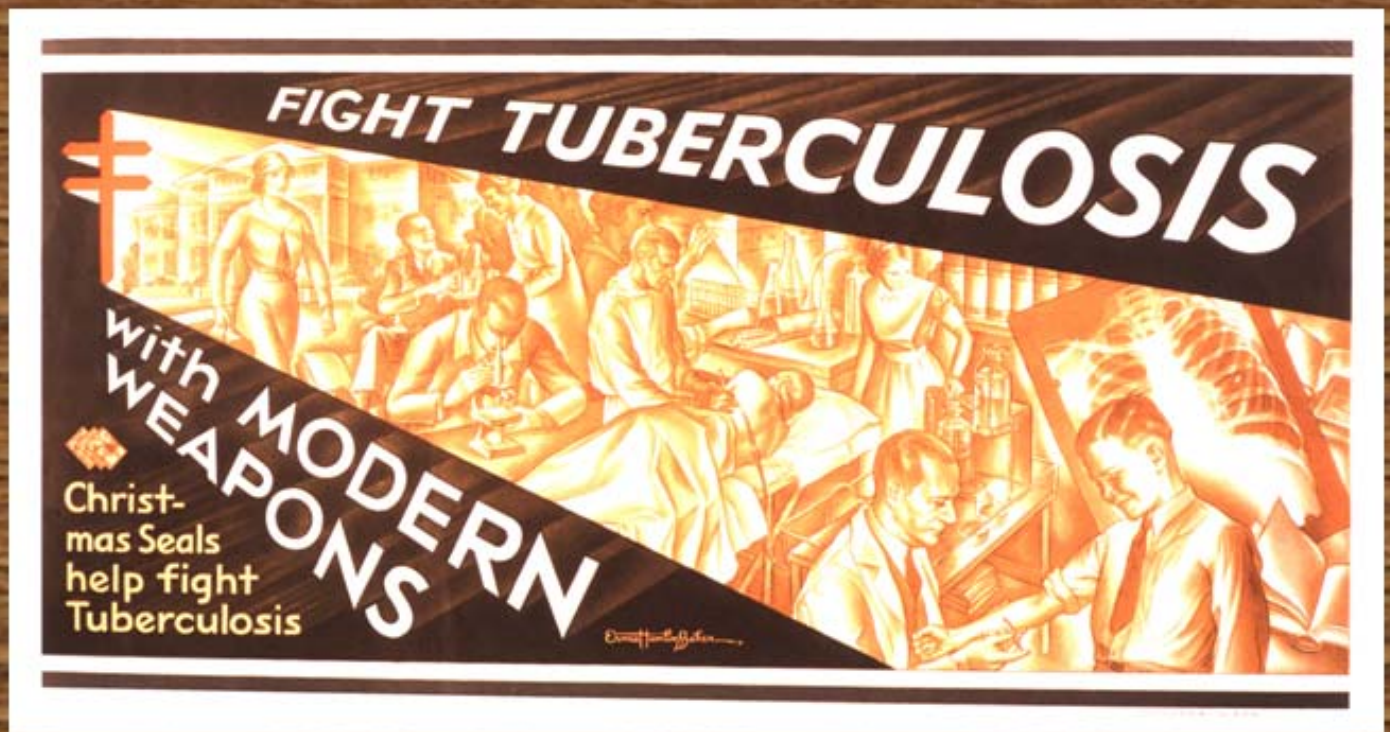


2009

Annual Statistical Report
Bureau of Tuberculosis Control



Tuberculosis
in
New York State

2009 Annual Report

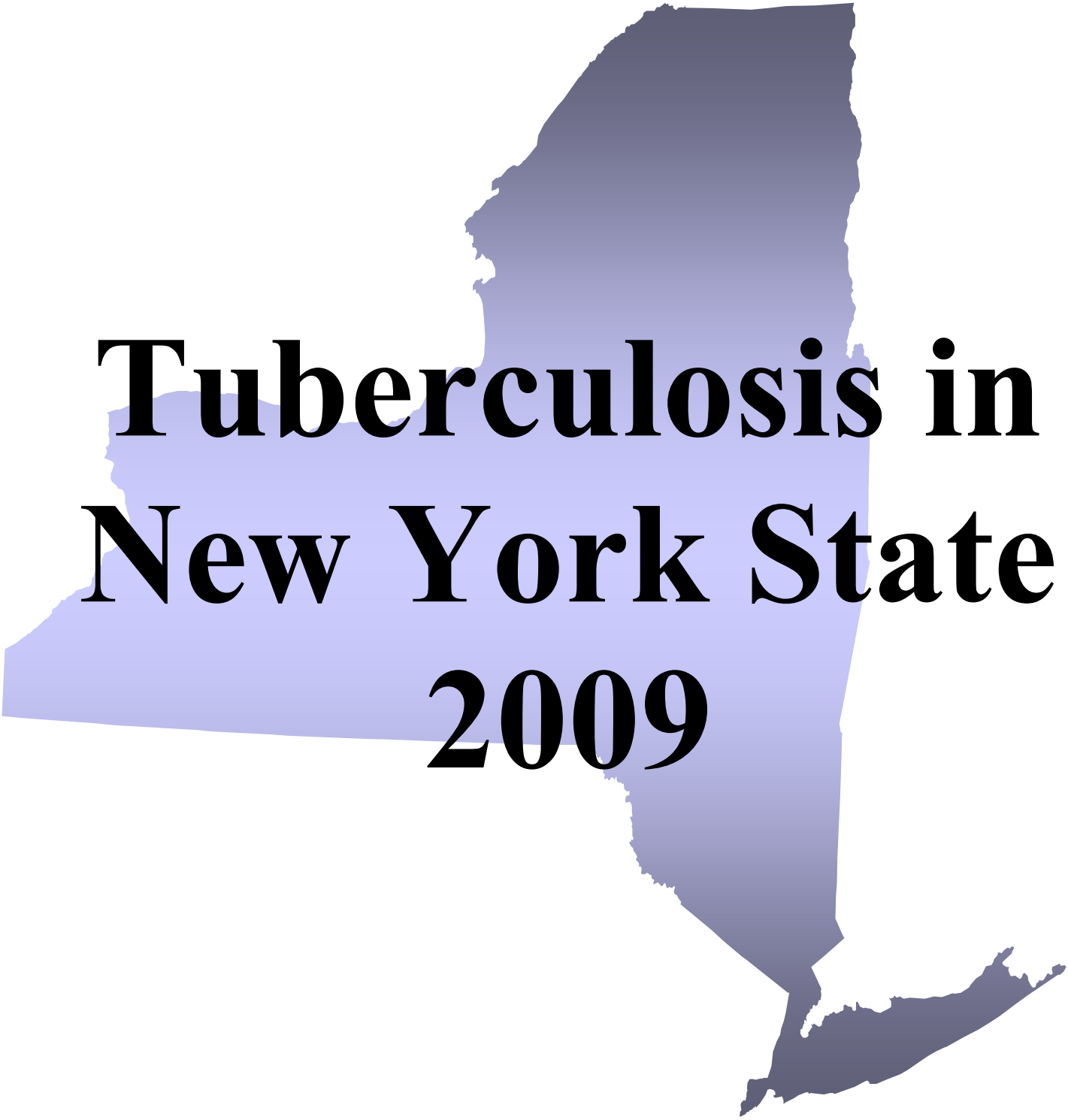
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SUMMARY

- Between 2008 and 2009, tuberculosis (TB) morbidity decreased in New York State. The 2009 figure of 1,006 (760 cases in New York City, 246 cases in the remainder of New York State) represents a 16.2 percent decrease from the 1,200 cases reported in 2008. The decline in morbidity was greater in New York State than in the nation (16.2% and 10.6%, respectively). Since 1992, the recent peak epidemic year with 4,574 cases, New York State has experienced a 78 percent decrease compared to a national decline of 56.7 percent.
- In New York State (exclusive of New York City), the number of TB cases decreased 19.3 percent from 305 cases in 2008 to 246 cases in 2009. The number of TB cases in New York City decreased by 15.1 percent from 895 cases in 2008 to 760 cases in 2009. In 2009, the nation as a whole reported 11,540 TB cases, down from the 12,905 cases reported in 2008.
- New York State was fifth nationally with an incidence rate of 5.3 per 100,000 population in 2009. This rate is influenced by New York City, which had a TB case rate of 9.5/100,000. In contrast, New York State (exclusive of New York City) reported an incidence rate of 2.2/100,000. The national average for 2009 was 3.8/100,000.
- Three counties - Nassau, Suffolk, and Westchester - reported over half of the TB morbidity in New York State (exclusive of New York City) in 2009.
- 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 2009, the number of multidrug-resistant (MDR TB) cases in New York City decreased from 11 cases in 2008 to nine cases in 2009. In New York State (exclusive of New York City), there were five MDR TB cases in 2009, a drastic increase from the one case in 2008.
- Statewide, including New York City, the proportion of cases contributed by foreign-born individuals decreased slightly from 75.5 percent in 2008 to 74.5 percent (750 cases) in 2009, with people of Chinese origin contributing the greatest number of foreign-born TB cases (117). In New York State (exclusive of New York City), people of Indian origin contributed the greatest number of TB cases (17).

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Tuberculosis in New York State 2009

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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 2009, 1,006 new cases of tuberculosis were reported among New York State residents (Table 1, page 8). New York City reported 760 new TB cases while the rest of the state had 246.

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

1945-2009

Year	New York State (Exclusive of New York City)		New York City		New York State (Total)	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
1945	4,768	74.4	7,062	91.9	11,830	83.9
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

*Figures after 1974 include reactivated cases

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

Table 1: Tuberculosis Cases, New York State, 1945-2009

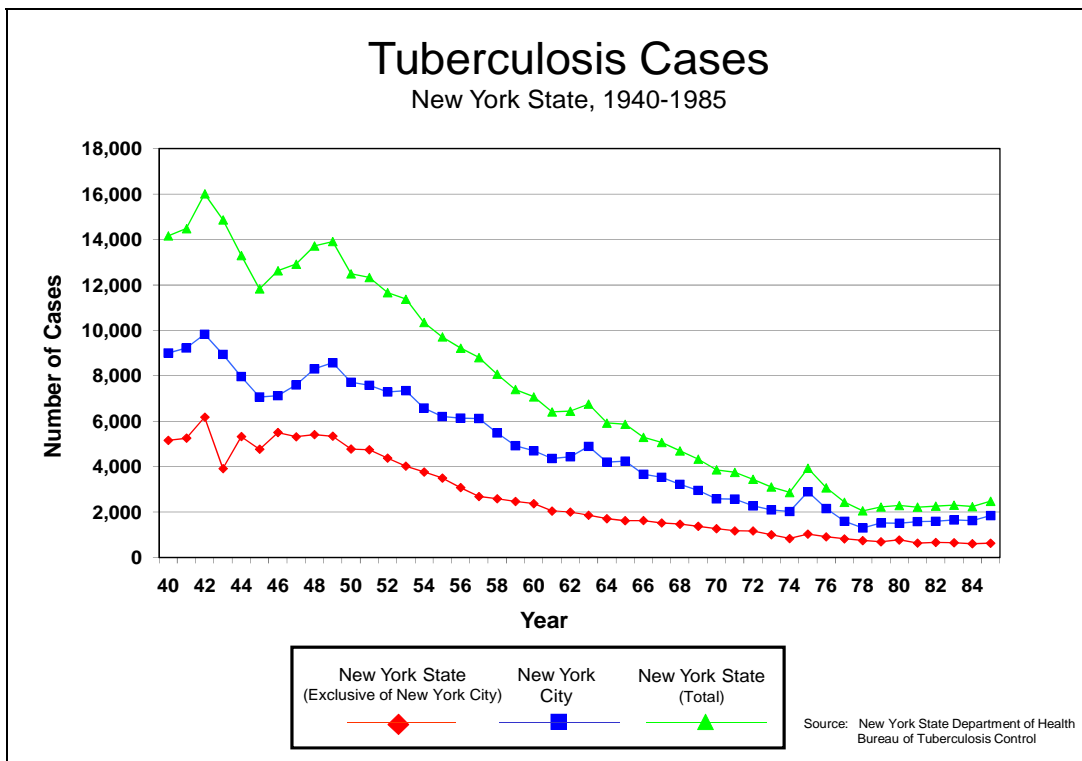


Figure 1a: Tuberculosis Cases, New York State, 1940-1985

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.

