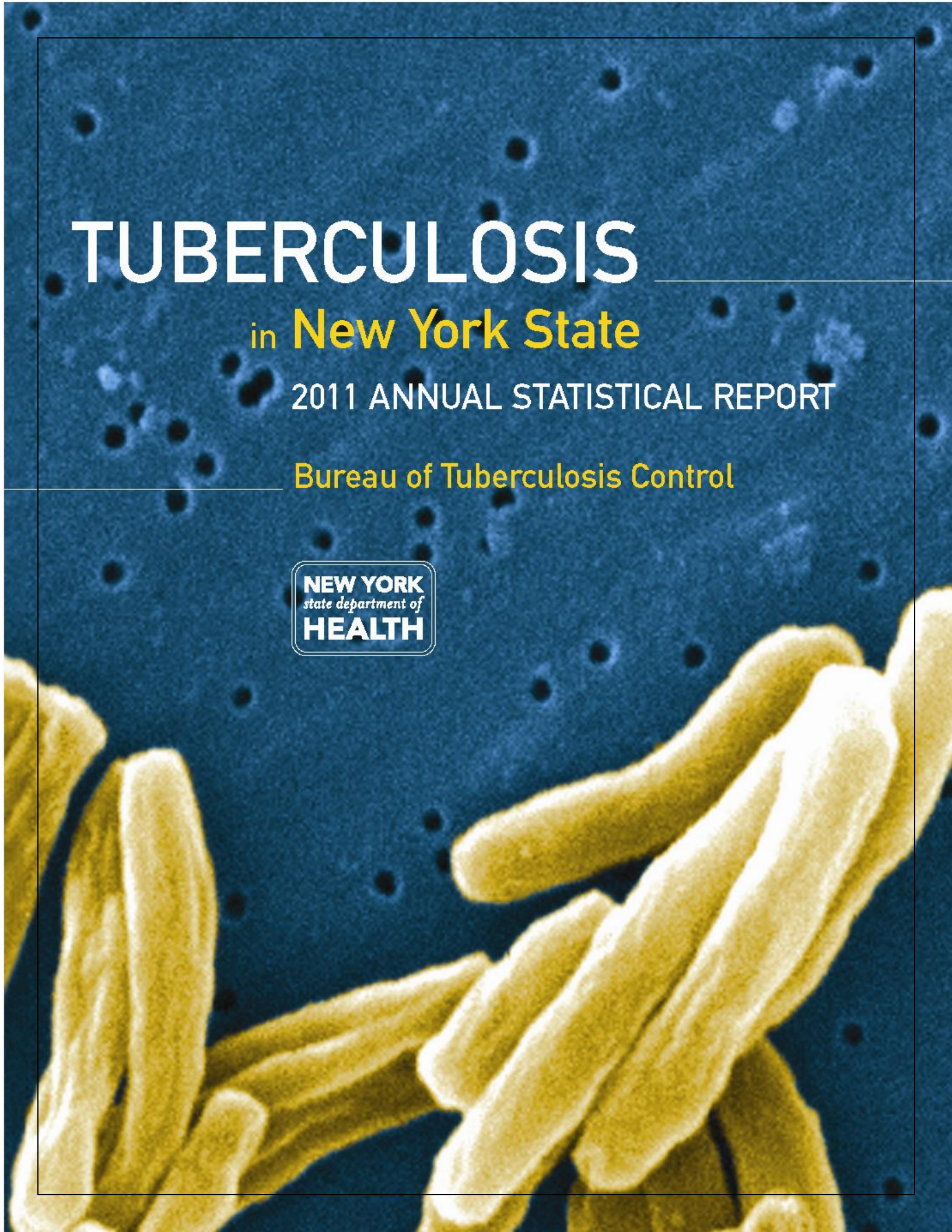
TUBERCULOSIS

in New York State

2011 ANNUAL STATISTICAL REPORT

Bureau of Tuberculosis Control

NEW YORK
state department of
HEALTH



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2011 Annual Report

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SUMMARY

- Between 2010 and 2011, tuberculosis (TB) morbidity decreased in New York State. The 2011 total of 910 cases (689 cases in New York City, 221 cases in the remainder of New York State) represents a 4.6 percent decrease from the 954 cases reported in 2010. The decline in morbidity was less in New York State than in the nation (4.6% and 5.9%, respectively). Since 1992, the recent peak epidemic year with 4,574 cases, New York State has experienced a 80.1 percent decrease compared to a national decline of 60.6 percent.

- In New York State (exclusive of New York City), the number of TB cases decreased 9.1 percent from 243 cases in 2010 to 221 cases in 2011. The number of TB cases in New York City decreased by 3.1 percent from 711 cases in 2010 to 689 cases in 2011. In 2011, the nation as a whole reported 10,521 TB cases, down from the 11,181 cases reported in 2010.

- New York State was sixth nationally with an incidence rate of 4.7 per 100,000 population in 2011. This rate is influenced by New York City, which had a TB case rate of 8.4/100,000. In contrast, New York State (exclusive of New York City) reported an incidence rate of 2.0/100,000. The national average for 2011 was 3.4/100,000.

- Three counties - Nassau, Suffolk, and Westchester - reported over half of the TB cases in New York State (exclusive of New York City) in 2011.

- 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 2011, the number of multidrug-resistant (MDR TB) cases in New York City increased 27.3%, from 11 cases in 2010 to 14 cases in 2011. In New York State (exclusive of New York City), the number of MDR TB cases doubled from three cases in 2010 to six cases in 2011.

- Statewide, including New York City, the proportion of cases contributed by foreign-born individuals decreased slightly from 78.2 percent in 2010 to 77.7 percent (707 cases) in 2011, with people born in China contributing the greatest number of foreign-born TB cases (111). In New York State (exclusive of New York City), people born in India contributed the greatest number of TB cases (15).

- Since 1991, the number of TB cases among the New York State Department of Corrections and Community Supervision (DOCCS) offender population has been continually declining. In 2011, no new cases were reported.

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Tuberculosis in New York State 2011

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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 2011, 910 new cases of tuberculosis were reported among New York State residents (Table 1, page 8). New York City reported 689 new TB cases while the rest of the state had 221.

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

1950-2011

Year	New York State (Exclusive of New York City) No.	New York State (Exclusive of New York City) Rate per 100,000	New York City No.	New York City Rate per 100,000	New York State (Total) No.	New York State (Total) Rate per 100,000
1950	4,776	68.8	7,717	97.8	12,493	84.2
1955	3,502	43.6	6,214	79.2	9,716	61.2
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

*Figures after 1974 include reactivated cases

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

Table 1: ***Tuberculosis Cases, New York State, 1950-2011***

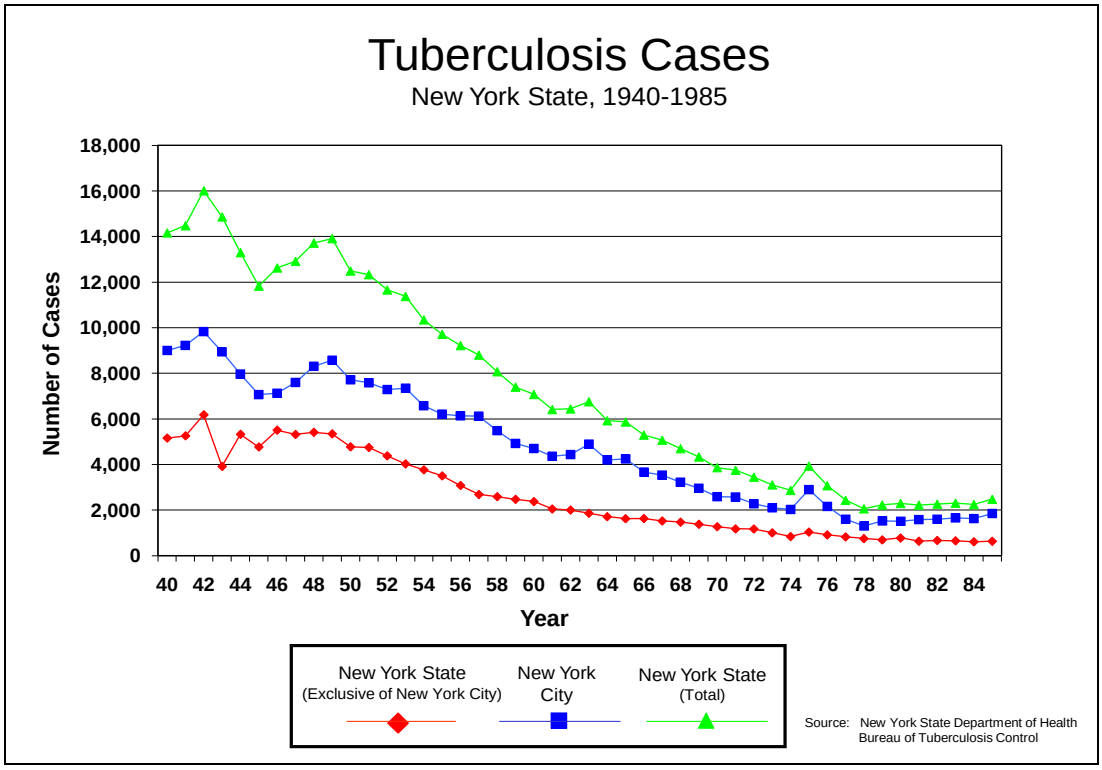

Figure 1a: ***Tuberculosis Cases, New York State, 1940-1985***

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.

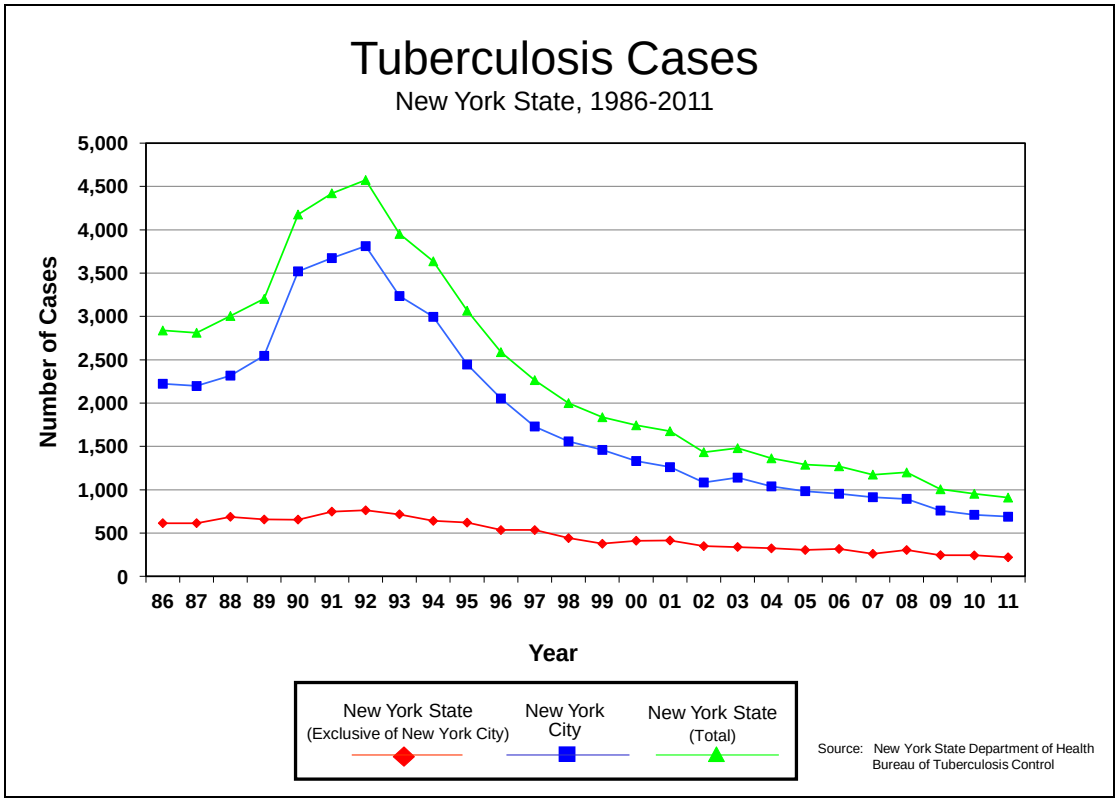

Figure 1b: ***Tuberculosis Cases, New York State, 1986-2011***

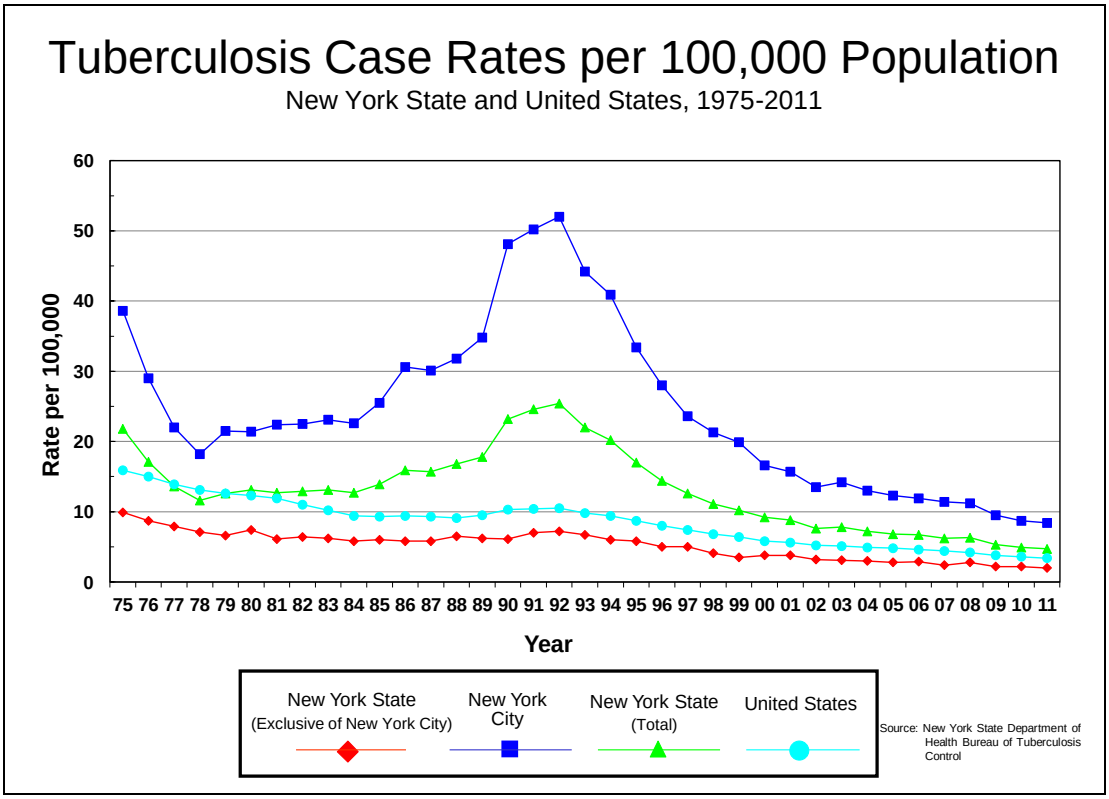

Figure 2: ***Tuberculosis Case Rates per 100,000 Population, New York State, 1975-2011***

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 2011 TB case rate was 4.7 per 100,000 population (New York City, 8.4; New York State exclusive of New York City, 2.0). The national figure for 2011 was 3.4 per 100,000.

