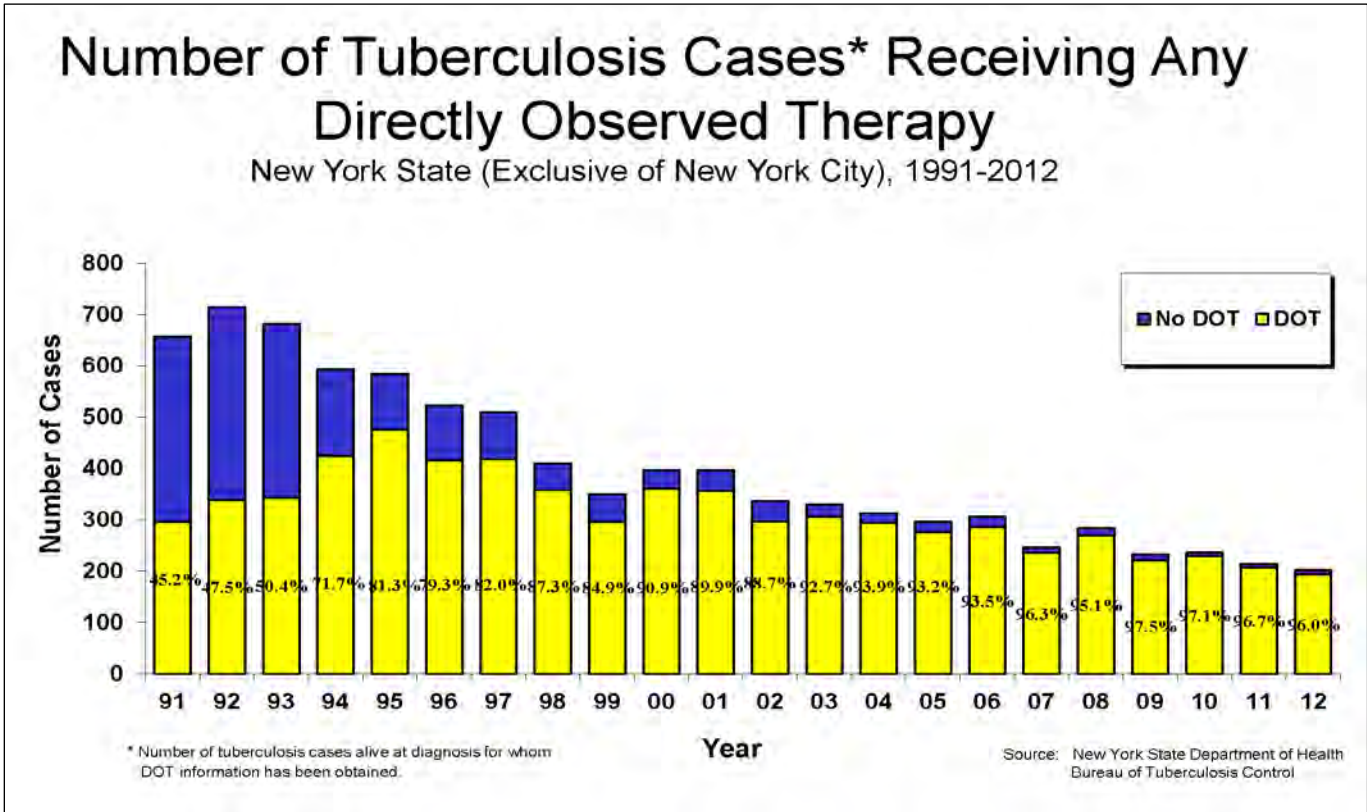


\*Among those who started treatment.

Source: New York State Department of Health  
Bureau of Tuberculosis Control

**Figure 22: Percent of Infected Contacts to Infectious Tuberculosis Cases Placed on Treatment and Completed, New York State (Exclusive of New York City), 2002-2011**

Seventy-three percent of infected contacts to infectious (sputum smear positive) TB cases in New York State (exclusive of New York City) were placed on treatment in 2011 (the most recent year for which complete information is available), a decrease from 74.7 percent in 2010. Seventy-five percent of those starting treatment actually completed the prescribed regimen, which is the highest completion rate in the last 10 years.



**Figure 23: Number and Percentage of Tuberculosis Cases Receiving Any Directly Observed Therapy, New York State (Exclusive of New York City), 1991-2012**

In New York State (exclusive of New York City) the proportion of TB cases receiving Directly Observed Therapy (DOT) has been increasing since the early 1990s when it was first actively promoted by the New York State Department of Health, local health units, and others. In 1991, 297 cases or 45.2 percent of confirmed TB cases on TB medications received at least part of their therapy as DOT. The proportion of all cases receiving a portion of their treatment as DOT has more than doubled over the intervening years to 96.0 percent in 2012.

Additional New York City tuberculosis data may be obtained by contacting the New York City Department of Health Surveillance Office at (347) 396 – 7400 or via the Internet at:  
<http://www.nyc.gov/html/doh/html/data/tb-reports.shtml>

For questions relating to tuberculosis in New York State or a PowerPoint version of the figures in this report, contact the Bureau of TB Control, New York State Department of Health, at:  
[tbcontrol@health.state.ny.us](mailto:tbcontrol@health.state.ny.us)

**TECHNICAL NOTE:**

All population-based rates were calculated using 2010 census figures.