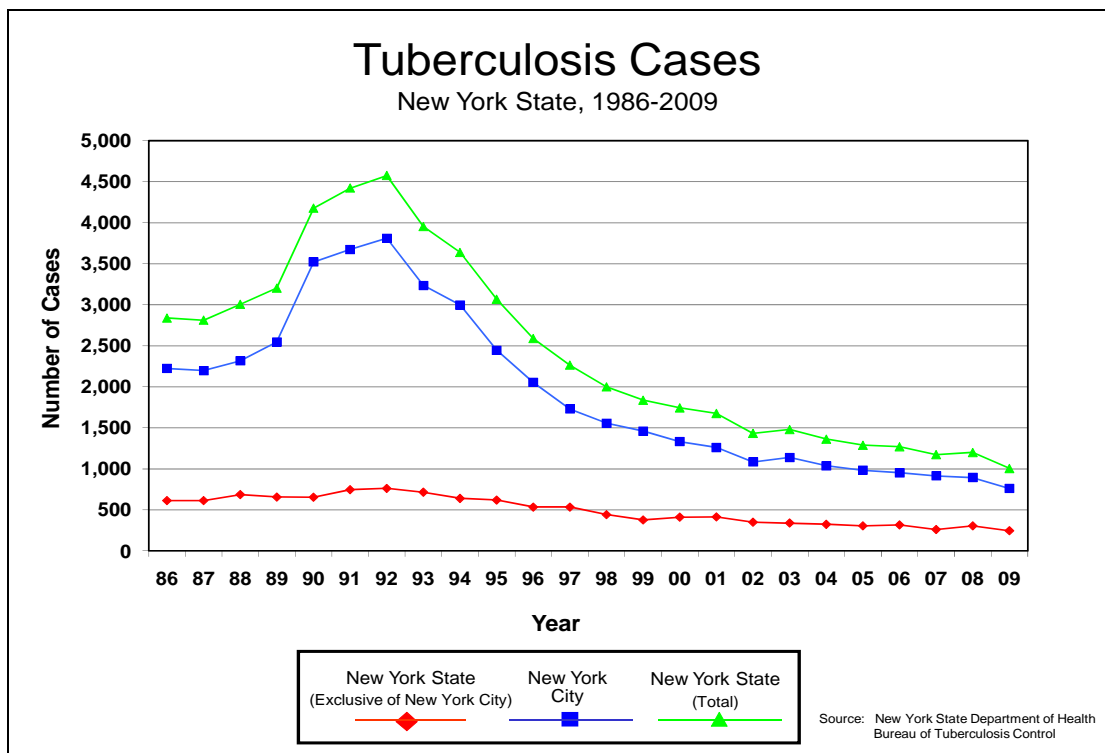


Figure 1b: Tuberculosis Cases, New York State, 1986-2009

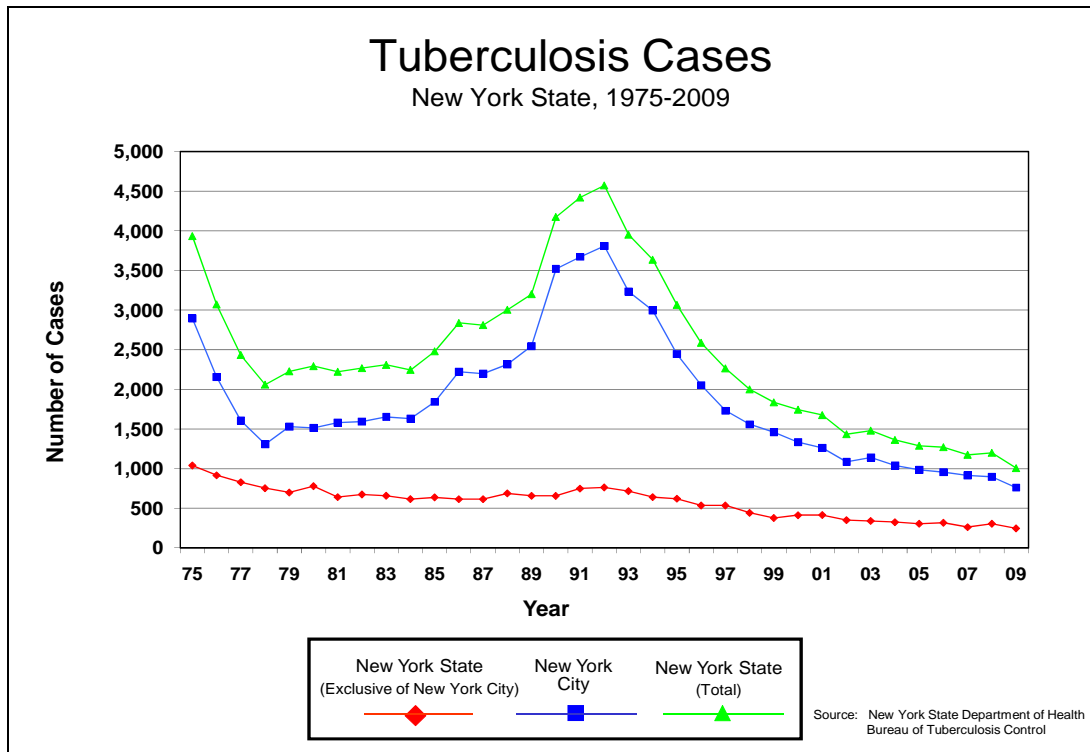


Figure 2: Tuberculosis Case Rates per 100,000 Population, New York State, 1975-2009

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 2009 TB case rate was 5.3 per 100,000 population (New York City, 9.5; New York State exclusive of New York City, 2.2). The national figure for 2009 was 3.8 per 100,000.

Distribution of Tuberculosis Cases New York State, 2009

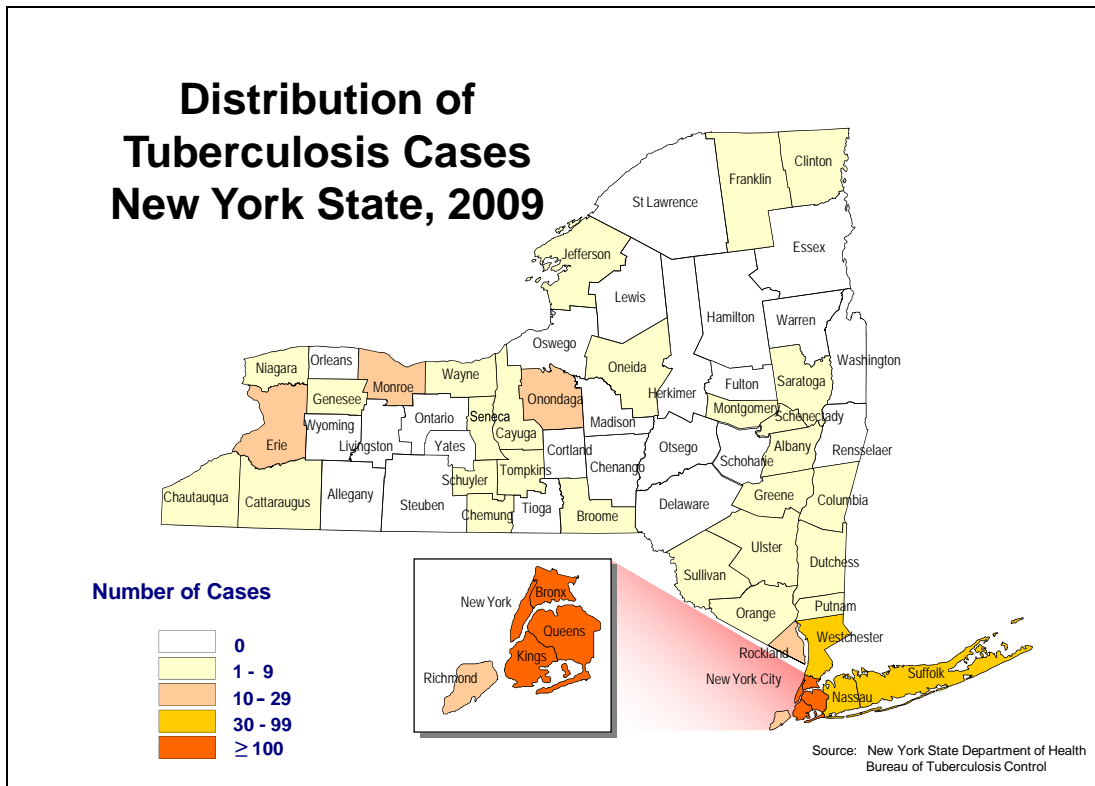


Figure 3: Distribution of Tuberculosis Cases, New York State, 2009

New York City represents 75.5 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 2009. Forty counties either had no cases or only one reported case of TB in 2009. 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, 2004-2009

	2004		2005		2006		2007		2008		2009	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Albany	5	1.7	6	2.0	8	2.7	7	2.4	4	1.4	3	1.0
Clinton	1	1.3	0	0.0	0	0.0	1	1.3	1	1.3	1	1.3
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.6
Delaware	1	2.1	0	0.0	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	3	5.9	0	0.0	0	0.0	1	2.0	2	3.9	1	2.0
Fulton	1	1.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Greene	1	2.1	1	2.1	0	0.0	0	0.0	1	2.1	1	2.1
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	1	2.0	0	0.0	0	0.0	1	2.0
Otsego	0	0.0	0	0.0	1	1.6	0	0.0	1	1.6	0	0.0
Rensselaer	2	1.3	3	2.0	1	0.7	6	3.9	0	0.0	0	0.0
Saratoga	4	2.0	2	1.0	2	1.0	1	0.5	0	0.0	3	1.5
Schenectady	2	1.4	5	3.4	6	4.1	2	1.4	0	0.0	3	2.0
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	1	1.6	0	0.0	1	1.6	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	21	1.4	18	1.2	20	1.4	18	1.2	11	0.8	14	1.0
Allegany	0	0.0	3	6.0	1	2.0	0	0.0	1	2.0	0	0.0
Cattaraugus	1	1.2	1	1.2	1	1.2	0	0.0	0	0.0	1	1.2
Chautauqua	2	1.4	2	1.4	2	1.4	0	0.0	0	0.0	1	0.7
Eric	25	2.6	11	1.2	11	1.2	9	0.9	16	1.7	14	1.5
Genesee	0	0.0	0	0.0	2	3.3	2	3.3	1	1.7	2	3.3
Niagara	1	0.5	2	0.9	4	1.8	1	0.5	2	0.9	2	0.9
Orleans	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Wyoming	0	0.0	0	0.0	0	0.0	0	0.0	1	2.3	0	0.0
Buffalo Regional Total	29	1.8	19	1.2	21	1.3	12	0.8	21	1.3	20	1.3
Chemung	1	1.1	1	1.1	1	1.1	2	2.2	2	2.2	1	1.1
Livingston	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Monroe	22	3.0	22	3.0	24	3.3	21	2.9	16	2.2	18	2.4
Ontario	4	4.0	1	1.0	1	1.0	1	1.0	1	1.0	0	0.0
Schuyler	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	5.2
Seneca	0	0.0	0	0.0	1	3.0	0	0.0	0	0.0	1	3.0
Steuben	1	1.0	1	1.0	1	1.0	1	1.0	1	1.0	0	0.0
Wayne	0	0.0	0	0.0	0	0.0	2	2.1	0	0.0	4	4.3
Yates	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rochester Regional Total	28	2.2	25	2.0	28	2.2	27	2.1	20	1.6	25	2.0
Broome	6	3.0	2	1.0	3	1.5	4	2.0	5	2.5	1	0.5
Cayuga	0	0.0	1	1.2	0	0.0	0	0.0	1	1.2	1	1.2
Chenango	0	0.0	0	0.0	1	1.9	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	3	4.7	0	0.0	1	1.6	0	0.0	0	0.0
Jefferson	0	0.0	0	0.0	1	0.9	0	0.0	1	0.9	1	0.9
Lewis	0	0.0	0	0.0	0	0.0	1	3.7	0	0.0	0	0.0
Madison	0	0.0	0	0.0	0	0.0	1	1.4	0	0.0	0	0.0
Oneida	7	3.0	6	2.5	5	2.1	6	2.5	7	3.0	5	2.1
Onondaga	13	2.8	19	4.1	13	2.8	14	3.1	22	4.8	19	4.1
Oswego	1	0.8	0	0.0	1	0.8	2	1.6	0	0.0	0	0.0
St. Lawrence	1	0.9	7	6.3	1	0.9	0	0.0	2	1.8	0	0.0
Tioga	0	0.0	0	0.0	0	0.0	2	3.9	1	1.9	0	0.0
Tompkins	4	4.1	3	3.1	1	1.0	2	2.1	2	2.1	5	5.2
Syracuse Regional Total	32	1.8	41	2.4	26	1.5	33	1.9	41	2.4	32	1.8
Dutchess	11	3.9	7	2.5	9	3.2	3	1.1	7	2.5	4	1.4
Nassau	57	4.3	53	4.0	51	3.8	48	3.6	45	3.4	38	2.8
Orange	9	2.6	3	0.9	4	1.2	7	2.1	8	2.3	1	0.3
Putnam	2	2.1	3	3.1	3	3.1	2	2.1	0	0.0	1	1.0
Rockland	23	8.0	30	10.5	26	9.1	18	6.3	24	8.4	17	5.9
Suffolk	44	3.1	50	3.5	55	3.9	44	3.1	63	4.4	51	3.6
Sullivan	2	2.7	2	2.7	0	0.0	0	0.0	0	0.0	1	1.4
Ulster	3	1.7	1	0.6	3	1.7	3	1.7	3	1.7	2	1.1
Westchester	63	6.8	53	5.7	71	7.7	46	5.0	62	6.7	40	4.3
New Rochelle Regional Total	214	4.3	202	4.1	222	4.5	171	3.5	212	4.3	155	3.1
New York State Total	324	3.0	305	2.8	317	2.9	261	2.4	305	2.8	246	2.2
<i>(Exclusive of New York City)</i>												
Bronx	177	13.3	159	11.9	165	12.4	158	11.9	149	11.2	137	10.4
Kings	314	12.7	322	13.1	291	11.8	283	11.5	264	10.7	208	8.4
New York	200	13.0	183	11.9	164	10.7	183	11.9	159	10.3	121	7.9
Queens	320	14.4	303	13.6	305	13.7	267	12.0	300	13.5	275	12.3
Richmond	28	6.3	17	3.8	28	6.3	23	5.2	23	5.2	18	4.1
New York City Total	1,039	13.0	984	12.3	953	11.9	914	11.4	895	11.2	760	9.5
State Total	1,363	7.2	1,289	6.8	1,270	6.7	1,175	6.2	1,200	6.3	1,006	5.3