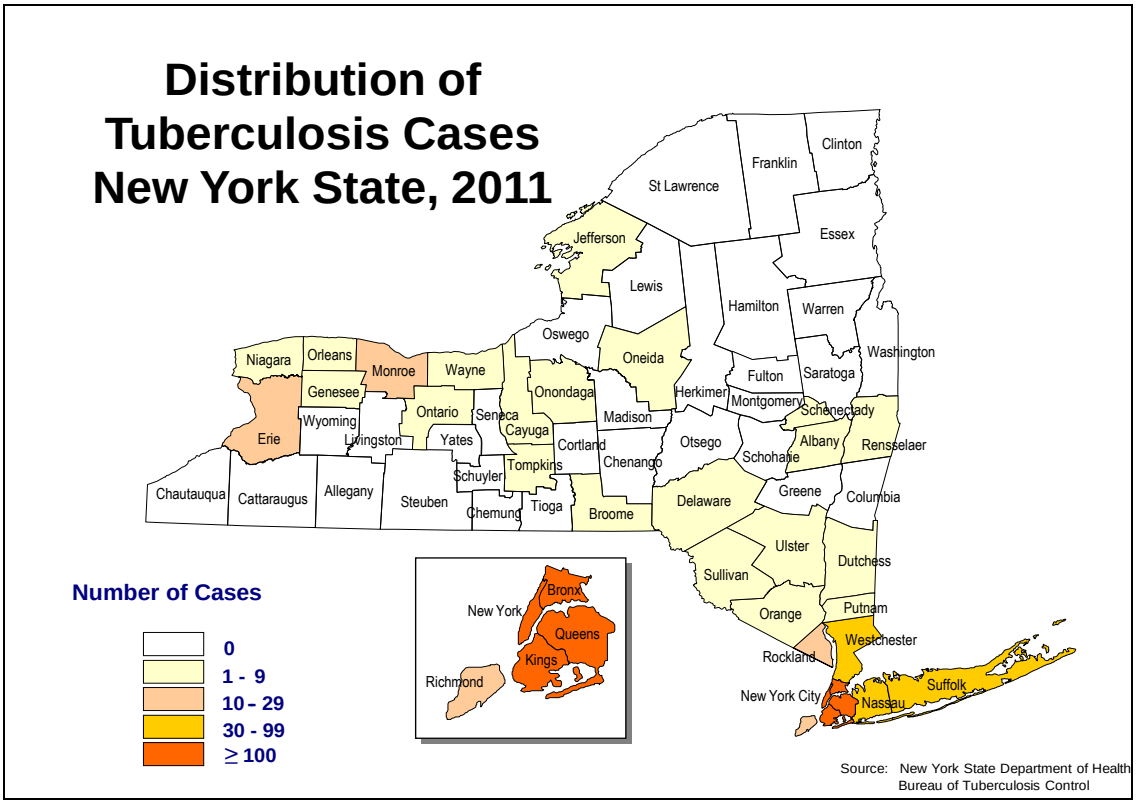

Figure 3: ***Distribution of Tuberculosis Cases, New York State, 2011***

New York City represents 75.7 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 over half of the TB cases reported in 2011. Thirty-nine counties either had no cases or only one reported case of TB in 2011. 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, 2006-2011

	2006		2007		2008		2009		2010		2011	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Albany	8	2.7	7	2.4	4	1.4	3	1.0	10	3.3	8	2.6
Clinton	0	0.0	1	1.3	1	1.3	1	1.3	0	0.0	0	0.0
Columbia	0	0.0	0	0.0	0	0.0	1	1.6	1	1.6	0	0.0
Delaware	0	0.0	0	0.0	1	2.1	0	0.0	0	0.0	1	2.1
Essex	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	0	0.0	1	2.0	2	3.9	1	2.0	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	0	0.0	1	2.1	1	2.1	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	1	2.0	0	0.0	0	0.0	1	2.0	1	2.0	0	0.0
Otsego	1	1.6	0	0.0	1	1.6	0	0.0	0	0.0	0	0.0
Rensselaer	1	0.7	6	3.9	0	0.0	0	0.0	3	1.9	2	1.3
Saratoga	2	1.0	1	0.5	0	0.0	3	1.5	2	0.9	0	0.0
Schenectady	6	4.1	2	1.4	0	0.0	3	2.0	5	3.2	3	1.9
Schoharie	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Warren	1	1.6	0	0.0	1	1.6	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
Albany Regional Total	**20**	**1.4**	**18**	**1.2**	**11**	**0.8**	**14**	**1.0**	**22**	**1.5**	**14**	**0.9**
Allegany	1	2.0	0	0.0	1	2.0	0	0.0	1	2.0	0	0.0
Cattaraugus	1	1.2	0	0.0	0	0.0	1	1.2	0	0.0	0	0.0
Chautauqua	2	1.4	0	0.0	0	0.0	1	0.7	1	0.7	0	0.0
Erie	11	1.2	9	0.9	16	1.7	14	1.5	11	1.2	14	1.5
Genesee	2	3.3	2	3.3	1	1.7	2	3.3	1	1.7	2	3.3
Niagara	4	1.8	1	0.5	2	0.9	2	0.9	0	0.0	1	0.5
Orleans	0	0.0	0	0.0	0	0.0	0	0.0	1	2.3	1	2.3
Wyoming	0	0.0	0	0.0	1	2.3	0	0.0	1	2.4	0	0.0
Buffalo Regional Total	**21**	**1.3**	**12**	**0.8**	**21**	**1.3**	**20**	**1.3**	**16**	**1.0**	**18**	**1.2**
Chemung	1	1.1	2	2.2	2	2.2	1	1.1	0	0.0	0	0.0
Livingston	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Monroe	24	3.3	21	2.9	16	2.2	18	2.4	16	2.1	19	2.6
Ontario	1	1.0	1	1.0	1	1.0	0	0.0	1	0.9	3	2.8
Schuyler	0	0.0	0	0.0	0	0.0	1	5.2	0	0.0	0	0.0
Seneca	1	3.0	0	0.0	0	0.0	1	3.0	0	0.0	0	0.0
Steuben	1	1.0	1	1.0	1	1.0	0	0.0	3	3.0	0	0.0
Wayne	0	0.0	2	2.1	0	0.0	4	4.3	1	1.1	3	3.2
Yates	0	0.0	0	0.0	0	0.0	0	0.0	1	3.9	0	0.0
Rochester Regional Total	**28**	**2.2**	**27**	**2.1**	**20**	**1.6**	**25**	**2.0**	**22**	**1.7**	**25**	**2.0**
Broome	3	1.5	4	2.0	5	2.5	1	0.5	1	0.5	1	0.5
Cayuga	0	0.0	0	0.0	1	1.2	1	1.2	0	0.0	1	1.2
Chenango	1	1.9	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	0	0.0
Herkimer	0	0.0	1	1.6	0	0.0	0	0.0	0	0.0	0	0.0
Jefferson	1	0.9	0	0.0	1	0.9	1	0.9	0	0.0	1	0.9
Lewis	0	0.0	1	3.7	0	0.0	0	0.0	0	0.0	0	0.0
Madison	0	0.0	1	1.4	0	0.0	0	0.0	0	0.0	0	0.0
Oneida	5	2.1	6	2.5	7	3.0	5	2.1	7	3.0	8	3.4
Onondaga	13	2.8	14	3.1	22	4.8	19	4.1	13	2.8	8	1.7
Oswego	1	0.8	2	1.6	0	0.0	0	0.0	0	0.0	0	0.0
St. Lawrence	1	0.9	0	0.0	2	1.8	0	0.0	0	0.0	0	0.0
Tioga	0	0.0	2	3.9	1	1.9	0	0.0	0	0.0	0	0.0
Tompkins	1	1.0	2	2.1	2	2.1	5	5.2	0	0.0	3	3.0
Syracuse Regional Total	**26**	**1.5**	**33**	**1.9**	**41**	**2.4**	**32**	**1.8**	**21**	**1.2**	**22**	**1.3**
Dutchess	9	3.2	3	1.1	7	2.5	4	1.4	9	3.0	3	1.0
Nassau	51	3.8	48	3.6	45	3.4	38	2.8	48	3.6	33	2.5
Orange	4	1.2	7	2.1	8	2.3	1	0.3	5	1.3	9	2.4
Putnam	3	3.1	2	2.1	0	0.0	1	1.0	0	0.0	4	4.0
Rockland	26	9.1	18	6.3	24	8.4	17	5.9	21	6.7	10	3.2
Suffolk	55	3.9	44	3.1	63	4.4	51	3.6	40	2.7	43	2.9
Sullivan	0	0.0	0	0.0	0	0.0	1	1.4	1	1.3	1	1.3
Ulster	3	1.7	3	1.7	3	1.7	2	1.1	1	0.5	1	0.5
Westchester	71	7.7	46	5.0	62	6.7	40	4.3	37	3.9	38	4.0
New Rochelle Regional Total	**222**	**4.5**	**171**	**3.5**	**212**	**4.3**	**155**	**3.1**	**162**	**3.2**	**142**	**2.8**
New York State Total (Exclusive of New York City)	**317**	**2.9**	**261**	**2.4**	**305**	**2.8**	**246**	**2.2**	**243**	**2.2**	**221**	**2.0**
Bronx	165	12.4	158	11.9	149	11.2	137	10.4	116	8.4	102	7.4
Kings	291	11.8	283	11.5	264	10.7	208	8.4	233	9.3	214	8.5
New York	164	10.7	183	11.9	159	10.3	121	7.9	90	5.7	109	6.9
Queens	305	13.7	267	12.0	300	13.5	275	12.3	259	11.6	250	11.2
Richmond	28	6.3	23	5.2	23	5.2	18	4.1	13	2.8	14	3.0
New York City Total	**953**	**11.9**	**914**	**11.4**	**895**	**11.2**	**760**	**9.5**	**711**	**8.7**	**689**	**8.4**
State Total	**1,270**	**6.7**	**1,175**	**6.2**	**1,200**	**6.3**	**1,006**	**5.3**	**954**	**4.9**	**910**	**4.7**

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, 2006-2011***

Tuberculosis Cases and Rates per 100,000 Population By Age and Gender

New York State, 2011

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	221	135	86	2.0	2.5	1.5	689	396	293	8.4	10.2	6.8	910	531	379	4.7	5.7	3.8
Under 5	11	6	5	1.7	1.8	1.6	7	4	3	1.4	1.5	1.2	18	10	8	1.6	1.7	1.4
5-9	0	0	0	0.0	0.0	0.0	2	0	2	0.4	0.0	0.9	2	0	2	0.2	0.0	0.4
10-14	4	2	2	0.5	0.5	0.6	5	2	3	1.1	0.8	1.3	9	4	5	0.7	0.6	0.8
15-19	9	5	4	1.1	1.2	1.0	24	11	13	4.5	4.0	4.9	33	16	17	2.4	2.3	2.5
20-24	13	10	3	1.7	2.5	0.8	56	38	18	8.7	12.1	5.5	69	48	21	4.9	6.7	3.0
25-34	48	27	21	3.8	4.2	3.4	142	64	78	10.2	9.6	10.8	190	91	99	7.1	6.9	7.3
35-44	35	19	16	2.4	2.7	2.2	120	65	55	10.4	11.6	9.3	155	84	71	5.9	6.6	5.3
45-54	29	21	8	1.6	2.4	0.9	111	75	36	10.0	14.3	6.2	140	96	44	4.9	6.9	3.0
55-64	28	18	10	2.0	2.6	1.4	88	59	29	9.9	14.6	6.0	116	77	39	5.0	7.0	3.2
65+	44	27	17	2.7	3.9	1.8	134	78	56	13.5	19.8	9.4	178	105	73	6.8	9.7	4.8

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, 2011***

Eighteen children under the age of five were diagnosed with active TB in 2011 in New York State, an increase of 63.6 percent from 2010 (N=11). New York City's number of cases in this age group was similar to that identified in 2010 (N=6 in 2010, N=7 in 2011), but for the rest of the state, the number of cases in this age group substantially increased from five to 11.

The highest morbidity rate in New York City occurred in the over 65 year age group (13.5 per 100,000), whereas the highest rate in New York State (exclusive of New York City) occurred among those in the 25-34 year age group (3.8 per 100,000). Statewide, the highest morbidity rates were found in the 25-34 and over 65 year age groups (7.1 and 6.8 per 100,000, respectively).

Statewide, the tuberculosis incidence rate among males was 1.5 times the female rate (5.7 compared to 3.8 per 100,000). The largest disparity by gender occurred in the 45-54 year age group, where the male rate was 2.3 times the female rate (6.9 compared to 3.0 per 100,000).

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

New York State, 2011

	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)
GENDER						
Male	135	2.5	396	10.2	531	5.7
Female	86	1.5	293	6.8	379	3.8
AGE						
Under 5 years	11	1.7	7	1.4	18	1.6
5-9	0	0.0	2	0.4	2	0.2
10-14	4	0.5	5	1.1	9	0.7
15-19	9	1.1	24	4.5	33	2.4
20-24	13	1.7	56	8.7	69	4.9
25-34	48	3.8	142	10.2	190	7.1
35-44	35	2.4	120	10.4	155	5.9
45-54	29	1.6	111	10.0	140	4.9
55-64	28	2.0	88	9.9	116	5.0
65+	44	2.7	134	13.5	178	6.8
RACE/ETHNICITY						
White, non-Hispanic	40	0.5	72	2.6	112	1.0
Black, non-Hispanic	43	4.7	151	8.1	194	7.0
Hispanic	64	5.9	190	8.1	254	7.4
Asian	71	18.8	261	25.4	332	23.6
Native American	0	0.0	0	0.0	0	0.0
Pacific Islander	0	0.0	0	0.0	0	0.0
Multiple Races	2	1.1	7	4.7	9	2.8
Other	0	0.0	8	13.8	8	9.8
Unknown	1	----	0	----	1	----
TOTAL	221	2.0	689	8.4	910	4.7

*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, 2011***

Males accounted for approximately 58 percent of TB cases reported statewide in 2011. The case rates for males and females in New York City are over 4 times that of males and females in the rest of the state (10.2 compared to 2.5 per 100,000 for males; 6.8 compared to 1.5 per 100,000 for females).

In 2011, the highest case rate statewide was found among Asians (23.6 per 100,000). White, non-Hispanics had the lowest case numbers and case rates across the whole state (N=112 and 1.0 per 100,000, respectively).

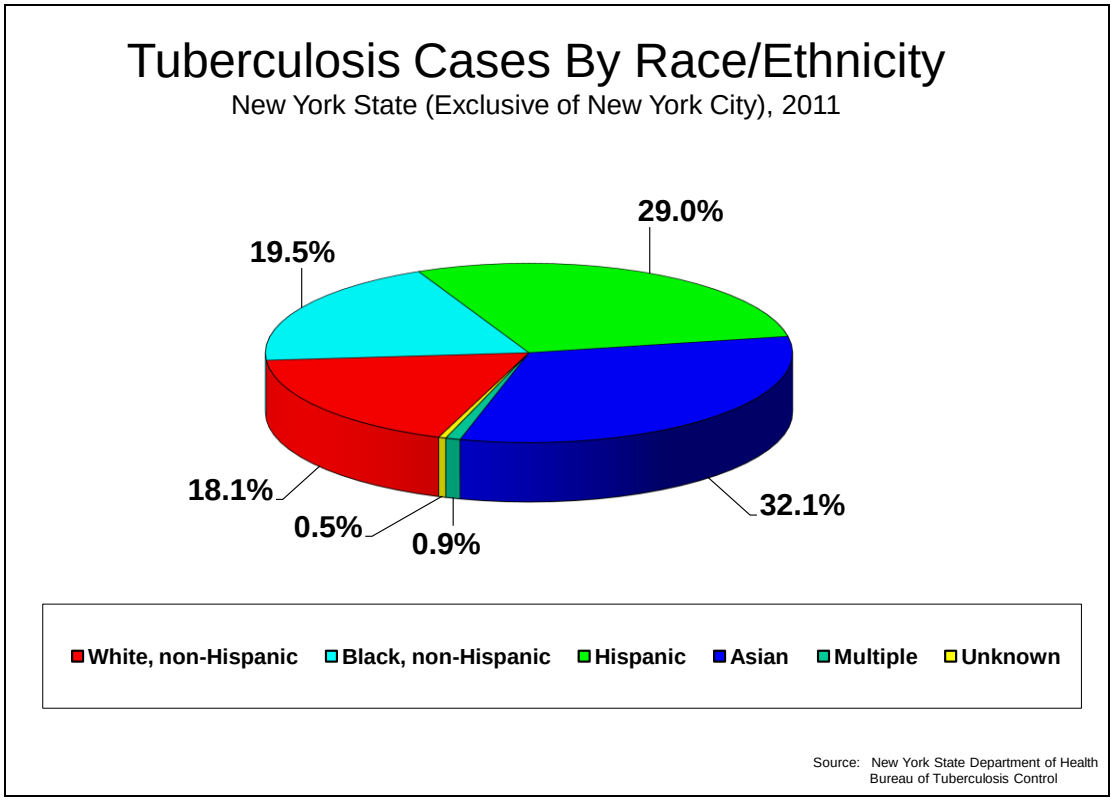

Figure 4: ***Tuberculosis Cases By Race/Ethnicity, New York State (Exclusive of New York City), 2011***

In New York State (exclusive of New York City), Asians represented the largest (32.1%) proportion of TB cases in 2011, followed by Hispanics with 29 percent. Black non-Hispanics and white non-Hispanics each represented slightly less than one-fifth of TB cases reported in 2011.

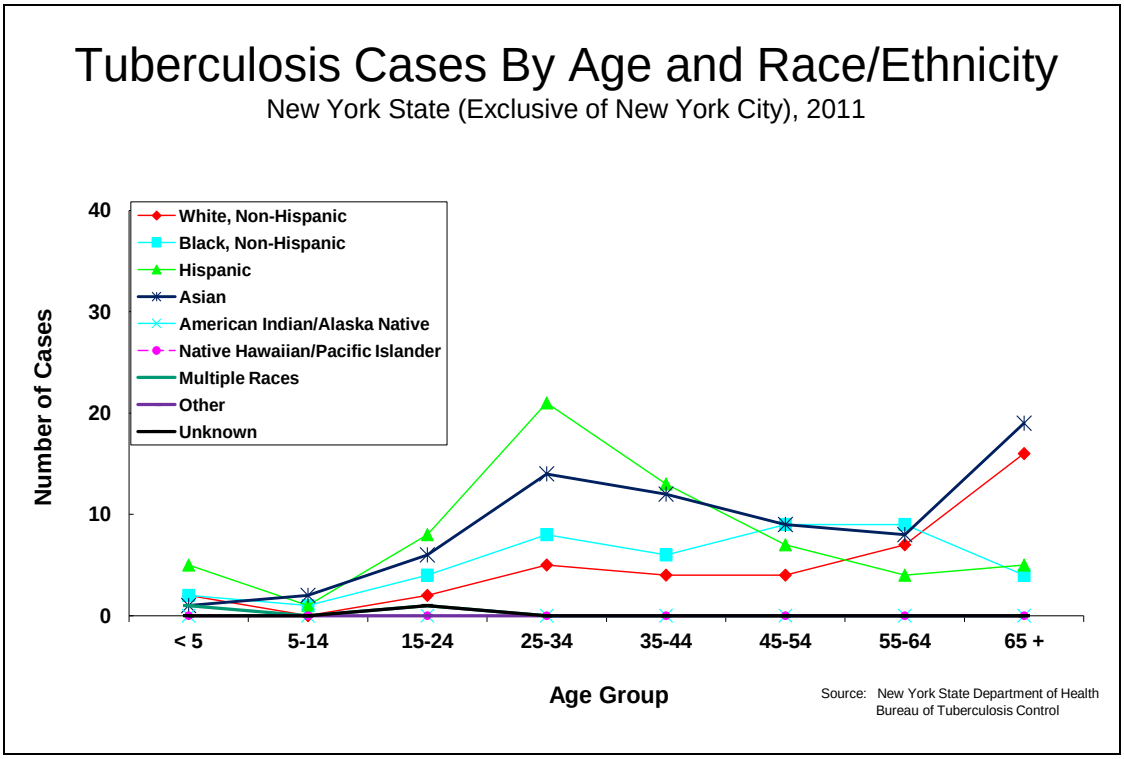

Figure 5: ***Tuberculosis Cases By Age and Race/Ethnicity, New York State (Exclusive of New York City), 2011***

The number of TB cases among Asians in New York State (exclusive of New York City) peaked in the over 65 age group (N=19), with a slightly lower peak in the 25-34 year age group (N=14). Similar to Asians, the largest number of white non-Hispanic cases were seen in the over 65 age group (N=16). The lowest number of cases observed in the over 65 age group was among black non-Hispanic cases (N=4). The greatest morbidity among Hispanics was in the 25-34 year age group (N=21). Hispanics also contributed to almost half of the cases under the age of five (N=5/11).

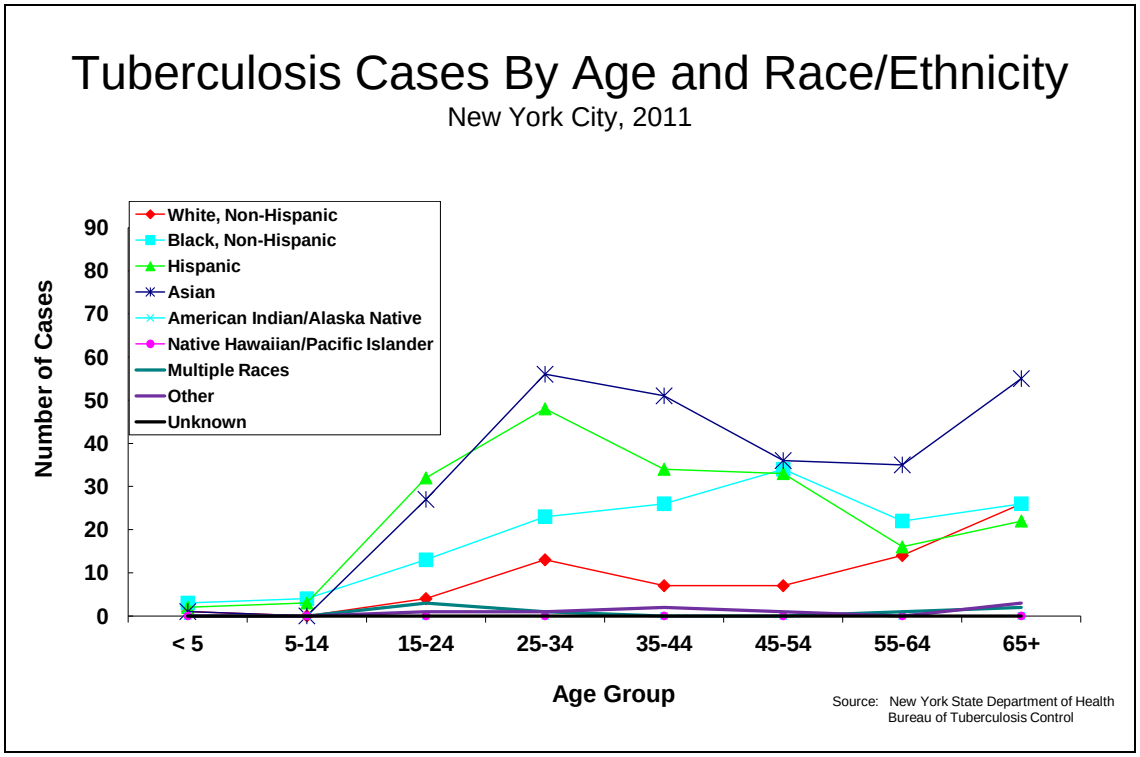

Figure 6: ***Tuberculosis Cases By Age and Race/Ethnicity, New York City, 2011***

The number of TB cases among Asians in New York City peaked in the 25-34 and the over 65 year age groups (N=56 and N=55, respectively). Similarly to Asians, Hispanics followed the same trend with the greatest morbidity in the 25-34 year age group (N=48). Among black non-Hispanics, the highest number of cases occurred in the 45-54 year age group (N=34) whereas among white non-Hispanics, the largest number of cases was found in the over 65 age group (N=26).

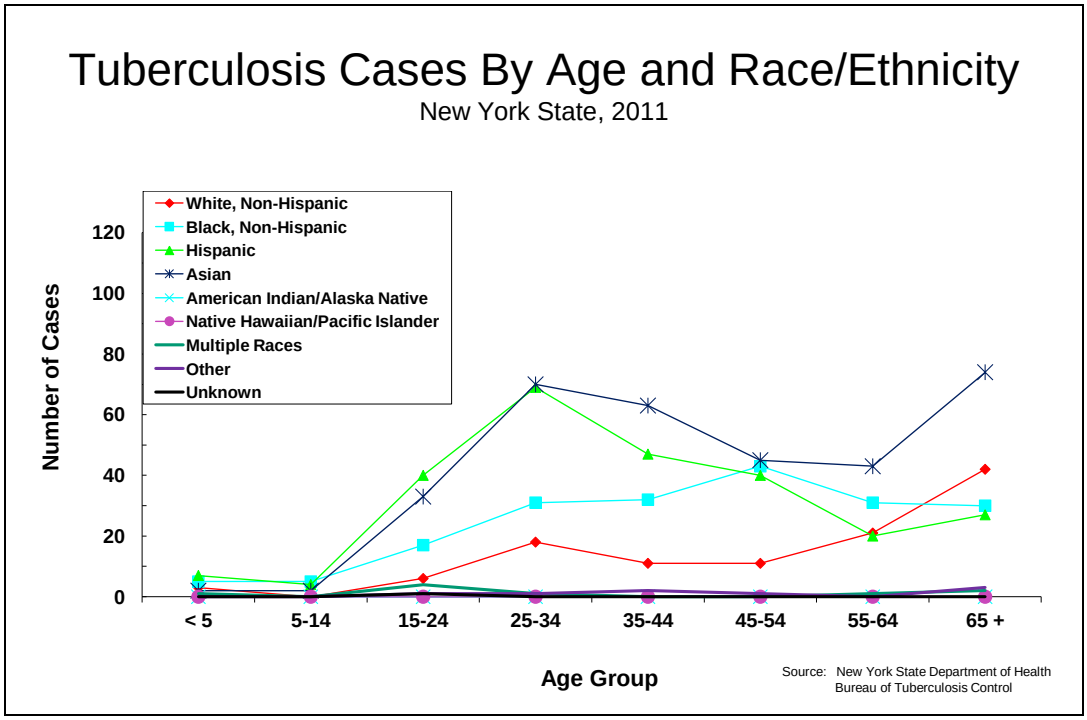

Figure 7: ***Tuberculosis Cases By Age and Race/Ethnicity, New York State, 2011***

Statewide the largest number of cases came among Asians in the over 65 and 25-34 year age groups (N=74 and N=70, respectively). Hispanics followed with the highest morbidity in the 25-34 year age group (N=69).