*Rates based on 2000 Census

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, 2004-2009

**Tuberculosis Cases and Rates per 100,000 Population
By Age and Gender
New York State, 2009**

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	246	131	115	2.2	2.4	2.0	760	453	307	9.5	11.9	7.3	1,006	584	422	5.3	6.4	4.3
Under 5	14	4	10	2.0	1.1	2.9	14	8	6	2.6	2.9	2.3	28	12	16	2.3	1.9	2.6
5-9	3	1	2	0.4	0.2	0.5	6	4	2	1.1	1.4	0.7	9	5	4	0.7	0.7	0.6
10-14	1	0	1	0.1	0.0	0.3	6	2	4	1.1	0.7	1.5	7	2	5	0.5	0.3	0.8
15-19	7	4	3	0.9	1.0	0.8	39	20	19	7.5	7.5	7.4	46	24	22	3.6	3.6	3.5
20-24	22	11	11	3.4	3.3	3.5	57	34	23	9.7	11.9	7.6	79	45	34	6.3	7.2	5.5
25-34	45	23	22	3.2	3.3	3.2	153	75	78	11.2	11.3	11.0	198	98	100	7.2	7.2	7.1
35-44	41	19	22	2.3	2.1	2.4	132	87	45	10.4	14.2	6.9	173	106	67	5.6	7.0	4.3
45-54	27	13	14	1.8	1.7	1.8	112	71	41	11.1	15.1	7.6	139	84	55	5.4	6.8	4.1
55-64	23	14	9	2.3	2.9	1.7	99	62	37	14.5	20.3	9.8	122	76	46	7.2	9.7	5.1
65+	63	42	21	4.2	6.8	2.3	142	90	52	15.1	25.0	9.0	205	132	73	8.4	13.5	5.0

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

Table 3: Tuberculosis Cases and Rates per 100,000 Population, New York State, 2009

Twenty-eight children under the age of five were diagnosed with active TB in 2009 in New York State, an increase of 75 percent from 2008 (N=16). New York City's number of cases in this age group doubled from 7 in 2008 to 14 in 2009. For the rest of the state, the number of cases in this age group increased from 9 to 14 (55%).

The highest morbidity rates in New York City occurred in the 55-64 and over 65 year age groups (14.5 and 15.1 per 100,000, respectively). The highest rate in New York State (exclusive of New York City) occurred among those in the over 65 year age group (4.2 per 100,000). Statewide, the highest morbidity rates were found in the 25-34, 55-64, and over 65 year age groups (7.2, 7.2, and 8.4 per 100,000, respectively).

Statewide, the tuberculosis incidence rate among males was 1.5 times the female rate (6.4 compared to 4.3 per 100,000). The largest disparity by gender occurred in the over 65 year age group, where the male rate was 2.7 times the female rate (13.5 compared to 5.0 per 100,000).

Tuberculosis Cases and Rates by Gender, Age*, and Race/Ethnicity**
New York State, 2009

	New York State (Exclusive of New York City)		New York City		New York State (Total)	
	N	Rate (per 100,000)	N	Rate (per 100,000)	N	Rate (per 100,000)
GENDER						
Male	131	2.4	453	11.9	584	6.4
Female	115	2.0	307	7.3	422	4.3
AGE						
Under 5 years	14	2.0	14	2.6	28	2.3
5-9	3	0.4	6	1.1	9	0.7
10-14	1	0.1	6	1.1	7	0.5
15-19	7	0.9	39	7.5	46	3.6
20-24	22	3.4	57	9.7	79	6.3
25-34	45	3.2	153	11.2	198	7.2
35-44	41	2.3	132	10.4	173	5.6
45-54	27	1.8	112	11.1	139	5.4
55-64	23	2.3	99	14.5	122	7.2
65+	63	4.2	142	15.1	205	8.4
RACE/ETHNICITY						
White, non-Hispanic	54	0.6	68	2.4	122	1.0
Black, non-Hispanic	49	5.8	183	9.3	232	8.2
Hispanic	72	11.0	234	11.7	306	11.6
Asian	65	25.2	263	33.6	328	31.5
Native American	0	0.0	1	5.8	1	1.9
Pacific Islander	0	0.0	1	18.4	1	11.3
Multiple Races	0	0.0	3	0.8	3	0.5
Other	0	---	4	---	4	---
Unknown	6	---	3	---	9	---
TOTAL	246	2.2	760	9.5	1,006	5.3

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

** Rate calculations based on 2000 Census do not include those indicating "other race" and not checking "yes" for the Hispanic question.

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, 2009

Males accounted for approximately 58 percent of TB cases reported statewide. While the case rates among males and females were similar in New York State (exclusive of New York City), there was a larger disparity in New York City where the case rate among males was 1.6 times that of females (11.9 compared to 7.3 per 100,000).

The highest case rates statewide were found among Asians (31.5) and Hispanics (11.6).

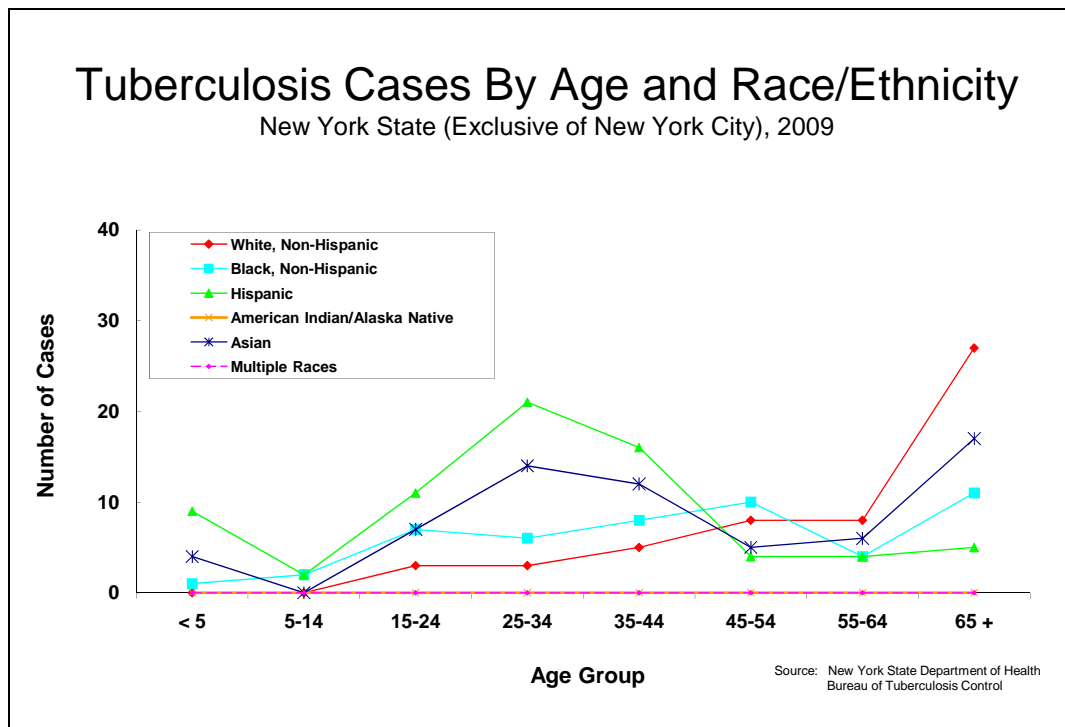


Figure 4: Tuberculosis Cases By Age and Race/Ethnicity, New York State (Exclusive of New York City), 2009

The number of TB cases among Asians peaked in the over 65 year age group (N=17), with a slightly lower peak in the 25-34 year age group (N=14). The greatest number of Hispanic cases were seen in the 25-34 year age group (N=21), while among white non-Hispanics, the highest morbidity was in the 65 years and older age group (N=27). The highest number of cases among black non-Hispanics occurred in the over 65 age group (N=11), with a similar number (N=10) in the 45-53 year age group.

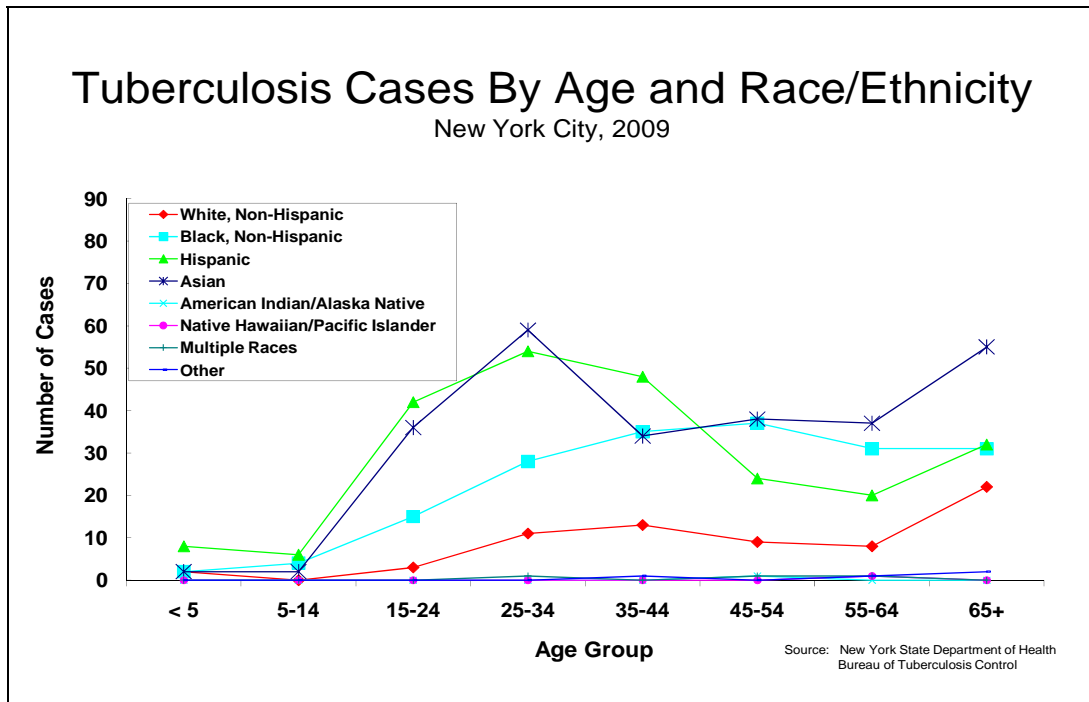


Figure 5: Tuberculosis Cases By Age and Race/Ethnicity, New York City, 2009

Comparison of the age distribution of TB cases by race/ethnicity for New York City revealed differences between Asians and Hispanics compared to whites. The number of cases among Asians and Hispanics peaked in the 25-34 year age group (N=59 and N=54, respectively). The highest morbidity among white non-Hispanics was in the 65 years and older age group (N=22), whereas black non-Hispanics experienced the greatest morbidity in the 45-54 year age group (N=37).