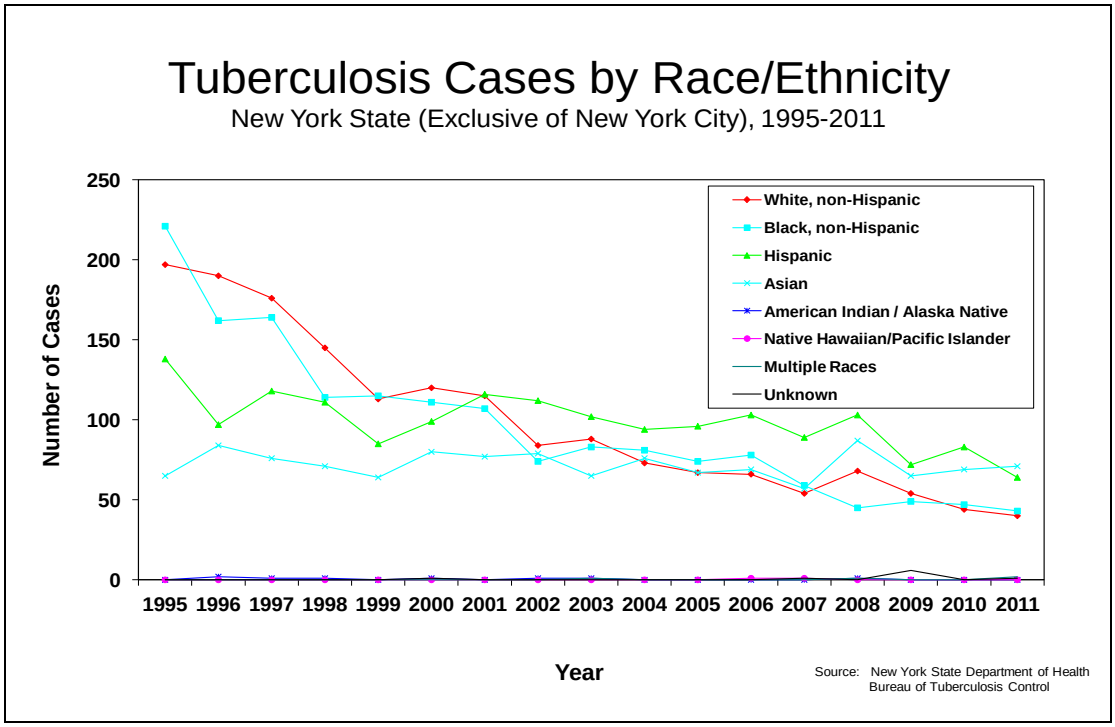

Figure 8: ***Tuberculosis Cases By Race/Ethnicity, New York State (Exclusive of New York City), 1995-2011***

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 15 years. Since 1995, the number of white non-Hispanics decreased 80.0 percent from 197 cases to 40 cases and black non-Hispanics decreased 80.5 percent from 221 cases to 43.

Over the last year, the number of TB cases decreased across all racial/ethnic groups, except for Asians who increased 2.9 percent (N=69 in 2010 and N=71 in 2011). Hispanics experienced the largest decline in case numbers, from 83 in 2010 to 64 in 2011 (22.9 %).

Tuberculosis Cases by US-Born and Foreign-Born*

Total Number; Number of US-Born; Number and Percent of Foreign-Born
New York State Counties (Exclusive of New York City), 2011

County	Total Number	US-Born Number	Foreign-Born Number	Foreign-Born Percent
Albany	8	1	7	87.5
Allegany	0	0	0	0.0
Broome	1	1	0	0.0
Cattaraugus	0	0	0	0.0
Cayuga	1	1	0	0.0
Chautauqua	0	0	0	0.0
Chemung	0	0	0	0.0
Chenango	0	0	0	0.0
Clinton	0	0	0	0.0
Columbia	0	0	0	0.0
Cortland	0	0	0	0.0
Delaware	1	0	1	100.0
Dutchess	3	0	3	100.0
Erie	14	7	7	50.0
Essex	0	0	0	0.0
Franklin	0	0	0	0.0
Fulton	0	0	0	0.0
Genesee	2	0	2	100.0
Greene	0	0	0	0.0
Hamilton	0	0	0	0.0
Herkimer	0	0	0	0.0
Jefferson	1	0	1	100.0
Lewis	0	0	0	0.0
Livingston	0	0	0	0.0
Madison	0	0	0	0.0
Monroe	19	11	8	42.1
Montgomery	0	0	0	0.0
Nassau	33	10	23	69.7
Niagara	1	1	0	0.0
Oneida	8	1	7	87.5
Onondaga	8	1	7	87.5
Ontario	3	3	0	0.0
Orange	9	3	6	66.7
Orleans	1	1	0	0.0
Oswego	0	0	0	0.0
Otsego	0	0	0	0.0
Putnam	4	2	2	50.0
Rensselaer	2	0	2	100.0
Rockland	10	1	9	90.0
St. Lawrence	0	0	0	0.0
Saratoga	0	0	0	0.0
Schenectady	3	2	1	33.3
Schoharie	0	0	0	0.0
Schuyler	0	0	0	0.0
Seneca	0	0	0	0.0
Steuben	0	0	0	0.0
Suffolk	43	13	30	69.8
Sullivan	1	0	1	100.0
Tioga	0	0	0	0.0
Tompkins	3	0	3	100.0
Ulster	1	0	1	100.0
Warren	0	0	0	0.0
Washington	0	0	0	0.0
Wayne	3	1	2	66.7
Westchester	38	4	34	89.5
Wyoming	0	0	0	0.0
Yates	0	0	0	0.0
TOTAL	221	64	157	71.0

*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 US-Born and Foreign-Born, New York State (Exclusive of New York City), 2011***

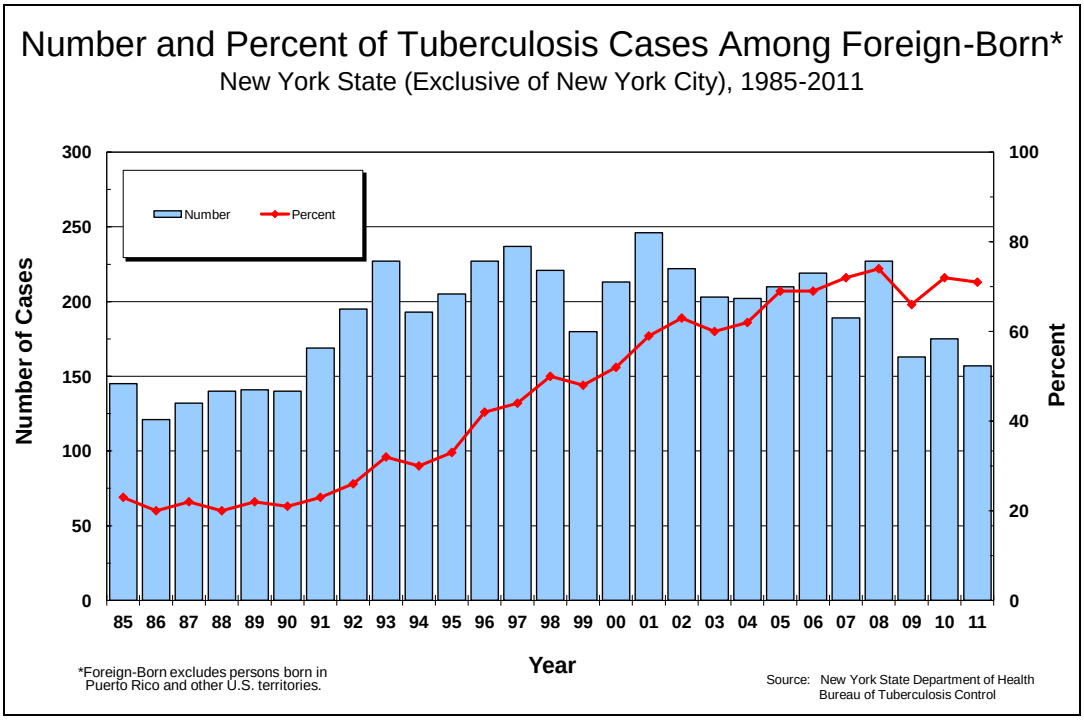

Figure 9: ***Number and Percent of Tuberculosis Cases Among Foreign-Born, New York State (Exclusive of New York City), 1985-2011***

The overall number of foreign-born TB cases in New York State (exclusive of New York City) decreased from 175 in 2010 to 157 in 2011. The percent of TB cases reported among the foreign-born also decreased from 72.0 percent in 2010 to 71.0 in 2011.

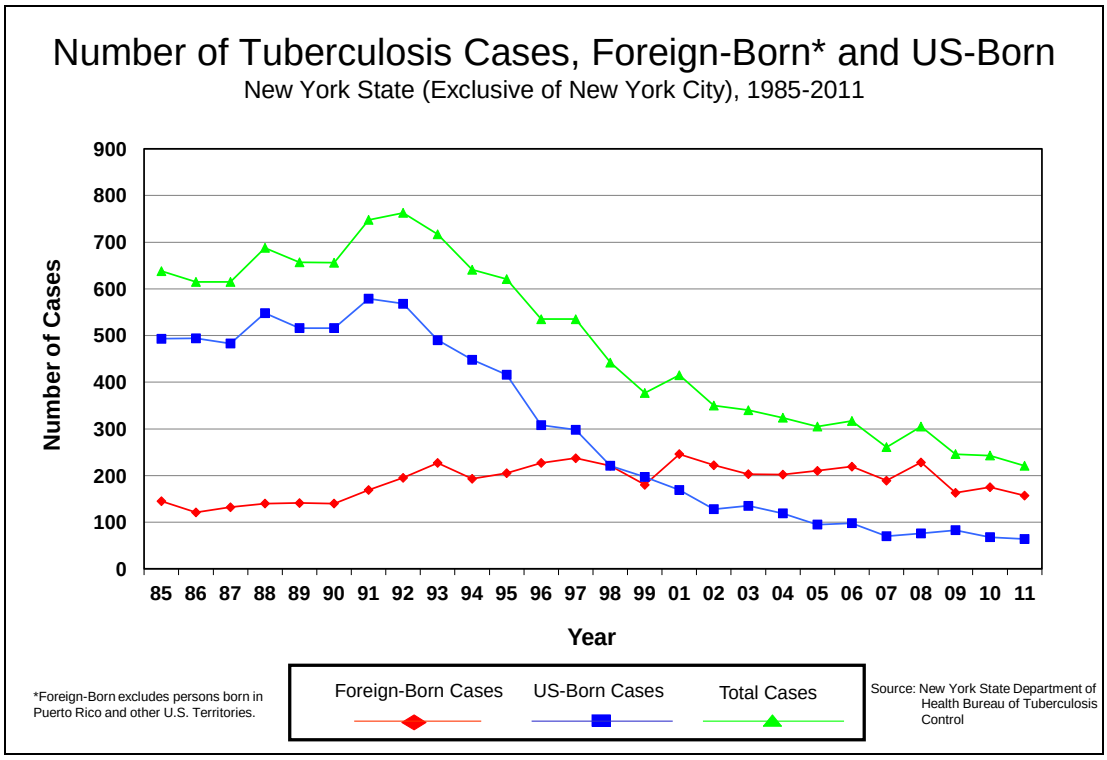

Figure 10: ***Number of Tuberculosis Cases, Foreign-Born and US-Born, New York State (Exclusive of New York City), 1985-2011***

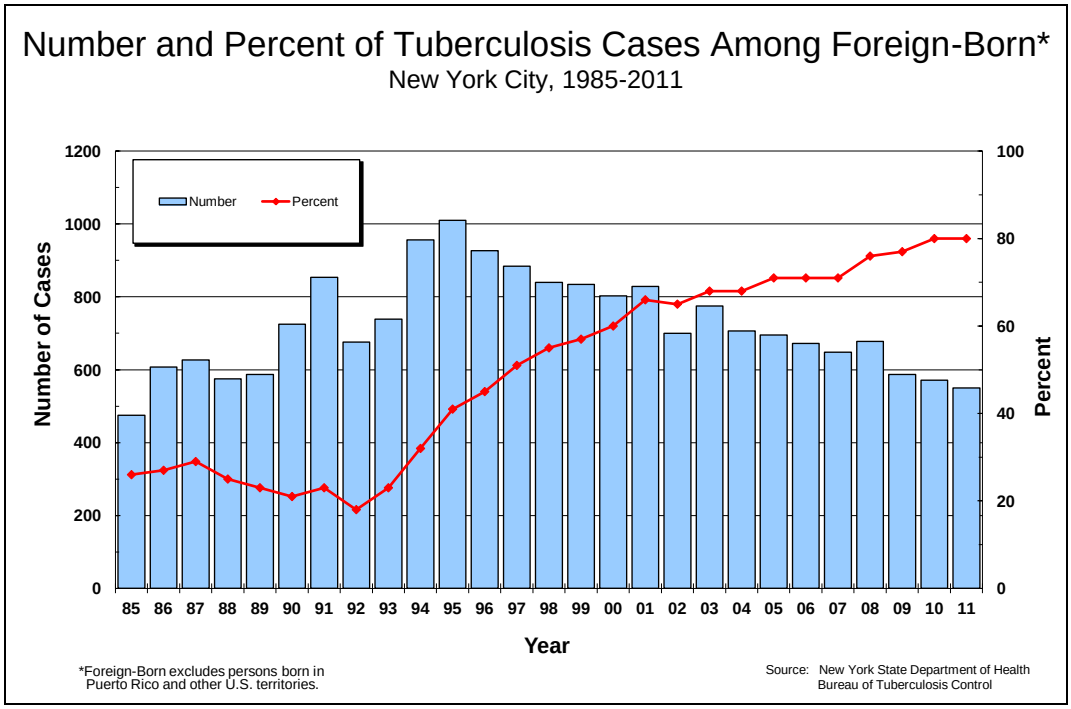

Figure 11: ***Number and Percent of Tuberculosis Cases Among Foreign-Born, New York City, 1985-2011***

The number of TB cases reported among the foreign-born decreased from 571 in 2010 to 550 in 2011 in New York City. Despite this decrease in number of cases, the percentage of foreign-born cases still remained around 80 percent.

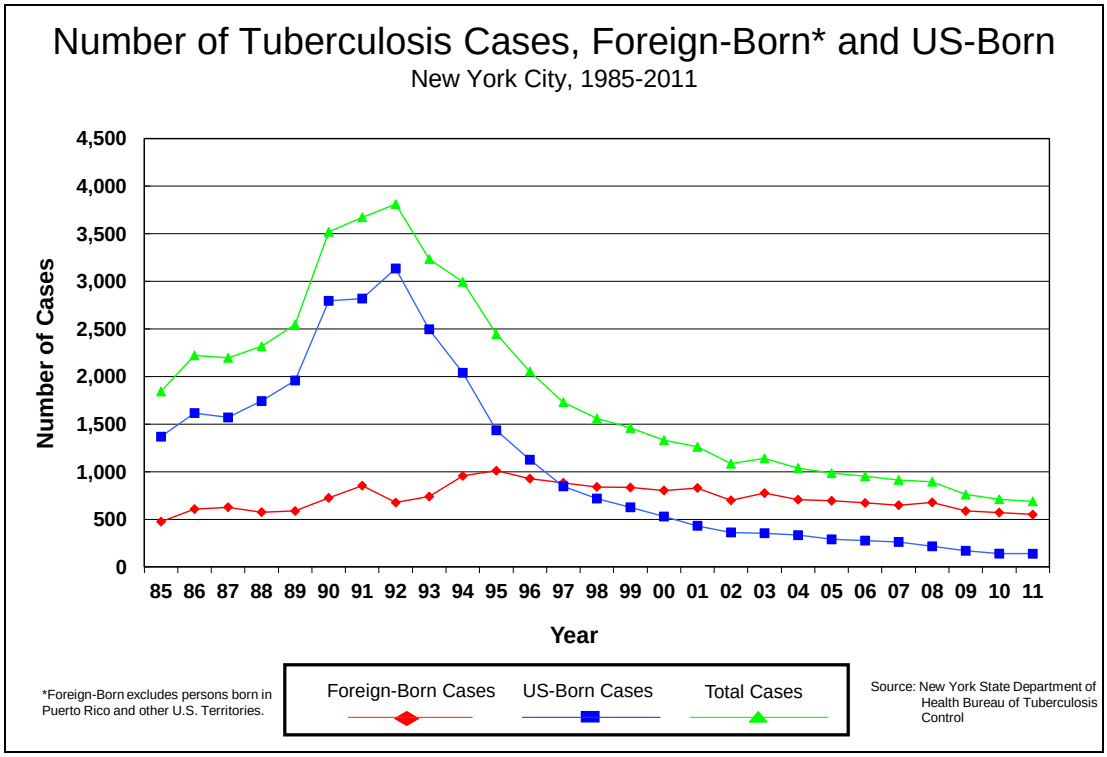

Figure 12: ***Number of Tuberculosis Cases, Foreign-Born and US-Born, New York City, 1985-2011***

Tuberculosis Cases by Country of Origin*

New York State, 2011

	New York State (Exclusive of New York City)	New York City	New York State (Total)
United States	63	121	184
China	7	104	111
Mexico	7	49	56
India	15	30	45
Ecuador	12	30	42
Dominican Republic	6	31	37
Haiti	7	30	37
Bangladesh	3	33	36
Philippines	8	16	24
Pakistan	10	10	20
Nepal	1	19	20
Burma	6	11	17
Columbia	7	9	16
Puerto Rico**	2	14	16
Korea, Republic of	4	11	15
Peru	7	7	14
Vietnam	9	5	14
Guyana	0	12	12
Honduras	2	9	11
Ukraine	1	10	11
Guatemala	3	7	10
Jamaica	0	9	9
Trinidad and Tobago	1	7	8
El Salvador	7	0	7
Hong Kong	0	7	7
Nigeria	3	4	7
The Gambia	0	7	7
Taiwan	1	5	6
Uzbekistan	0	6	6
Panama	0	5	5
Poland	1	4	5
Senegal	0	5	5
Other Countries	28	61	89
Unknown	0	1	1
Total	**221**	**689**	**910**

* Only countries representing ≥ 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, 2011***

Tuberculosis Cases by World Region of Origin

New York State (Exclusive of New York City), 2006-2011

REGION	2006	2007	2008	2009	2010	2011
Africa	27	21	17	13	13	13
East Asia	34	31	48	35	37	41
Caribbean/South and Central America/Mexico	111	93	101	69	81	62
Europe	11	15	19	13	11	6
India/Pakistan/ Middle East	36	29	42	33	29	34
United States/Canada*	98	72	77	83	72	65
TOTAL	317	261	304	246	243	221

*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), 2006-2011***

In New York State (exclusive of New York City), the TB cases originating from the Caribbean/South and Central America/Mexico, Europe and the United States/Canada all reached their lowest numbers in the past 6 years, with Europe experiencing the greatest decline of 45.5 percent over the last year (N=11 in 2010 and N=6 in 2011).

Tuberculosis Cases and Rates per 100,000 Population

Total Number and Rate; Number and Rate in General Population; Number of DOCCS* Offenders

New York State Counties (Exclusive of New York City), 2011

County	2010 Population	Total Number	Rate per 100,000	General Pop. Number	General Pop. Rate	Offender Number
Albany	304,204	8	2.6	8	2.6	0
Allegany	48,946	0	0.0	0	0.0	0
Broome	200,600	1	0.5	1	0.5	0
Cattaraugus	80,317	0	0.0	0	0.0	0
Cayuga	80,026	1	1.2	1	1.2	0
Chautauqua	134,905	0	0.0	0	0.0	0
Chemung	88,830	0	0.0	0	0.0	0
Chenango	50,477	0	0.0	0	0.0	0
Clinton	82,128	0	0.0	0	0.0	0
Columbia	63,096	0	0.0	0	0.0	0
Cortland	49,336	0	0.0	0	0.0	0
Delaware	47,980	1	2.1	1	2.1	0
Dutchess	297,488	3	1.0	3	1.0	0
Erie	919,040	14	1.5	14	1.5	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	2	3.3	2	3.3	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	1	0.9	1	0.9	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	19	2.6	19	2.6	0
Montgomery	50,219	0	0.0	0	0.0	0
Nassau	1,339,532	33	2.5	33	2.5	0
Niagara	216,469	1	0.5	1	0.5	0
Oneida	234,878	8	3.4	8	3.4	0
Onondaga	467,026	8	1.7	8	1.7	0
Ontario	107,931	3	2.8	3	2.8	0
Orange	372,813	9	2.4	9	2.4	0
Orleans	42,883	1	2.3	1	2.3	0
Oswego	122,109	0	0.0	0	0.0	0
Otsego	62,259	0	0.0	0	0.0	0
Putnam	99,710	4	4.0	4	4.0	0
Rensselaer	159,429	2	1.3	2	1.3	0
Rockland	311,687	10	3.2	10	3.2	0
St. Lawrence	111,944	0	0.0	0	0.0	0
Saratoga	219,607	0	0.0	0	0.0	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	0	0.0	0	0.0	0
Steuben	98,990	0	0.0	0	0.0	0
Suffolk	1,493,350	43	2.9	43	2.9	0
Sullivan	77,547	1	1.3	1	1.3	0
Tioga	51,125	0	0.0	0	0.0	0
Tompkins	101,564	3	3.0	3	3.0	0
Ulster	182,493	1	0.5	1	0.5	0
Warren	65,707	0	0.0	0	0.0	0
Washington	63,216	0	0.0	0	0.0	0
Wayne	93,772	3	3.2	3	3.2	0
Westchester	949,113	38	4.0	38	4.0	0
Wyoming	42,155	0	0.0	0	0.0	0
Yates	25,348	0	0.0	0	0.0	0
TOTAL	11,202,969	221	2.0	221	2.0	0

*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), 2011***

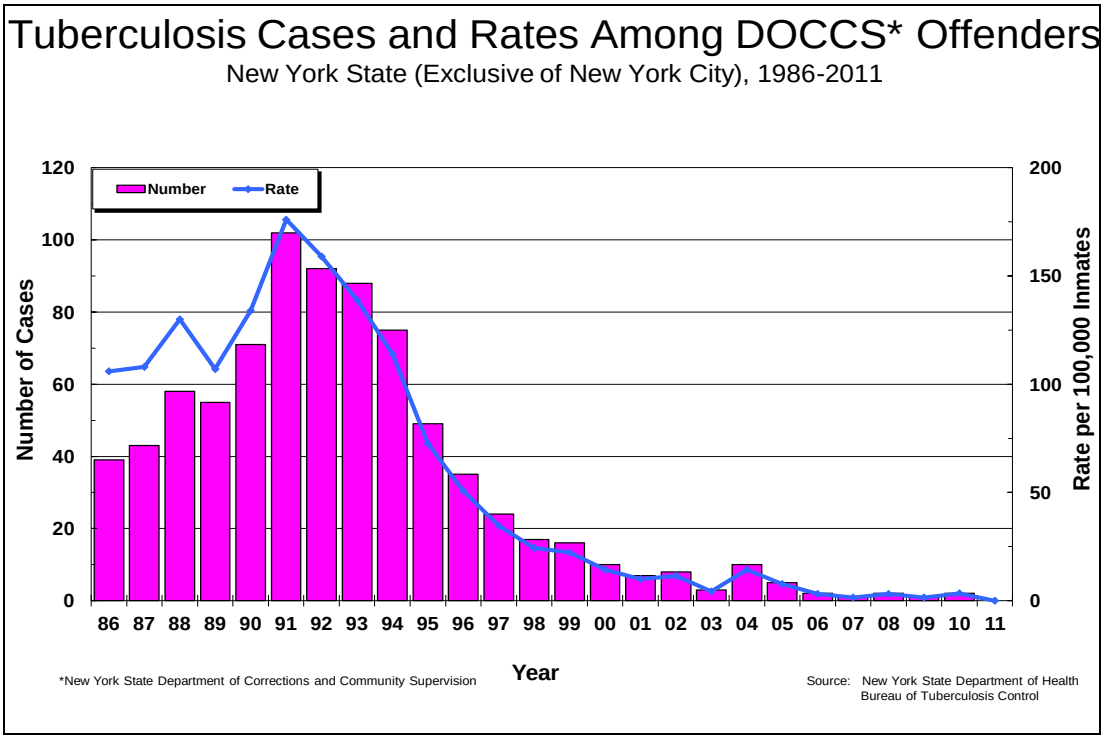

Figure 13: ***Tuberculosis Cases and Rates Among DOCCS Offenders, New York State (Exclusive of New York City), 1986-2011***

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) offender population. Among the DOCCS offender population, there has been a notable decline in cases since 1991 when 102 new cases (176 per 100,000 offenders) were reported. In 2011 no new cases were reported.

HIV Status Among Tuberculosis Patients

New York State (Exclusive of New York City), 2006-2011

HIV STATUS	2006		2007		2008		2009		2010		2011	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Negative	185	(58.4)	174	(66.7)	222	(72.8)	163	(66.3)	178	(73.3)	165	(74.7)
Positive	26	(8.2)	17	(6.5)	19	(6.2)	11	(4.5)	16	(6.6)	11	(5.0)
Unknown	106	(33.4)	70	(26.8)	64	(21.0)	72	(29.3)	49	(20.2)	45	(20.4)
TOTAL	317	(100.0)	261	(100.0)	305	(100.0)	246	(100.0)	243	(100.0)	221	(100.0)

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), 2006-2011***

Knowledge of HIV status is improving among individuals with active TB in New York State (exclusive of New York City). 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 221 TB cases in 2010, only 5.0 percent (N=11/221) had a positive HIV status, a decrease from the 6.6 percent (N=16/243) identified in 2010.

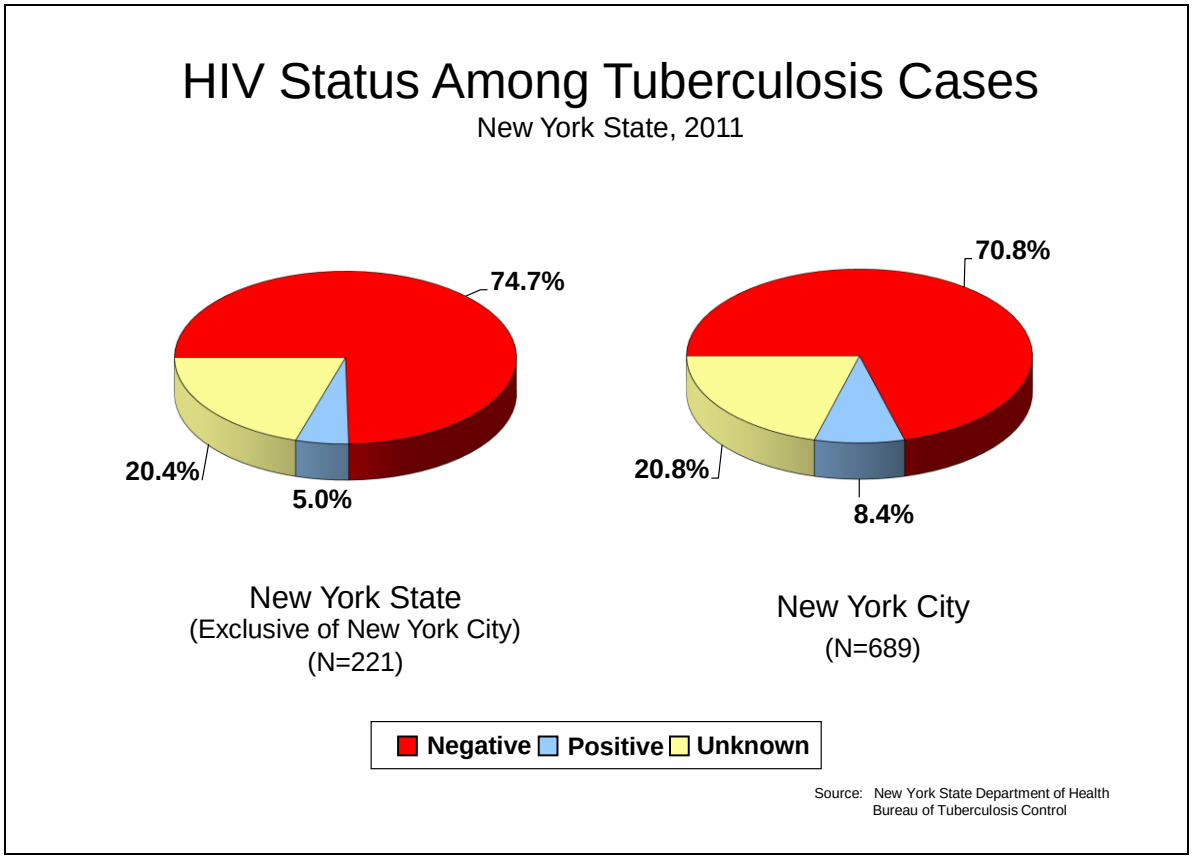

Figure 14: ***HIV Status Among Tuberculosis Cases, New York State, 2011***

In 2011, the percentage of TB cases with a known HIV status was similar in New York State (exclusive of New York City) and New York City (79.7% and 79.2%, respectively), but the percentage of cases co-infected with HIV was greater in New York City than in the rest of the state (8.4% and 5.0%, respectively).