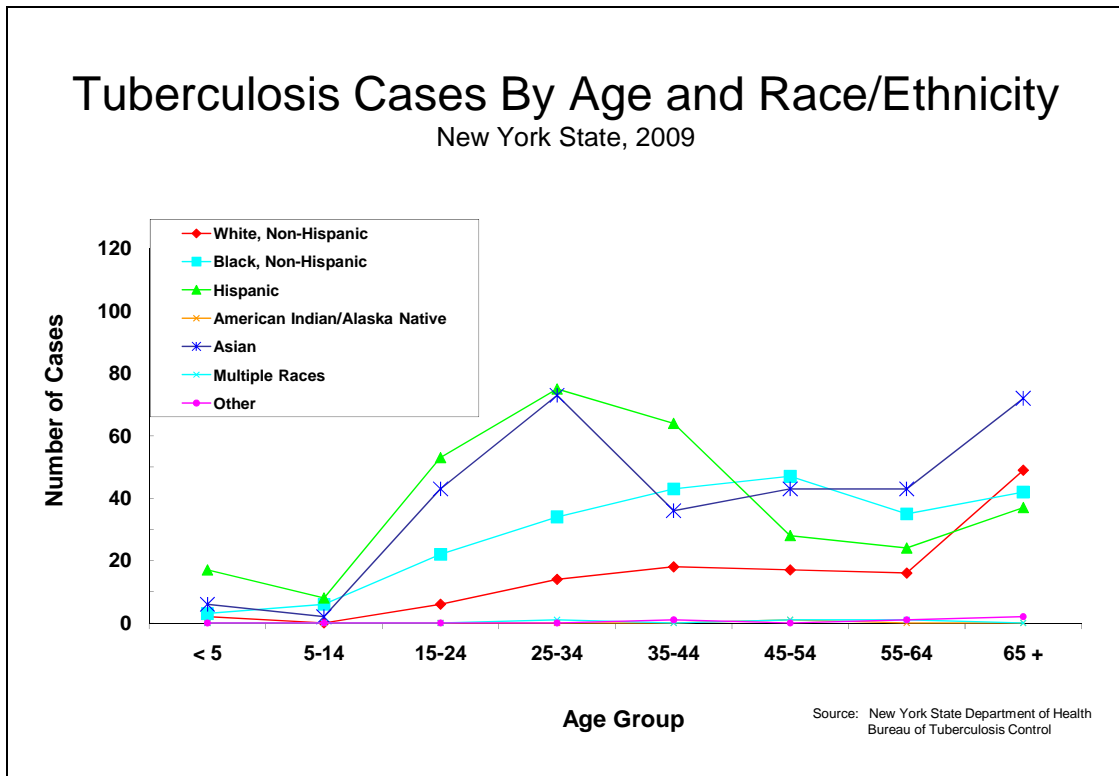


Figure 6: Tuberculosis Cases By Age and Race/Ethnicity, New York State, 2009

The largest proportion of 2009 statewide TB cases occurred among Asians (32.6 percent, N=328), followed by Hispanics (30.4 percent, N=306), non-Hispanic blacks (23.1 percent, N=232) and non-Hispanic whites (12.1 percent, N=122). Morbidity among Asians decreased substantially by 19.4 percent (407 cases in 2008 to 328 cases in 2009). Non-Hispanic blacks also showed a large decline, decreasing by 16.2 percent (277 cases in 2008 to 232 cases in 2009). The number of cases in Hispanics decreased from 366 in 2008 to 306 in 2009, and the number of cases reported as multiple races decreased from 6 in 2008 to 3 in 2009.

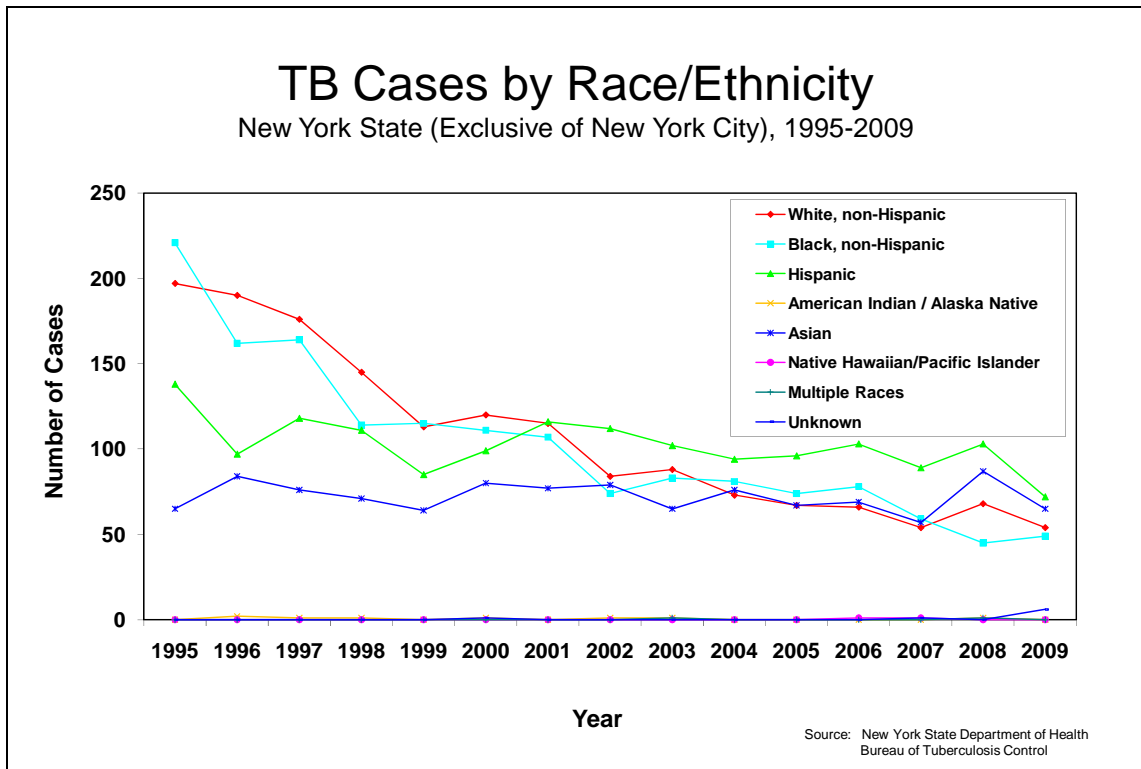
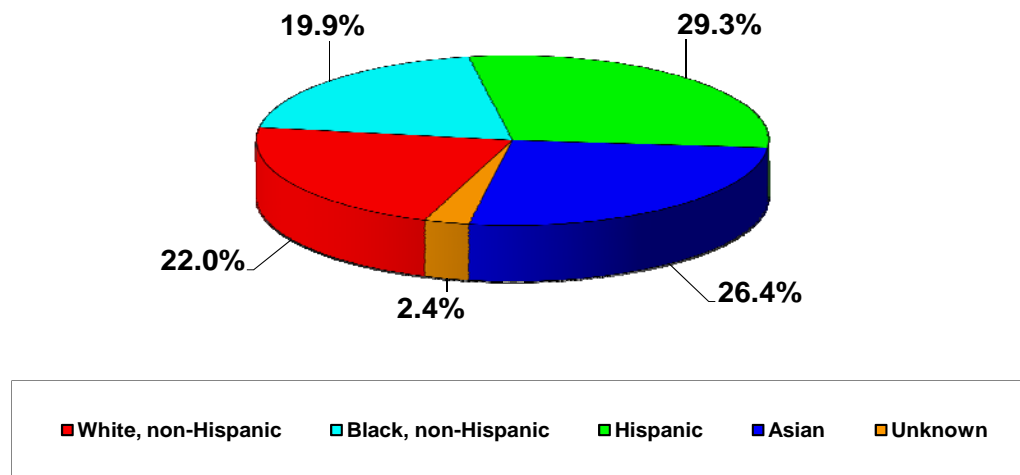


Figure 7: Racial/Ethnic Distribution of TB Cases by Year, New York State (Exclusive of New York City), 1995-2009

The number of TB cases among white and black non-Hispanics in New York State (exclusive of New York City) has decreased considerably since 1996. The number of TB cases among Hispanics has remained relatively constant over the years, with the exception of 2009 with 72 cases, the lowest morbidity in over 13 years. Despite the decrease, the proportion of TB cases contributed by Hispanics is still substantially higher in 2009 compared to 1996 (29.3 and 18.1, respectively). The proportion among white non-Hispanics decreased from 35.5 percent to 22 percent and black non-Hispanics decreased from 30.3 percent to 19.9 percent.

TB Cases by Race/Ethnicity

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



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

Figure 8: Racial/Ethnic Distribution of TB Cases, New York State (Exclusive of New York City), 2009

In New York State (exclusive of New York City), Hispanics represented the largest (29.3%) proportion of TB cases in 2009, followed by Asians with 26.4 percent. Black non-Hispanics and white non-Hispanics each represented about one-fifth of TB cases reported in 2009.

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), 2009

County	Total Number	US-Born Number	Foreign-Born Number	Foreign-Born Percent
Albany	3	1	2	66.7
Allegany	0	0	0	0.0
Broome	1	0	1	100.0
Cattaraugus	1	0	1	100.0
Cayuga	1	1	0	0.0
Chautauqua	1	1	0	0.0
Chemung	1	1	0	0.0
Chenango	0	0	0	0.0
Clinton	1	1	0	0.0
Columbia	1	1	0	0.0
Cortland	0	0	0	0.0
Delaware	0	0	0	0.0
Dutchess	4	1	3	75.0
Erie	14	9	5	35.7
Essex	0	0	0	0.0
Franklin	1	1	0	0.0
Fulton	0	0	0	0.0
Genesee	2	1	1	50.0
Greene	1	1	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	18	11	7	39.0
Montgomery	1	1	0	0.0
Nassau	38	8	30	79.0
Niagara	2	1	1	50.0
Oneida	5	1	4	80.0
Onondaga	19	4	15	79.0
Ontario	0	0	0	0.0
Orange	1	0	1	100.0
Orleans	0	0	0	0.0
Oswego	0	0	0	0.0
Otsego	0	0	0	0.0
Putnam	1	1	0	0.0
Rensselaer	0	0	0	0.0
Rockland	17	4	13	76.5
St. Lawrence	0	0	0	0.0
Saratoga	3	1	2	66.7
Schenectady	3	1	2	66.7
Schoharie	0	0	0	0.0
Schuyler	1	1	0	0.0
Seneca	1	1	0	0.0
Steuben	0	0	0	0.0
Suffolk	51	15	36	70.6
Sullivan	1	1	0	0.0
Tioga	0	0	0	0.0
Tompkins	5	2	3	60.0
Ulster	2	0	2	100.0
Warren	0	0	0	0.0
Washington	0	0	0	0.0
Wayne	4	3	1	25.0
Westchester	40	8	32	80.0
Wyoming	0	0	0	0.0
Yates	0	0	0	0.0
TOTAL	246	83	163	66.3

*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), 2009**

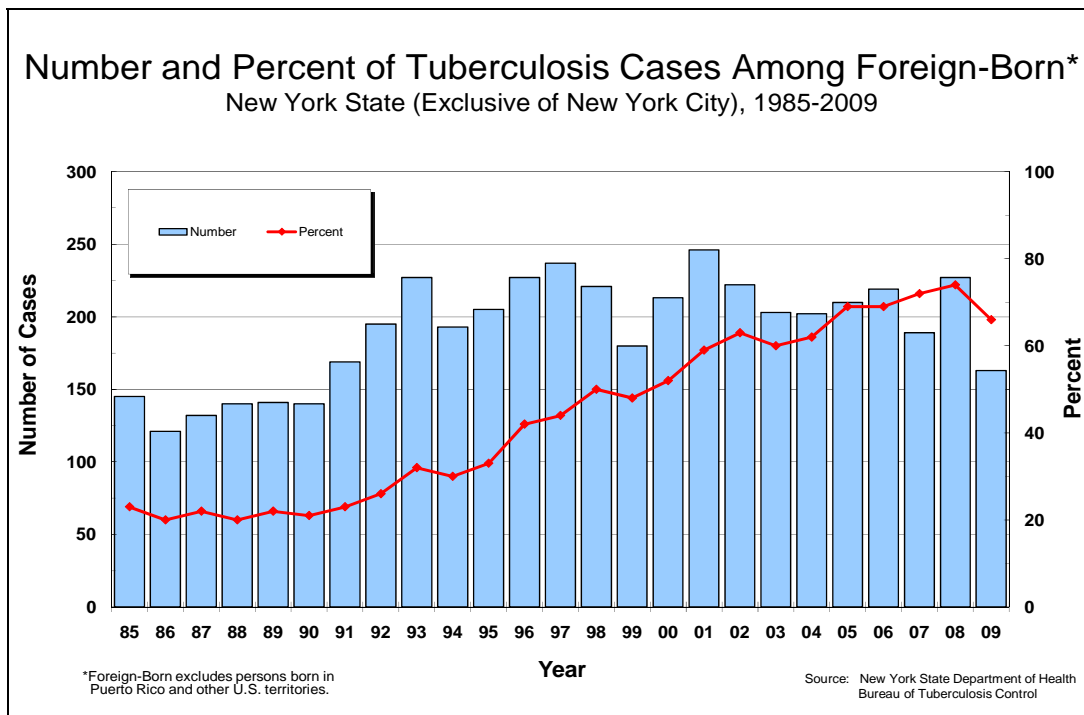


Figure 9: Number and Percent of Tuberculosis Cases Among Foreign-Born, New York State (Exclusive of New York City), 1985-2009

The overall number of foreign-born TB cases in New York State (exclusive of New York City) dramatically decreased from 227 in 2008 to 163 in 2009. The percent of TB cases reported among the foreign-born also decreased from 74.4 percent in 2008 to 66.3 in 2009. Overall, the proportion of foreign-born cases statewide decreased slightly from 75.5 percent to 74.5 percent.

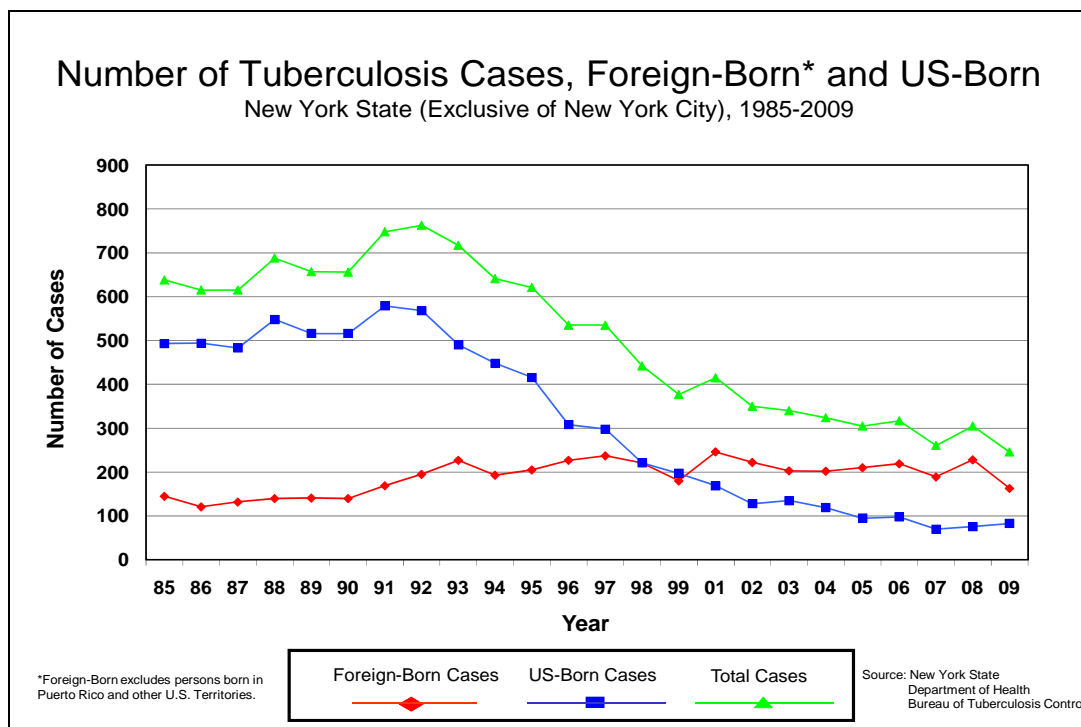


Figure 10: Number of Tuberculosis Cases, Foreign-Born and US-Born, New York State (Exclusive of New York City), 1985-2009

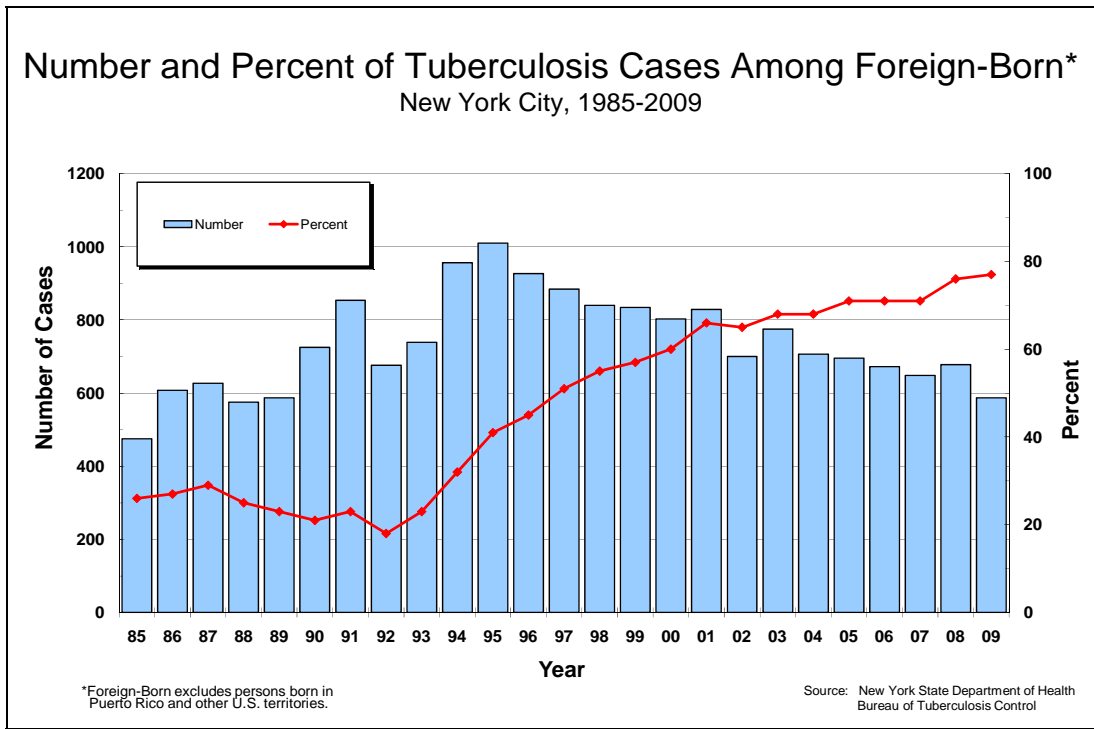


Figure 11: Number and Percent of Tuberculosis Cases Among Foreign-Born, New York City, 1985-2009

The number of TB cases reported among the foreign-born decreased from 678 in 2008 to 587 in 2009 in New York City. Despite this large decrease in number of cases, the percentage of cases increased from 76.0 percent in 2008 to 77.2 percent in 2009.

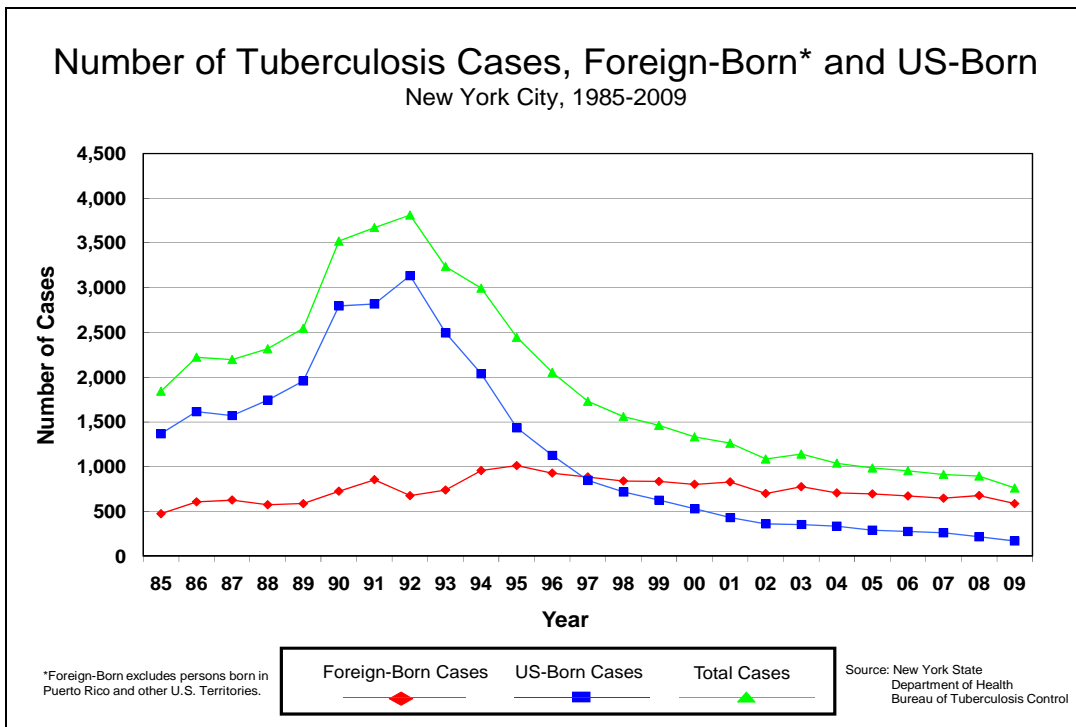


Figure 12: Number of Tuberculosis Cases, Foreign-Born and US-Born, New York City, 1985-2009

Tuberculosis Cases by Country of Origin*

New York State, 2009

	New York State (Exclusive of New York City)	New York City	New York State (Total)
United States	80	152	232
China	7	110	117
Mexico	10	43	53
Ecuador	10	42	52
India	17	32	49
Dominican Republic	4	39	43
Haiti	11	29	40
Philippines	14	25	39
Bangladesh	0	22	22
Pakistan	8	12	20
Puerto Rico**	3	17	20
Honduras	7	12	19
Nepal	0	18	18
Peru	9	8	17
Guyana	2	13	15
Guatemala	4	9	13
Korea, Republic of	0	13	13
El Salvador	8	4	12
Burma	5	6	11
Vietnam	6	5	11
Guinea	1	9	10
Poland	3	5	8
Ukraine	2	6	8
Colombia	0	7	7
Nigeria	0	6	6
Ethiopia	2	3	5
Hong Kong	0	5	5
Yemen	1	4	5
Other Countries	32	100	132
Unknown	0	4	4
Total	246	760	1,006

* 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, 2009

Tuberculosis Cases by World Region of Origin
New York State (Exclusive of New York City), 2004-2009

REGION	2004	2005	2006	2007	2008	2009
Africa	15	18	27	21	17	13
East Asia	32	41	34	31	48	35
Caribbean/South and Central America/Mexico	96	108	111	93	101	69
Europe	18	16	11	15	19	13
India/Pakistan/Middle East	40	27	36	29	42	33
United States/Canada*	120	95	98	72	77	83
TOTAL	321	305	317	261	304	246

* 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), 2009

In New York State (exclusive of New York City), the greatest percentage of TB cases originated from the United States or Canada (33.7%). The last time this occurred was 2004 (37.4%). Between 2008 and 2009, with the exception of the United States and Canada, every world region experienced a decrease in overall number of TB cases, but the percentage of cases contributed from the each region remained similar.