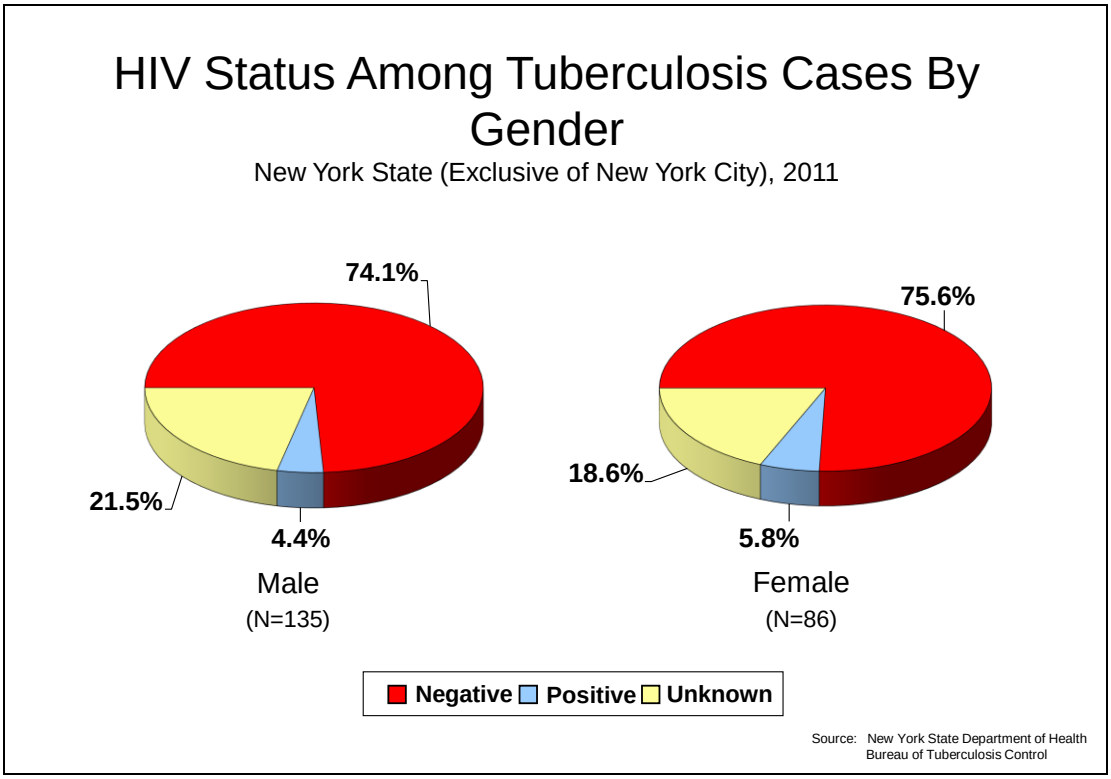

Figure 15: ***HIV Status Among Tuberculosis Cases By Gender, New York State (Exclusive of New York City), 2011***

In 2011, 18.6 percent (N=16) of female TB cases and 21.5 percent (N=29) 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 also similar for both males and females (74.1%, N=100 for males and 75.6%, N=65 for females). The number of male TB cases co-infected with HIV drastically decreased by 50.0%, from 12 in 2010 to 6 in 2011.

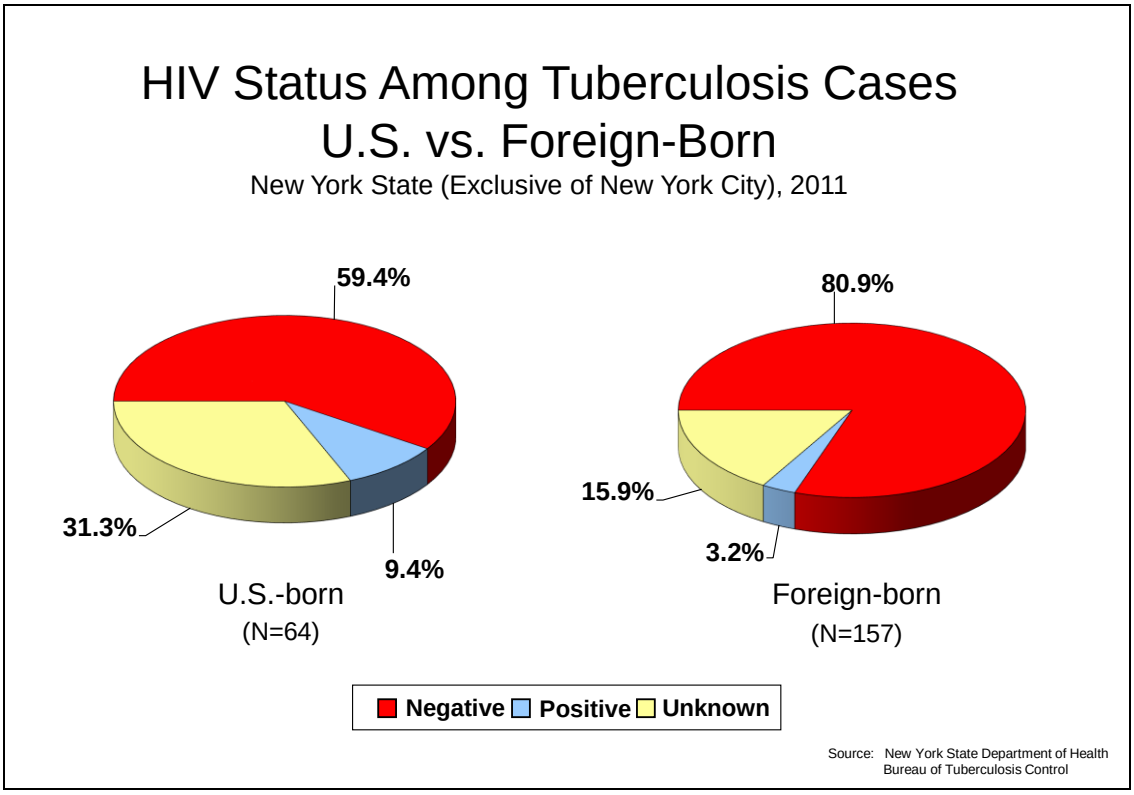

Figure 16: ***HIV Status Among Tuberculosis Cases, U.S. vs. Foreign-Born, New York State (Exclusive of New York City), 2011***

In New York State (exclusive of New York City), a greater percentage of foreign-born TB cases (84.1%, N=132) reported a known HIV status, than U.S.-born (68.8%, N=44). The percent of U.S.-born TB cases with an unknown HIV status was almost twice as great as that seen among foreign-born cases (31.3%, N=20 for US-born and 15.9%, N=25 for foreign-born cases). HIV co-infection was also much greater among U.S.-born cases compared to foreign-born cases despite similar numbers of cases in this group (9.4%, N=6 for U.S.-born and 3.2%, N=5 for foreign-born cases).

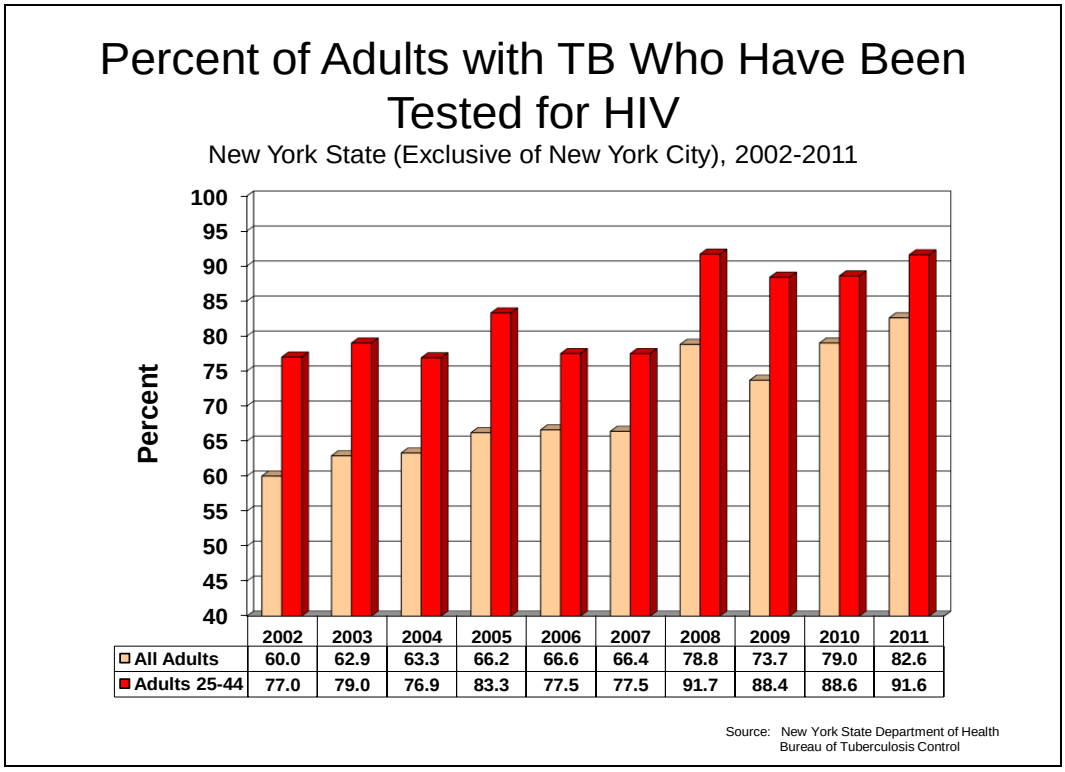

Figure 17: ***Percent of Adults with TB Who Have Been Tested for HIV, New York State (Exclusive of New York City), 2002-2011***

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 2011, 82.6 percent of all adults with TB had a known HIV status, exceeding the New York State (exclusive of New York City) objective for 2011 (76.5%). In the subgroup of TB cases between the ages of 25 and 44, the percentage with a known HIV status was much higher (91.6%).

Primary Reason For Evaluation of Tuberculosis Cases

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

PRIMARY REASON FOR EVALUATION	Non-MDR		MDR	
	No.	(%)	No.	(%)
TB Symptoms	112	(52.1)	4	(66.7)
Abnormal Chest Radiograph	53	(24.7)	1	(16.7)
Incidental Lab Result	28	(13.0)	0	(0.0)
Immigration Medical Exam	4	(1.9)	0	(0.0)
Contact Investigation	10	(4.7)	0	(0.0)
Employment/Administrative Testing	0	(0.0)	0	(0.0)
Health Care Worker	0	(0.0)	0	(0.0)
Targeted Testing	4	(1.9)	1	(16.7)
Unknown	4	(1.9)	0	(0.0)
No Information Provided	0	(0.0)	0	(0.0)
TOTAL	215	(100.0)	6	(100.0)

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), 2011***

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. Abnormal chest radiograph and targeted testing were also cited as reasons for evaluation.

Of the 215 non-MDR TB cases diagnosed in 2011, over half (52.1%) were evaluated as a result of presenting with TB symptoms. Other common reasons for evaluation included an abnormal chest radiograph (N=53, 24.7%) and an incidental lab result (N=28, 13.0%).

Additional Risk Factors Among Tuberculosis Cases by Gender

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

ADDITIONAL RISK FACTOR	Male		Female		Total	
	No.	(%)	No.	(%)	No.	(%)
None	91	(64.5)	53	(58.9)	144	(62.3)
Diabetes Mellitus	15	(10.6)	7	(7.8)	22	(9.5)
Immunosuppression (not HIV/AIDS)	10	(7.1)	8	(8.9)	18	(7.8)
Incomplete LTBI Therapy	6	(4.3)	7	(7.8)	13	(5.6)
Contact of an Infectious TB Patient*	5	(3.5)	7	(7.8)	12	(5.2)
End-Stage Renal Disease	3	(2.1)	1	(1.1)	4	(1.7)
Post-organ Transplantation	2	(1.4)	0	(0.0)	2	(0.9)
Contact of an MDR TB Patient*	0	(0.0)	1	(1.1)	1	(0.4)
Missed Contact*	0	(0.0)	1	(1.1)	1	(0.4)
TNF-alpha Antagonist Therapy	0	(0.0)	0	(0.0)	0	(0.0)
Other	8	(5.7)	3	(3.3)	11	(4.8)
Unknown	1	(0.7)	2	(2.2)	3	(1.3)

*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), 2011***

Aside from the commonly collected risk factors (i.e. HIV status, drug/alcohol usage, occupation, country of birth), 34.8 percent (N=77) 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 2011. Overall, the most commonly reported factors were diabetes (N=22, 9.5%), having some form of immunosuppression (not HIV/AIDS) (N=18, 7.8%), incomplete LTBI therapy (N=13, 5.6%) and being a contact to an infectious TB patient (N=12, 5.2%).