Tuberculosis Cases and Rates per 100,000 Population

**Total Number and Rate; Number and Rate in General Population; Number of DOCS* Inmates
New York State Counties (Exclusive of New York City), 2009**

County	2000 Census Population	Total Number	Rate per 100,000	General Pop. Number	General Pop. Rate	Inmate Number
Albany	294,565	3	1.02	3	1.02	0
Allegany	49,927	0	0.00	0	0.00	0
Broome	200,536	1	0.50	1	0.50	0
Cattaraugus	83,955	1	1.19	1	1.19	0
Cayuga	81,963	1	1.22	1	1.22	0
Chautauqua	139,750	1	0.72	1	0.72	0
Chemung	91,070	1	1.10	1	1.10	0
Chenango	51,401	0	0.00	0	0.00	0
Clinton	79,894	1	1.25	1	1.25	0
Columbia	63,094	1	1.58	1	1.58	0
Cortland	48,599	0	0.00	0	0.00	0
Delaware	48,055	0	0.00	0	0.00	0
Dutchess	280,150	4	1.43	4	1.43	0
Erie	950,265	14	1.47	14	1.47	0
Essex	38,851	0	0.00	0	0.00	0
Franklin	51,134	1	1.96	1	1.96	0
Fulton	55,073	0	0.00	0	0.00	0
Genesee	60,370	2	3.31	2	3.31	0
Greene	48,195	1	2.07	1	2.07	0
Hamilton	5,379	0	0.00	0	0.00	0
Herkimer	64,427	0	0.00	0	0.00	0
Jefferson	111,738	1	0.89	1	0.89	0
Lewis	26,944	0	0.00	0	0.00	0
Livingston	64,328	0	0.00	0	0.00	0
Madison	69,441	0	0.00	0	0.00	0
Monroe	735,343	18	2.45	18	2.45	0
Montgomery	49,708	1	2.01	1	2.01	0
Nassau	1,334,544	38	2.85	38	2.85	0
Niagara	219,846	2	0.91	2	0.91	0
Oneida	235,469	5	2.12	5	2.12	0
Onondaga	458,336	19	4.15	19	4.15	0
Ontario	100,224	0	0.00	0	0.00	0
Orange	341,367	1	0.29	1	0.29	0
Orleans	44,171	0	0.00	0	0.00	0
Oswego	122,377	0	0.00	0	0.00	0
Otsego	61,676	0	0.00	0	0.00	0
Putnam	95,745	1	1.04	1	1.04	0
Rensselaer	152,538	0	0.00	0	0.00	0
Rockland	286,753	17	5.93	17	5.93	0
St. Lawrence	111,931	0	0.00	0	0.00	0
Saratoga	200,635	3	1.50	3	1.50	0
Schenectady	146,555	3	2.05	3	2.05	0
Schoharie	31,582	0	0.00	0	0.00	0
Schuyler	19,224	1	5.20	1	5.20	0
Seneca	33,342	1	3.00	0	0.00	1
Steuben	98,726	0	0.00	0	0.00	0
Suffolk	1,419,369	51	3.59	51	3.59	0
Sullivan	73,966	1	1.35	1	1.35	0
Tioga	51,784	0	0.00	0	0.00	0
Tompkins	96,501	5	5.18	5	5.18	0
Ulster	177,749	2	1.13	2	1.13	0
Warren	63,303	0	0.00	0	0.00	0
Washington	61,042	0	0.00	0	0.00	0
Wayne	93,765	4	4.27	4	4.27	0
Westchester	923,459	40	4.33	40	4.33	0
Wyoming	43,424	0	0.00	0	0.00	0
Yates	24,621	0	0.00	0	0.00	0
TOTAL	10,968,179	246	2.24	245	2.23	1

*New York State Department of Correctional Services

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), 2009**

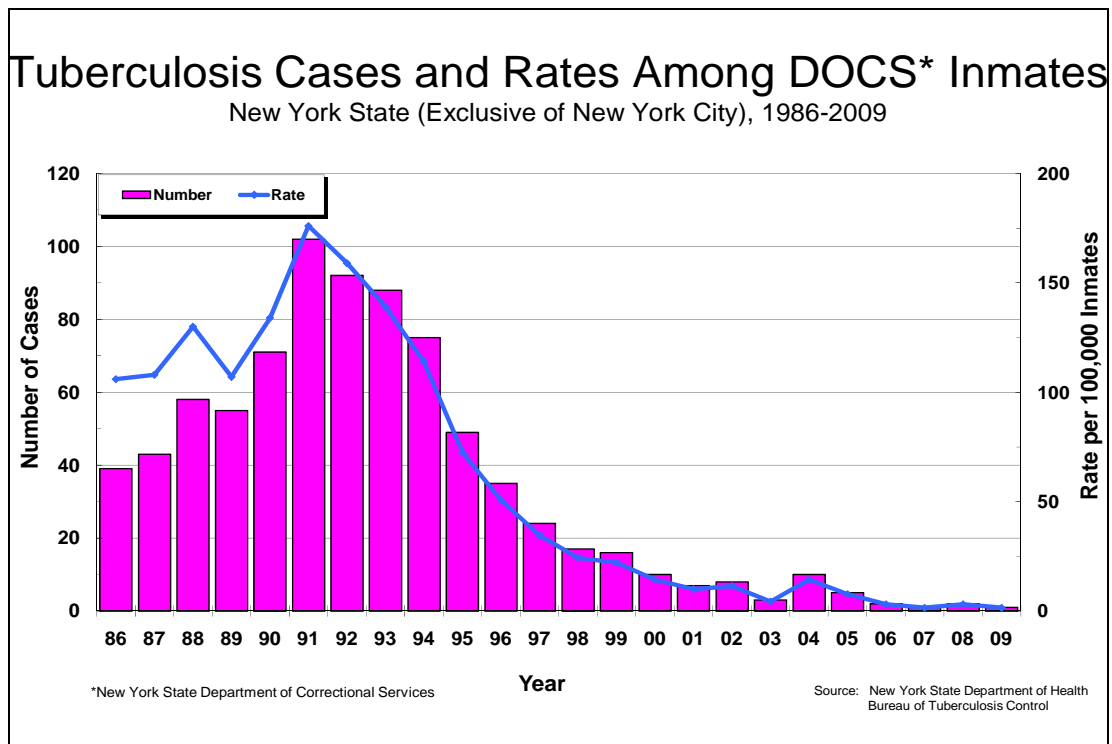


Figure 13: Tuberculosis Cases and Rates Among DOCS Inmates, New York State (Exclusive of New York City), 2009

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 Correctional Services (DOCS) inmate population. Among the DOCS inmate population, there has been a notable decline in cases since 1991 when 102 new cases (176 per 100,000 inmates) were reported. In 2009, one new case was reported (1.5 per 100,000 inmates). Traditionally, DOCS inmate cases have a wide geographical distribution across New York State and reflect mainly facility locations and DOCS policies on periodic relocation of inmates.

HIV Status Among Tuberculosis Patients

New York State (Exclusive of New York City), 2005-2009

HIV STATUS	2005		2006		2007		2008		2009	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Negative	176	(57.7)	185	(58.4)	174	(66.7)	222	(72.8)	163	(66.3)
Positive	23	(7.5)	26	(8.2)	17	(6.5)	19	(6.2)	11	(4.5)
Unknown	106	(34.8)	106	(33.4)	70	(26.8)	64	(21.0)	72	(29.3)
TOTAL	305	(100.0)	317	(100.0)	261	(100.0)	305	(100.0)	246	(100.0)

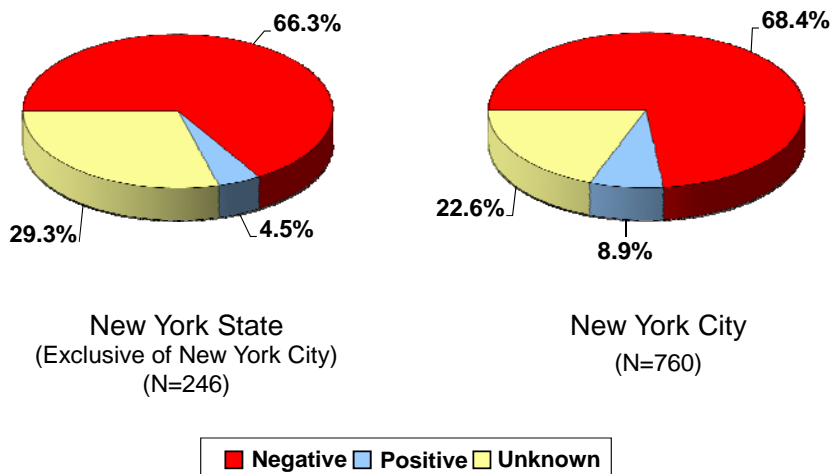
Source: New York State Department of Health
Bureau of Tuberculosis Control

Table 9: HIV Status Among Tuberculosis Patients, New York State (Exclusive of New York City), 2005-2009

Knowledge of HIV status is improving among individuals with active TB in the general population in New York State (exclusive of New York City), as evidenced by a steady decline in the percent of TB patients with unknown HIV status. Previous comparisons between the HIV and TB registries suggest the high 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. Despite the consistent decrease in unknown HIV status in prior years, in 2009 there was an 8.3 percent increase in the number of patients with an unknown HIV status compared to 2008 (29.3% and 21.0%, respectively).

HIV Status Among Tuberculosis Cases

New York State, 2009



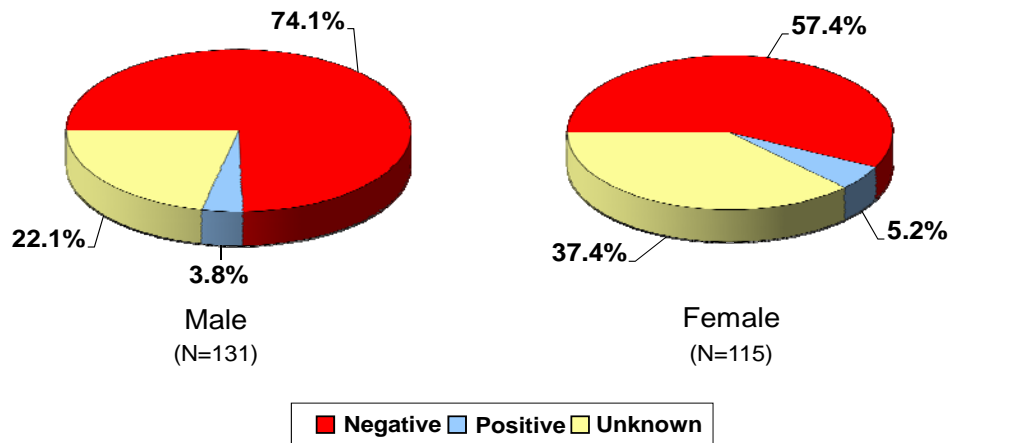
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 14: HIV Status Among Tuberculosis Cases, New York State, 2009

In New York City, 77.4 percent of TB patients in 2009 were HIV tested and had results reported to the TB registry: 8.9 percent were HIV positive and 68.4 percent were HIV negative. In New York State (exclusive of New York City), 70.7 percent of TB patients were tested for HIV with results reported: 4.5 percent were HIV positive and 66.3 were HIV negative.

HIV Status Among Tuberculosis Cases By Gender

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



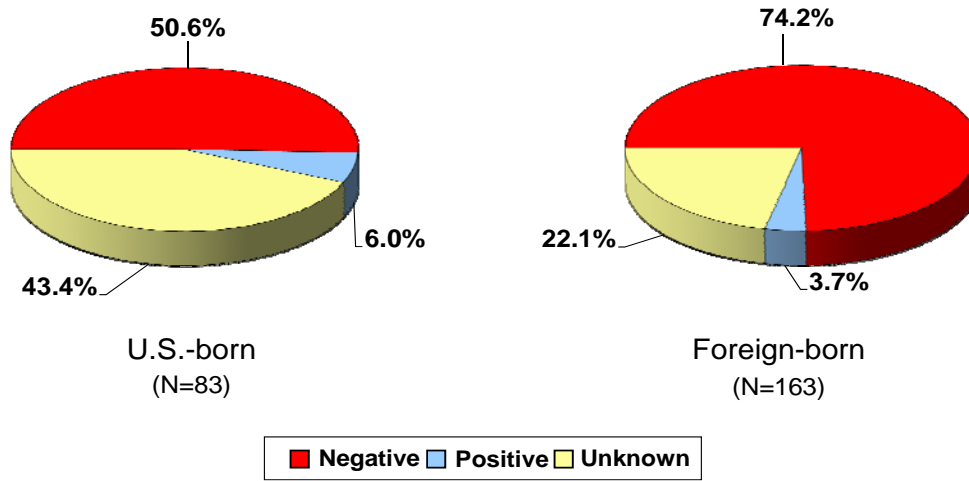
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 15: HIV Status Among Tuberculosis Cases By Gender, New York State (Exclusive of New York City), 2009

In 2009, approximately 37 percent (N=43) of female TB cases had an unknown HIV status and slightly more than 22 percent (N=29) of males had an unknown HIV status. Although the percentage of TB cases co-infected with HIV was higher among females than males (5.2% and 3.8%, respectively), the number of cases was similar (N=6 for females, N=5 for males).

HIV Status Among Tuberculosis Cases U.S. vs. Foreign-Born

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



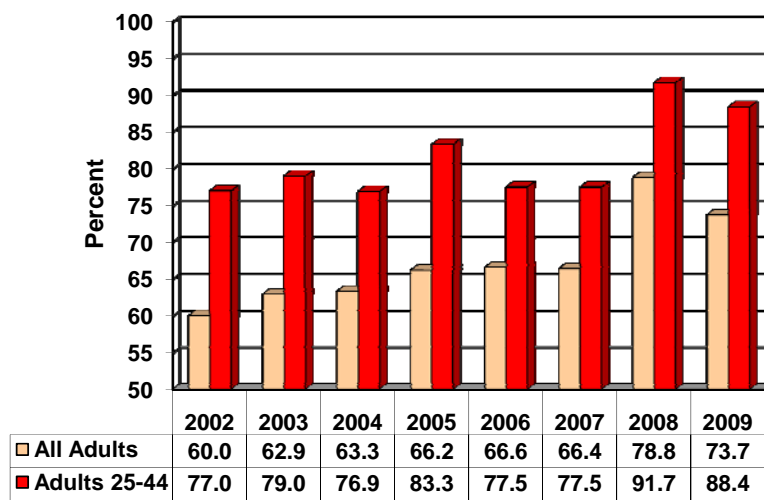
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 16: HIV Status Among Tuberculosis Cases, U.S. vs. Foreign-Born, New York State (Exclusive of New York City), 2009

A greater percentage of foreign-born TB cases (77.9%, N=127) reported a known HIV status, than U.S.-born (56.6%, N=47). 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 even though there was only one case difference between the two populations (43.4%, N=36 US-born and 22.1%, N=35 for foreign-born cases).

Percent of Adults with TB Who Were Tested for HIV

New York State (Exclusive of New York City), 2002-2009



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

Figure 17: Proportion of Adults with TB Who Were Tested for HIV, New York State (Exclusive of New York City), 2002-2009

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. Despite a consistent increase in HIV testing among persons with TB in recent years, only 73.7 percent of all adults with TB had a known HIV status in 2009. In the 25-44 year age group, the percentage of adult TB cases with a known HIV status (88.4) was much higher and met the New York State objective for 2009 (85%).

Primary Reason For Evaluation of Tuberculosis Cases

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

PRIMARY REASON FOR EVALUATION	Non-MDR		MDR	
	No.	(%)	No.	(%)
TB Symptoms	112	(46.5)	2	(40.0)
Abnormal Chest Radiograph	53	(22.0)	1	(20.0)
Incidental Lab Result	36	(14.9)	1	(20.0)
Targeted Testing	9	(3.7)	0	(0.0)
Contact Investigation	8	(3.3)	0	(0.0)
Immigration Medical Exam	4	(1.7)	0	(0.0)
Employment/Administrative Testing	1	(0.4)	0	(0.0)
Health Care Worker	1	(0.4)	0	(0.0)
Unknown	12	(5.0)	1	(20.0)
No Information Provided	5	(2.1)	0	(0.0)
TOTAL	241	(100.0)	5	(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), 2009

Forty percent 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 incidental lab result were also cited as reasons for evaluation of these MDR cases.

Of the 241 non-MDR TB cases diagnosed in 2009, nearly half (46.5%) were evaluated as a result of presenting with TB symptoms. Similar to the MDR cases, other common reasons for evaluation included an abnormal chest radiograph (N=53, 22.0%) and an incidental lab result (N=36, 14.9%).

Additional Risk Factors Among Tuberculosis Cases by Gender

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

ADDITIONAL RISK FACTOR	Male		Female		Total	
	No.	(%)	No.	(%)	No.	(%)
None	69	(52.7)	54	(47.0)	123	(50.0)
Diabetes Mellitus	11	(8.4)	5	(4.3)	16	(6.5)
Contact of an Infectious TB Patient*	3	(2.3)	9	(7.8)	12	(4.9)
Immunosuppression (not HIV/AIDS)	6	(4.6)	4	(3.5)	10	(4.1)
Incomplete LTBI Therapy	2	(1.5)	6	(5.2)	8	(3.3)
End-Stage Renal Disease	1	(0.8)	2	(1.7)	3	(1.2)
TNF-alpha Antagonist Therapy	1	(0.8)	1	(0.9)	2	(0.8)
Contact of an MDR TB Patient*	1	(0.8)	0	(0.0)	1	(0.4)
Missed Contact*	0	(0.0)	1	(0.9)	1	(0.4)
Post-organ Transplantation	0	(0.0)	1	(0.9)	1	(0.4)
Multiple Factors	6	(4.6)	2	(1.7)	8	(3.3)
Other	3	(2.3)	2	(1.7)	5	(2.0)
Unknown	28	(21.4)	28	(24.3)	56	(22.8)
TOTAL	131	(100.0)	115	(100.0)	246	(100.0)

*Within the past 2 years.

LTBI = Latent Tuberculosis Infection.

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

Table 11: Additional TB Risk Factors for Cases by Gender, New York State (Exclusive of New York City), 2009

Aside from the commonly collected factors (i.e. HIV status, drug/alcohol usage, occupation, country of birth), 27.2 percent (N=123) 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 2009. Overall, the most commonly reported factors were diabetes (N=15, 6.1%) and being a contact to an infectious TB patient (N=12, 4.9%).

Diabetes was cited as an additional risk factor in twice as many male TB patients as female patients (N=10 and N=5, respectively). Five percent (N=6) of females reported incomplete therapy for latent tuberculosis infection (LTBI) compared to 1.5 percent (N=2) of males. Females were also more commonly identified as contacts to infectious TB patients compared to males (N=9, 7.8% for females, N=3, 2.3% for males).

Diabetes was the most frequently identified condition reported in combination with other factors (post-organ transplantation [N=1], end-stage renal disease [N=1], immunosuppression [N=1], being a missed contact [N=1], or being a contact of an infectious TB patient [N=1]).

**Drug Susceptibility Test Results
Among Culture Confirmed Tuberculosis Cases
General Population vs State Inmates
New York State (Exclusive of New York City), 2007-2009**

	2007			2008			2009											
	General Population		Inmate Population	General Population		Inmate Population	General Population		Inmate Population	Total Population								
	No.	(%)	No. (%)	No.	(%)	No.	(%)	No.	(%)	No. (%)								
Susceptibility test reported	188		0	188		225	2	227		180	1	181						
Susceptible to all first-line drugs	164	(87.2)	0	(0.0)	164	(87.2)	190	(84.4)	2	(100.0)	192	(84.6)	151	(83.9)	1	(100.0)	152	(84.0)
Resistant to INH and RIF (MDR TB)	0	(0.0)	0	(0.0)	0	(0.0)	1	(0.4)	0	(0.0)	1	(0.4)	5	(2.8)	0	(0.0)	5	(2.8)
INH resistant and RIF susceptible	16	(8.5)	0	(0.0)	16	(8.5)	20	(8.9)	0	(0.0)	20	(8.8)	16	(8.9)	0	(0.0)	16	(8.8)
RIF resistant and INH susceptible	0	(0.0)	0	(0.0)	0	(0.0)	3	(1.3)	0	(0.0)	3	(1.3)	0	(0.0)	0	(0.0)	0	(0.0)
Resistant to first-line drugs other than INH and RIF	8	(4.3)	0	(0.0)	8	(4.3)	11	(4.9)	0	(0.0)	11	(4.8)	8	(4.4)	0	(0.0)	8	(4.4)

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 Inmates, New York State (Exclusive of New York City), 2007-2009

In 2009, drug susceptibility tests were performed on 99.5 percent (N=181/182) of culture-positive TB cases in New York State (exclusive of New York City). MDR TB was identified in five cases, a significant increase compared to the prior two years. In 2009, 16 culture-positive cases were resistant to isoniazid (INH), a 20 percent decrease from the 20 cases in 2008. No rifampin (RIF) resistant cases were reported in 2009. One new culture positive case was reported among state inmates in 2009. This case was susceptible to all first-line drugs.

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

New York State (Exclusive of New York City), 2007-2009

	2007			2008			2009		
	US-Born Population		Total Population	US-Born Population		Total Population	US-Born Population		Total Population
	No.	(%)		No.	(%)		No.	(%)	
Susceptibility test reported	55		188	50	176	227	57	124	181
Susceptible to all first-line drugs	49	(89.1)	164	46	(92.0)	191	47	(82.5)	152
Resistant to INH and RIF (MDR TB)	0	(0.0)	0	0	(0.0)	1	2	(3.5)	5
INH resistant and RIF susceptible	5	(9.1)	16	2	(4.0)	20	4	(7.0)	16
RIF resistant and INH susceptible	0	(0.0)	0	0	(0.0)	3	0	(0.0)	0
Resistant to first-line drugs other than INH and RIF	1	(1.8)	8	2	(4.0)	11	4	(7.0)	8

*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), 2007-2009

In 2009, 60 percent of cases with MDR TB were foreign-born (N=3/5). Only 25 percent of patients with TB susceptible to rifampin (RIF) yet resistant to isoniazid (INH) were U.S.-born (N=4/16). The percentage of U.S.-born cases resistant to first-line drugs other than RIF and INH increased between 2007 and 2009 while the percentage among foreign-born cases decreased.

Drug Susceptibility Test Results MDR TB

New York State (Exclusive of New York City), 2004-2009

	2004	2005	2006	2007	2008	2009
Culture Positive	256	236	239	191	229	182
Susceptibility Test Reported	256	236	238	188	227	181
Resistant to INH and RIF (MDR TB)*	6 (2.3%)	3 (1.3%)	3 (1.3%)	0 (0.0%)	1 (0.4%)	5 (2.8%)

*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), 2004-2009

In New York State (exclusive of New York City), susceptibility results were reported for 99.5 percent (N=181/182) of culture-positive cases in 2009. There were five MDR cases, constituting the highest percentage of cases over the last six years.

Drug Susceptibility Test Results MDR TB

New York City, 2004-2009

	2004	2005	2006	2007	2008	2009
Culture Positive	798	745	553	709	688	539
Susceptibility Test Reported	787	738	549	702	680	534
Resistant to INH and RIF (MDR TB)*	18 (2.3%)	24 (3.3%)	18 (3.3%)	9 (1.0%)	11 (2.0%)	9 (1.7%)

*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, 2004-2009

In New York City in 2009, susceptibility results were reported for 99.1 percent (N=534/539) of culture-positive TB cases. The number of MDR TB cases decreased from 11 in 2008 to 9 in 2009.

Tuberculosis Genotyping Summary by Year
New York State (Exclusive of New York City), 2007-2009

	2007		2008		2009	
	No.	(%)	No.	(%)	No.	(%)
Initial Positive Cultures	202		233		188	
False Positives	12	(5.9)	5	(2.1)	5	(2.7)
Control Strain	7	(3.5)	2	(0.9)	0	(0.0)
Contamination	4	(2.0)	0	(0.0)	1	(0.5)
M. bovis BCG	1	(0.5)	3	(1.3)	4	(2.1)
True Positives	190	(94.1)	228	(97.9)	183	(97.3)
Isolates Available	188		216		182	
Complete Genotype*	126	(67.0)	95	(44.0)	147	(80.8)
Partial Genotype	42	(22.3)	117	(54.2)	165	(90.7)
No Result	22	(11.7)	4	(1.9)	17	(9.3)

*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), 2007-2009

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 New York State Wadsworth Center. In addition, the CDC-sponsored National Tuberculosis Genotyping regional lab in Michigan performed mycobacterial interspersed repetitive unit (MIRU) and spoligotyping. In 2009, 99.5 percent (N=182/183) of isolates were available for genotyping. Of the 182 isolates available, 147 (80.8%) had both a spoligotype and MIRU result available. Due to diminishing resources, RFLP was no longer performed on all specimens.

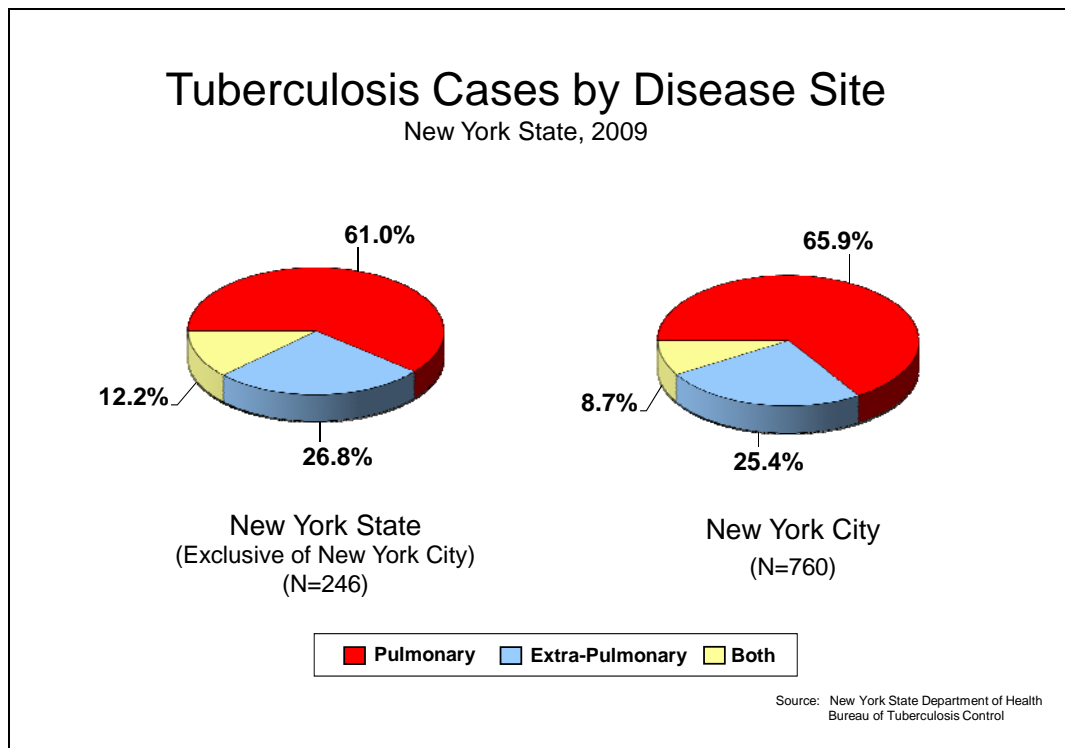


Figure 18: Tuberculosis Cases by Primary Disease Site, New York State, 2009

Pulmonary TB was the primary site of disease in 64.7 percent (N=651) of cases reported in New York State in 2009. Compared to 2008, this was 28.3 percent fewer pulmonary TB cases (N=908).