For male TB cases, diabetes (N=15, 10.6%) and immunosuppression (not HIV/AIDS) (N=10, 7.1%) were cited as the most common additional risk factors and for females, immunosuppression (not HIV/AIDS) (N=8, 8.9%), incomplete LTBI therapy (N=7, 7.5%), and diabetes (N=7, 7.8%) were the most prevalent risk factors reported.

Nine cases (N=5 males, N=4 females) reported multiple additional risk factors. Diabetes and immunosuppression (not HIV/AIDS) were the most common factors reported in combination with each other as well as with other factors such as post-organ transplantation and end stage renal disease.

Drug Susceptibility Test Results
Among Culture Confirmed Tuberculosis Cases
General Population vs State Offenders

New York State (Exclusive of New York City), 2009-2011

	2009						2010						2011					
	General Population		Offender Population		Total Population		General Population		Offender Population		Total Population		General Population		Offender Population		Total Population	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Susceptibility test reported	180		1		181		168		1		169		169		0		169	
Susceptible to all first-line drugs	151	(83.9)	1	(100.0)	152	(84.0)	135	(80.4)	1	(100.0)	136	(80.5)	136	(80.5)	0	(0.0)	136	(80.5)
Resistant to INH and RIF (MDR TB)	5	(2.8)	0	(0.0)	5	(2.8)	3	(1.8)	0	(0.0)	3	(1.8)	6	(3.6)	0	(0.0)	6	(3.6)
INH resistant and RIF susceptible	16	(8.9)	0	(0.0)	16	(8.8)	13	(7.7)	0	(0.0)	13	(7.7)	12	(7.1)	0	(0.0)	12	(7.1)
RIF resistant and INH susceptible	0	(0.0)	0	(0.0)	0	(0.0)	4	(2.4)	0	(0.0)	4	(2.4)	1	(0.6)	0	(0.0)	1	(0.6)
Resistant to first-line drugs other than INH and RIF	8	(4.4)	0	(0.0)	8	(4.4)	13	(7.7)	0	(0.0)	13	(7.7)	14	(8.3)	0	(0.0)	14	(8.3)

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 Among Culture Confirmed Tuberculosis Cases, General Population vs State Offenders, New York State (Exclusive of New York City), 2009-2011***

In 2011, drug susceptibility tests were performed on 98.3 percent (N=169/172) of culture-positive TB cases in New York State (exclusive of New York City). MDR TB was identified in six cases. Twelve culture-positive cases were resistant to isoniazid (INH) and one rifampin (RIF) resistant case was reported. There were no offender TB cases in 2011.

Drug Susceptibility Test Results
Among Culture Confirmed Tuberculosis Cases
US-Born vs Foreign-Born*

New York State (Exclusive of New York City), 2009-2011

	2009						2010						2011					
	US-Born Population		Foreign-Born Population		Total Population		US-Born Population		Foreign-Born Population		Total Population		US-Born Population		Foreign-Born Population		Total Population	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Susceptibility test reported	57		124		181		45		124		169		50		119		169	
Susceptible to all first-line drugs	47	(82.5)	105	(84.7)	152	(84.0)	32	(71.1)	104	(83.9)	136	(80.5)	43	(86.0)	93	(78.2)	136	(80.5)
Resistant to INH and RIF (MDR TB)	2	(3.5)	3	(2.4)	5	(2.8)	1	(2.2)	2	(1.6)	3	(1.8)	0	(0.0)	6	(5.0)	6	(3.6)
INH resistant and RIF susceptible	4	(7.0)	12	(9.7)	16	(8.8)	3	(6.7)	10	(8.1)	13	(7.7)	5	(10.0)	7	(5.9)	12	(7.1)
RIF resistant and INH susceptible	0	(0.0)	0	(0.0)	0	(0.0)	3	(6.7)	1	(0.8)	4	(2.4)	0	(0.0)	1	(0.8)	1	(0.6)
Resistant to first-line drugs other than INH and RIF	4	(7.0)	4	(3.2)	8	(4.4)	6	(13.3)	7	(5.6)	13	(7.7)	2	(4.0)	12	(10.1)	14	(8.3)

*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 13: ***Drug Susceptibility Test Results Among Culture Confirmed Tuberculosis Cases, US-Born vs. Foreign-Born, New York State (Exclusive of New York City), 2009-2011***

In 2011, all of the MDR TB cases in New York State (exclusive of New York City) and eighty-six percent (N=12/14) of TB cases resistant to first-line drugs other than RIF and INH were foreign-born.

Drug Susceptibility Test Results
MDR TB

New York State (Exclusive of New York City), 2006-2011

	2006	2007	2008	2009	2010	2011
Culture Positive	239	191	229	182	170	172
Susceptibility Test Reported	238	188	227	181	169	169
Resistant to INH and RIF (MDR TB)*	3 (1.3%)	0 (0.0%)	1 (0.4%)	5 (2.8%)	3 (1.8%)	6 (3.6%)

*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 14: ***Drug Susceptibility Test Results, MDR TB, New York State (Exclusive of New York City), 2006-2011***

In New York State (exclusive of New York City), susceptibility results were reported for 98.3 percent (N=169/172) of culture-positive cases in 2011. There were six MDR TB cases, a twofold increase from the three cases identified in 2010.

Drug Susceptibility Test Results
MDR TB
New York City, 2006-2011

	2006	2007	2008	2009	2010	2011
Culture Positive	553	709	688	539	512	501
Susceptibility Test Reported	549	702	680	534	505	490
Resistant to INH and RIF (MDR TB)*	18 (3.3%)	9 (1.0%)	11 (2.0%)	9 (1.7%)	11 (2.2%)	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, 2006-2011***

In New York City in 2011, susceptibility results were reported for 97.8 percent (N=490/501) of culture-positive TB cases. The number of MDR TB cases increased from 11 in 2010 to 16 in 2011.

Tuberculosis Genotyping Summary by Year

New York State (Exclusive of New York City), 2009-2011

	2009		2010		2011	
	N	(%)	N	(%)	N	(%)
Initial Positive Cultures	188		172		177	
False Positives	5	(2.7)	2	(1.2)	5	(2.8)
Control Strain	0	(0.0)	0	(0.0)	0	(0.0)
Contamination	1	(0.5)	1	(0.6)	2	(1.1)
M. bovis BCG	4	(2.1)	1	(0.6)	3	(1.7)
True Positives	183	(97.3)	170		172	
Isolates Available	182		170		172	
Complete Genotype*	147	(80.8)	166	(97.6)	155	(90.1)
Partial Genotype	165	(90.7)	167	(98.2)	167	(97.1)
No Result	17	(9.3)	3	(1.8)	5	(2.9)

*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), 2009-2011***

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 2011, 100 percent (N=172/172) of isolates in New York State (exclusive of New York City) were available for genotyping. A spoligotype and MIRU result were available for 90.1 percent of these isolates (N=155/172). Since 2009, due to diminishing resources, RFLP has no longer been performed on all specimens.

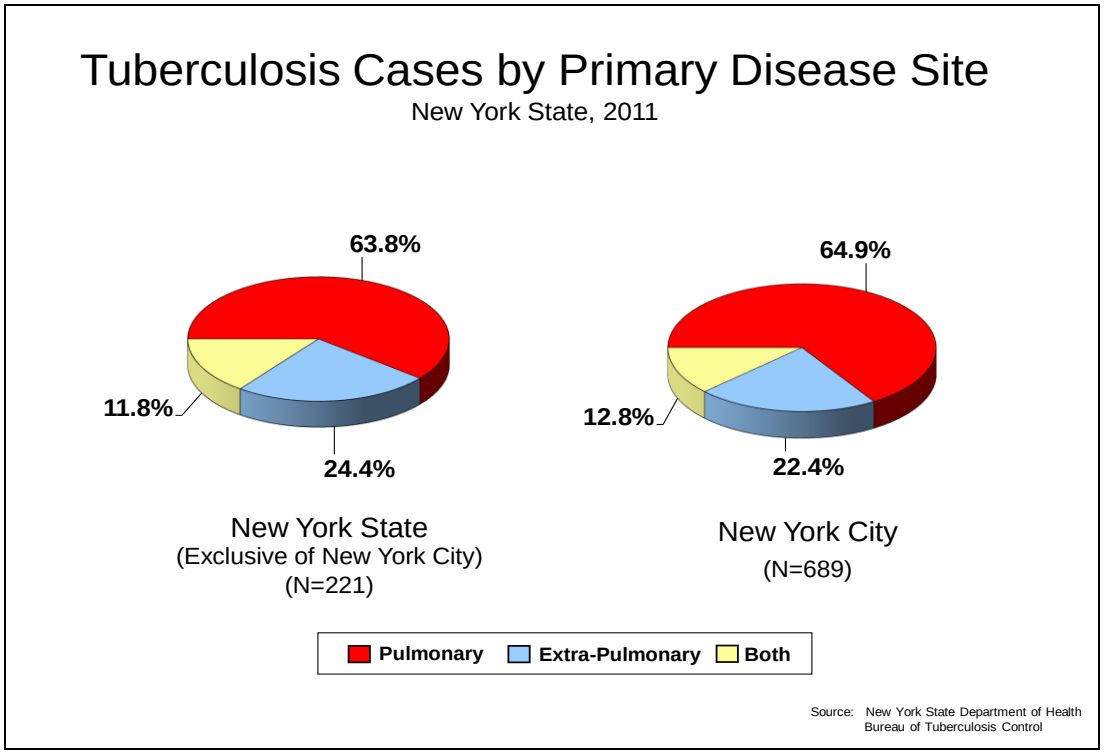

Figure 18: ***Tuberculosis Cases by Primary Disease Site, New York State, 2011***

Pulmonary TB was the primary site of disease in 77.1 percent (N=702) of cases reported in New York State in 2011. Compared to 2010, this was 13.8 percent (N=617) more pulmonary TB cases.

Seventy-six percent (N=167) of TB cases in New York State (exclusive of New York City) were reported to have pulmonary TB in 2011, a large increase from the 61 percent in 2010. In New York City, 535 pulmonary TB cases were reported, an increase of 14 percent from the 469 identified in 2010.

Of the TB cases in New York State (exclusive of New York City) with extra-pulmonary TB disease (24.4%, N=54), the most common sites of disease were lymphatic (48.2%, N=26) and pleural (16.7%, N=9). The most frequently reported extra-pulmonary sites in New York City were lymphatic (42.2%, N=65), pleural (14.9%, N=23), and bone (12.3%, N=19).

Treatment Status of Tuberculosis Cases Reported in 2010*

New York State (Exclusive of New York City)

TREATMENT STATUS	Non-MDR		MDR	
	No.	(%)	No.	(%)
Completed	217	(92.0)	2	(66.7)
Prolonged Therapy	1	(0.4)	1	(33.3)
Died	13	(5.5)	0	(0.0)
Uncooperative/Refused	0	(0.0)	0	(0.0)
Lost	1	(0.4)	0	(0.0)
Adverse Treatment Event	1	(0.4)	0	(0.0)
Other or Unknown	3	(1.3)	0	(0.0)
TOTAL	236	(100.0)	3	(100.0)

*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 2010, New York State (Exclusive of New York City)***

Of the 236 non-MDR TB cases in New York State (exclusive of New York City) who were alive at diagnosis in 2010 (the most recent year for which complete information is available), 92.0 percent completed a full course of therapy with a completion index of 98.2 (completion index = number completed / [number alive at diagnosis - number died on treatment - number moved out of jurisdiction]*100).

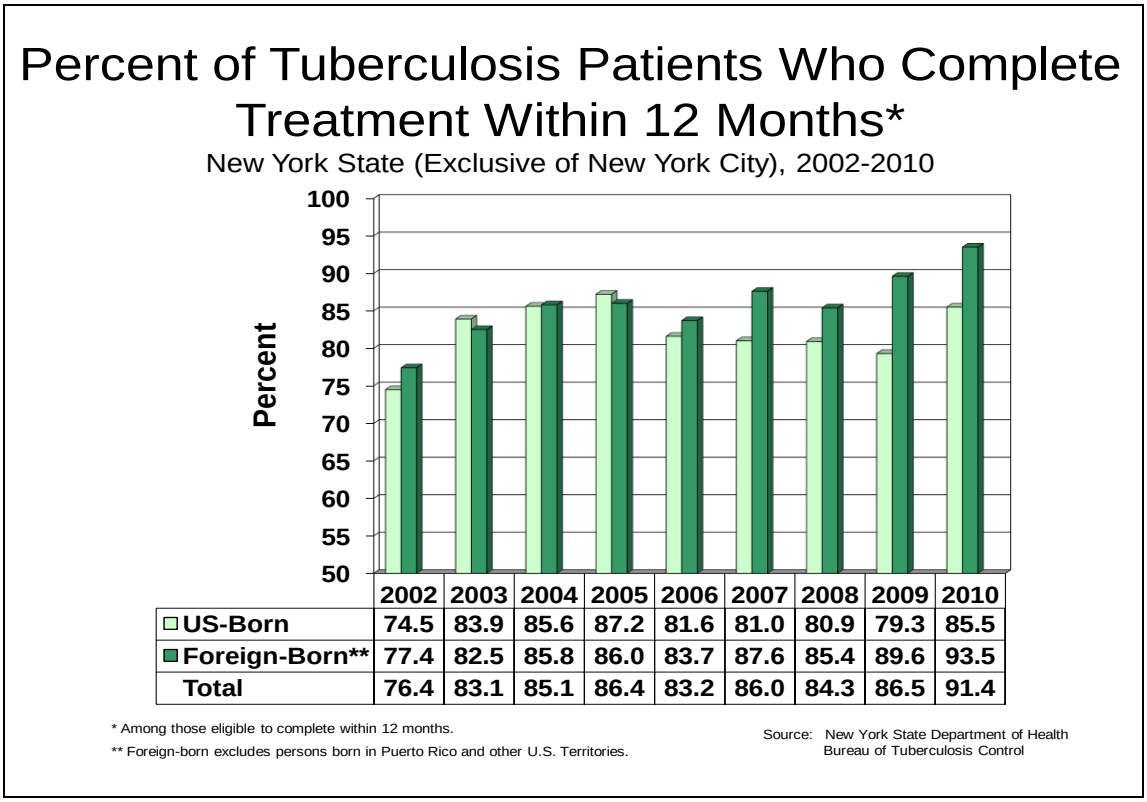

Figure 19: ***Percent of Tuberculosis Patients Who Complete Treatment Within 12 Months, New York State (Exclusive of New York City), 2002-2010***

For 2010 (the most recent year for which complete information is available), 91.4 percent (N=191/209) of patients in New York State (exclusive of New York City) eligible*** to complete treatment within 12 months, did so. This is slightly less than the national objective of 93.0 percent but greatly exceeds the 2010 NYS objective (83.0%). An additional 7.7 percent (N=16/209) of patients completed treatment in more than 12 months, for an overall completion rate of 99.0 percent.