Sixty-one percent (N=150) of TB cases in New York State (exclusive of New York City) were reported to have pulmonary TB in 2009, a 37.8 percent decline compared to the 241 cases reported in 2008. In New York City, the number of pulmonary TB cases declined 24.9 percent, from 667 in 2008 to 501 in 2009.

Of the TB cases in New York State (exclusive of New York City) with extra-pulmonary TB disease (N=66, 26.8%), the most common sites of disease were lymphatic (N=28, 43.1%), pleural (N=10, 15.4%), and bone (N=10, 15.4%). Similar results were observed in New York City, with 47.6 percent (N=92) of extrapulmonary sites being lymphatic, 11.9 percent (N=23) pleural, and 9.8 percent (N=19) bone.

Treatment Status of Tuberculosis Cases Reported in 2008*

New York State (Exclusive of New York City)

TREATMENT STATUS	Non-MDR		MDR	
	No.	(%)	No.	(%)
Completed	262	(88.8)	1	(100.0)
Prolonged Therapy	5	(1.7)	0	(0.0)
Died	14	(4.8)	0	(0.0)
Uncooperative/Refused	2	(0.7)	0	(0.0)
Lost	9	(3.1)	0	(0.0)
Moved to Another Jurisdiction	3	(1.0)	0	(0.0)
Other or Unknown	0	(0.0)	0	(0.0)
TOTAL	295	(100.0)	1	(100.0)

*Excludes patients found not to have TB and those who were reported at death.
MDR TB = Multidrug-resistant TB

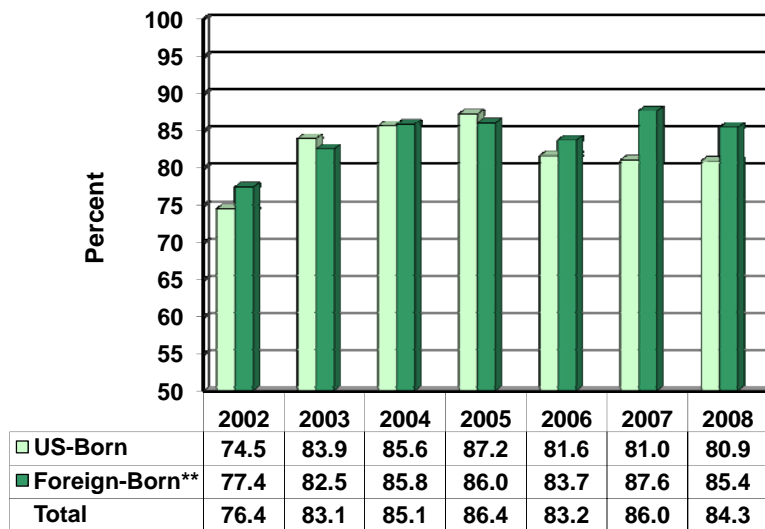
Source: New York State Department of Health
Bureau of Tuberculosis Control

Table 17: Treatment Status of Tuberculosis Cases, New York State (Exclusive of New York City), 2008

Of the 295 non-MDR TB cases who were alive at diagnosis in 2008 (the most recent year for which complete information is available), 88.8 percent completed a full course of therapy with a completion index of 94.2 (completion index = number completed / [number alive at diagnosis - number died on treatment - number moved out of jurisdiction]*100).

Percent of TB Patients Who Complete Treatment Within 12 Months*

New York State (Exclusive of New York City), 2002-2008



* Among those eligible to complete within 12 months.

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

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

Figure 19: Percent of TB Patients who Complete Treatment within 12 Months, New York State (Exclusive of New York City), 2002-2008

For 2008 (the most recent year for which complete information is available), 84.3 percent (N=236/280) of patients eligible*** to complete treatment within 12 months, did so. This is less than the national objective of 90 percent and the 2008 NYS objective (88%). An additional 8.6 percent (N=24/280) of patients completed treatment in more than 12 months, for an overall completion rate of 92.9 percent.

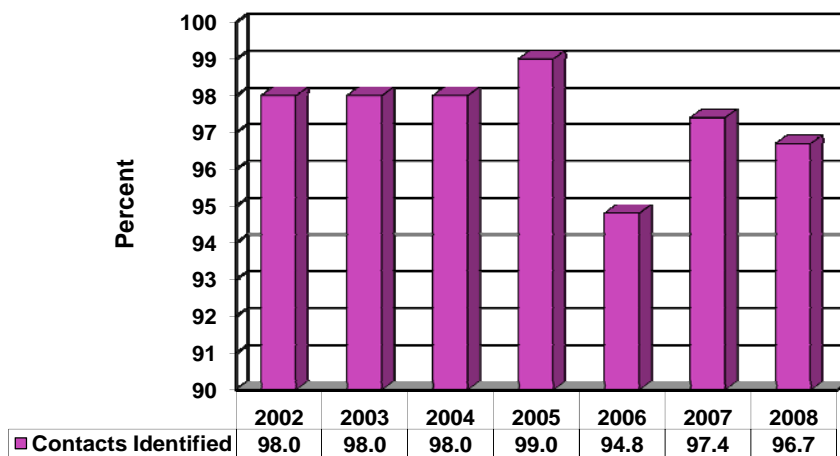
A larger percentage of foreign-born patients completed therapy within 12 months than U.S.-born in 2008 (85.4% and 80.9%, respectively).

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 bone or miliary TB are excluded along with those dead at diagnosis or who died while on treatment.

Percent of Infectious TB Cases With Contacts Identified

New York State (Exclusive of New York City), 2002-2008



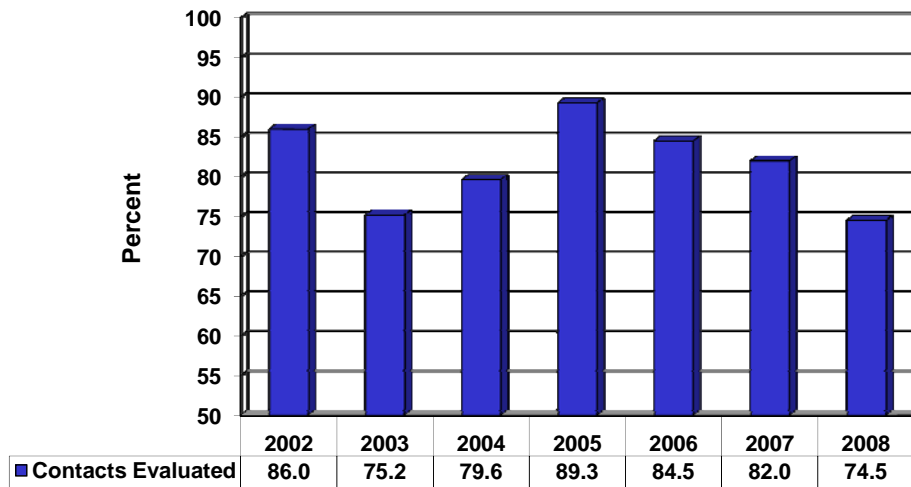
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 20: Percent of Infectious TB Cases with Contacts Identified, New York State (Exclusive of New York City), 2002-2008

In 2008 (the most recent year for which complete information is available), 96.7 percent (N=89) of infectious TB cases had contacts identified. This represents a decrease from the 97.4 percent (N=76) for whom contacts were identified in 2007. Reasons contacts were not identified in recent years include: in U.S. less than 24 hours when case reported, homelessness, patient refusing to identify contacts, and being in federal custody.

Percent of Contacts to Infectious TB Cases Evaluated for LTBI

New York State (Exclusive of New York City), 2002-2008



LTBI = Latent Tuberculosis Infection.

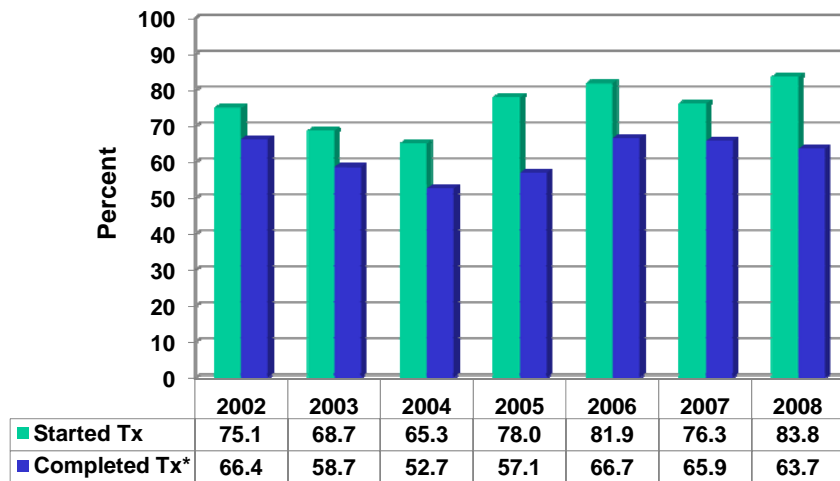
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 21: Percent of Contacts to Infectious TB Cases Evaluated for LTBI, New York State (Exclusive of New York City), 2002-2008

Seventy-five percent (N=2,645) of contacts to infectious TB cases were evaluated for LTBI in 2008 (the most recent year for which complete information is available). This represents a decrease from the 82 percent (N=3,322) evaluated in 2007 and does not meet our state objective of 90 percent.

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

New York State (Exclusive of New York City), 2002-2008



*Among those who started treatment.

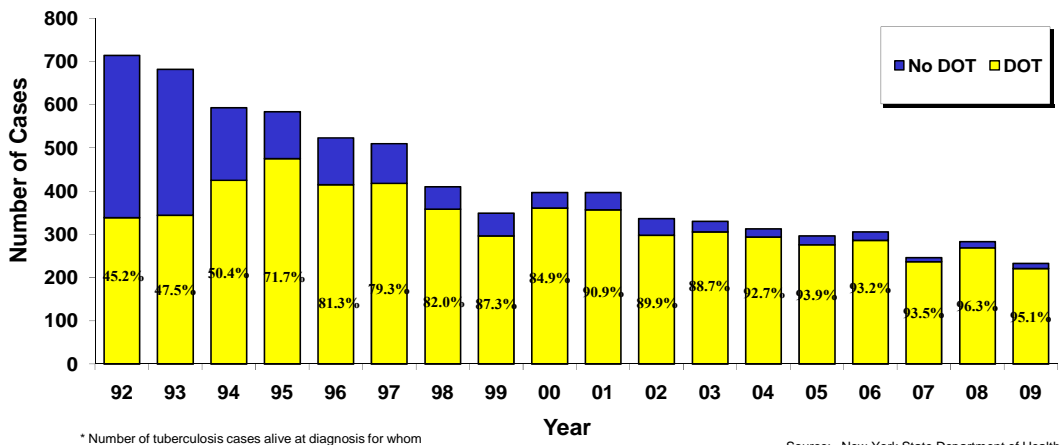
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 22: Percent of Infected Contacts to Infectious TB Cases Placed on Treatment and Completed, New York State (Exclusive of New York City), 2002-2008

Eighty-four percent of infected contacts to infectious (sputum smear positive) TB cases were placed on treatment in 2008 (the most recent year for which complete information is available), almost a 7 percent increase from the 76.3 percent in 2007. Nearly two-thirds (63.7%) of those starting treatment actually completed the prescribed regimen.

Number and Percentage of Tuberculosis Cases* Receiving Any Directly Observed Therapy

New York State (Exclusive of New York City), 1992-2009



* Number of tuberculosis cases alive at diagnosis for whom DOT information has been obtained.

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

Figure 23: Number and Percentage of Tuberculosis Cases Receiving Any Directly Observed Therapy, New York State (Exclusive of New York City), 1992-2009

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 95.1 percent in 2009.

Additional New York City tuberculosis data may be obtained by contacting the New York City Department of Health Surveillance Office at (212) 788 – 4155 or via the Internet at:
<http://www.ci.nyc.ny.us/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 2000 census figures.