A larger percentage of foreign-born patients completed therapy within 12 months than U.S.-born in 2010 (93.5% and 85.5%, 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.

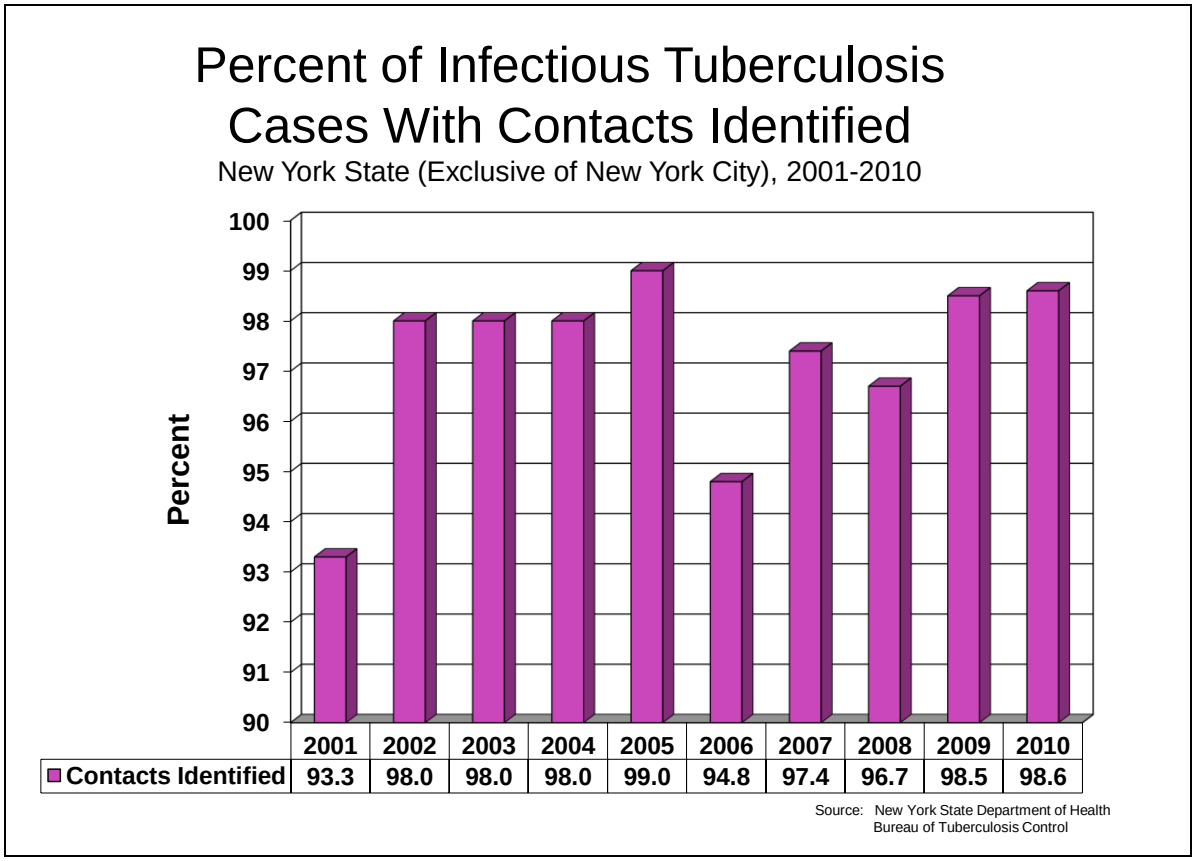

Figure 20: ***Percent of Infectious Tuberculosis Cases with Contacts Identified, New York State (Exclusive of New York City), 2001-2010***

In 2010 (the most recent year for which complete information is available), 98.6 percent (N=72) 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 percent.

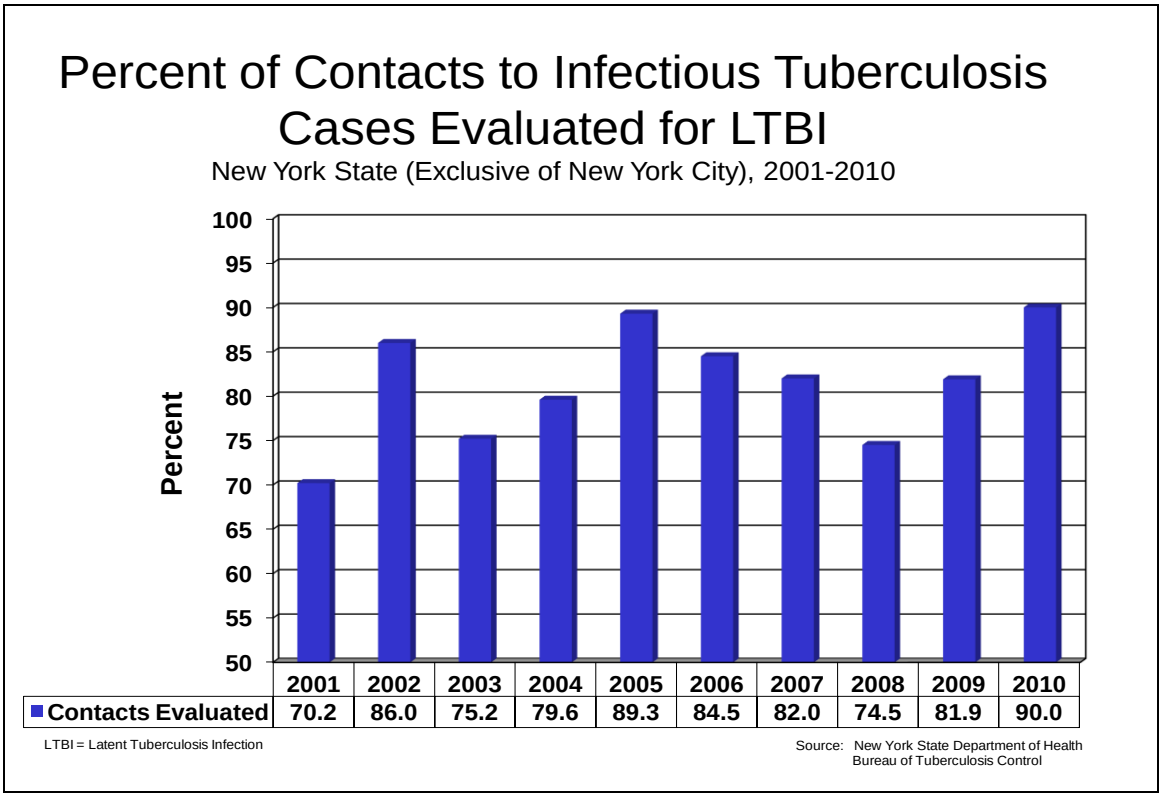

Figure 21: ***Percent of Contacts to Infectious Tuberculosis Cases Evaluated for LTBI, New York State (Exclusive of New York City), 2001-2010***

Ninety percent (N=2,027) 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 2010 (the most recent year for which complete information is available). This is a large increase from the 81.9 percent (N=1,448) evaluated in 2009 and greatly exceeded our state objective of 82 percent.

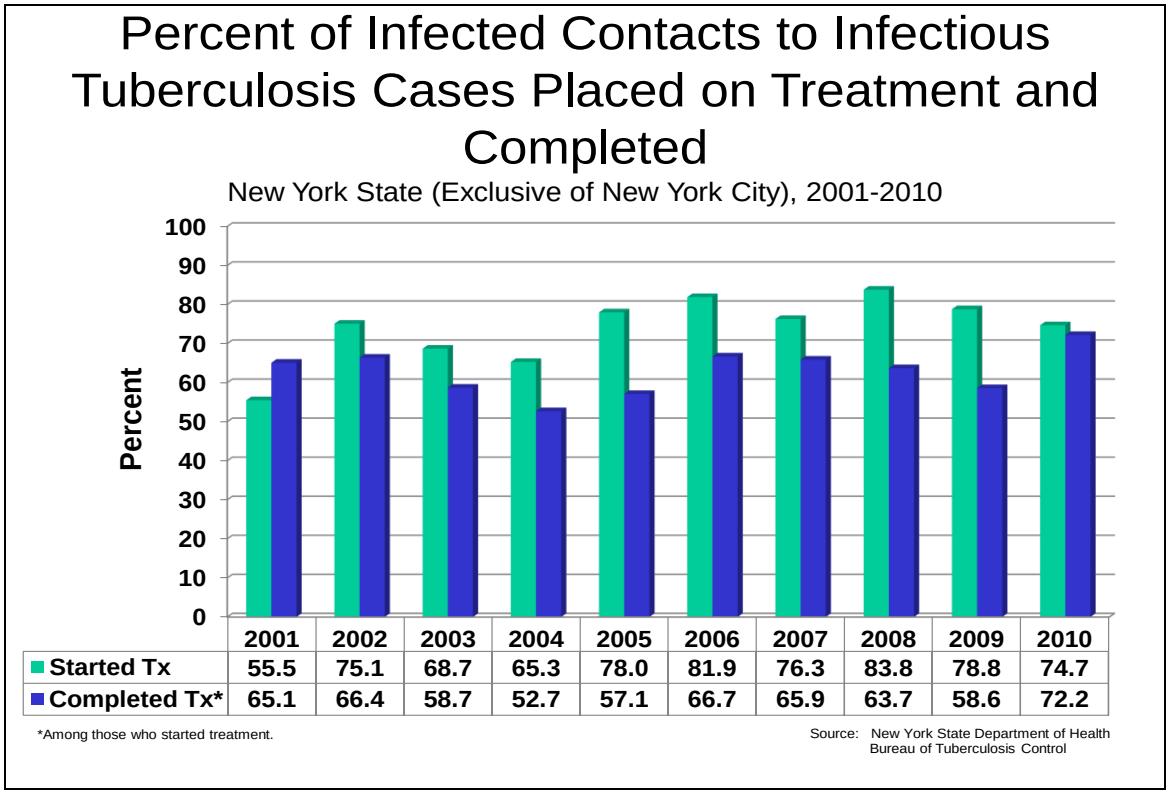

Figure 22: ***Percent of Infected Contacts to Infectious Tuberculosis Cases Placed on Treatment and Completed, New York State (Exclusive of New York City), 2001-2010***

Seventy-five 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 2010 (the most recent year for which complete information is available), a decrease from 78.8 percent in 2009. Seventy-two percent of those starting treatment actually completed the prescribed regimen, which is the highest completion rate in at least 10 years.

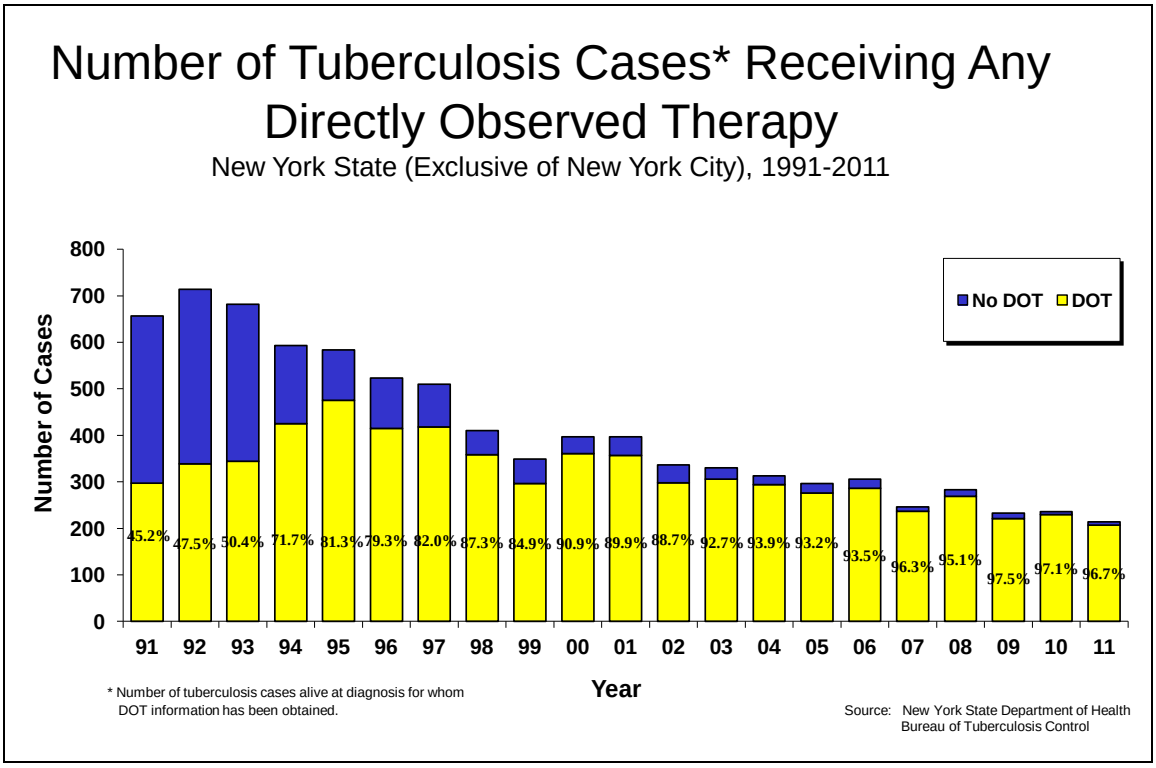

Figure 23: ***Number and Percentage of Tuberculosis Cases Receiving Any Directly Observed Therapy, New York State (Exclusive of New York City), 1991-2011***

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 96.7 percent in 2011.

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/tb/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

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