



TUBERCULOSIS

in **New York State**

2010 ANNUAL STATISTICAL REPORT

NEW YORK
state department of
HEALTH

Bureau of Tuberculosis Control

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2010 Annual Report

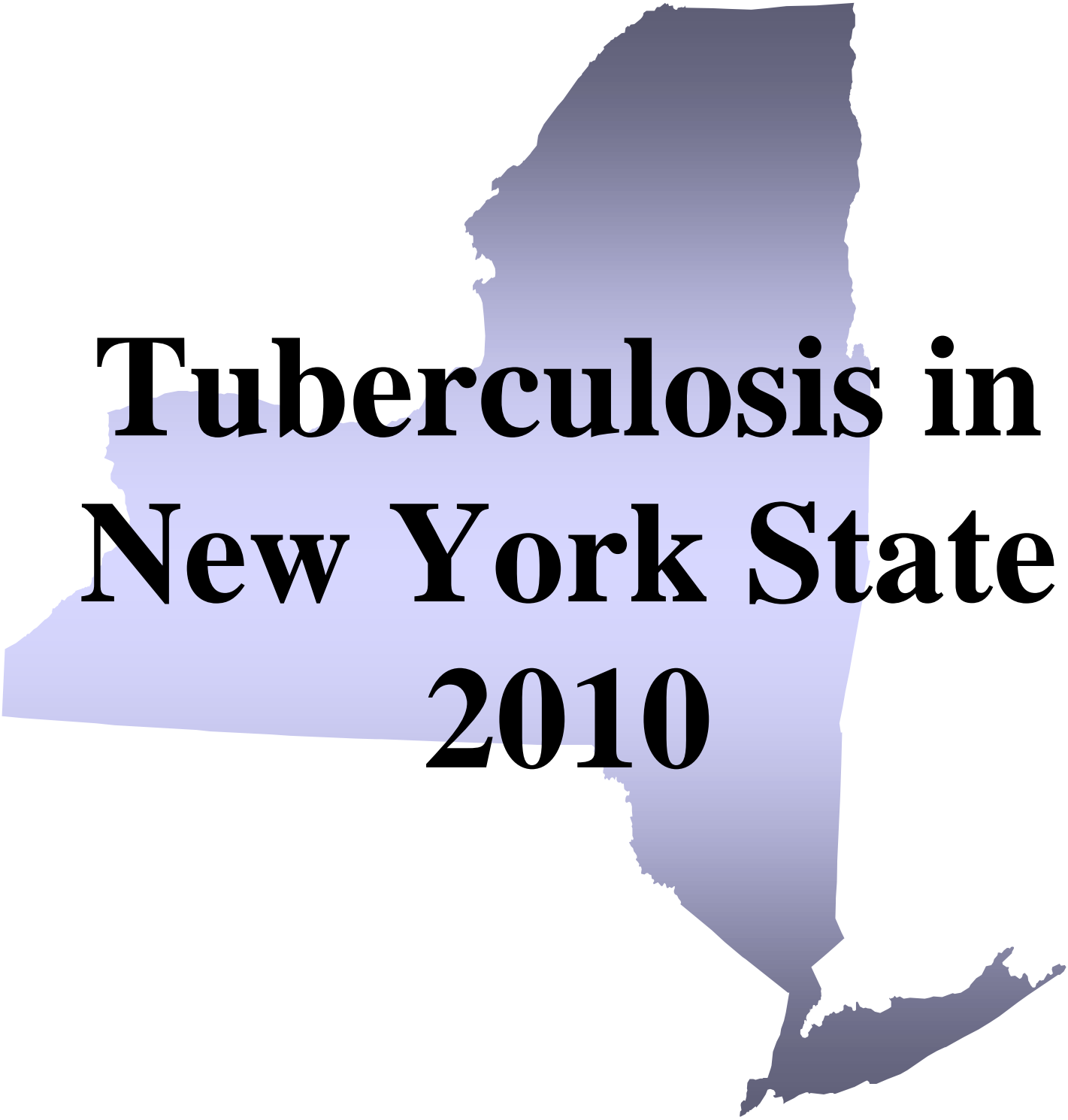
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SUMMARY

- Between 2009 and 2010, tuberculosis (TB) morbidity decreased in New York State. The 2010 total of 954 cases (711 cases in New York City, 243 cases in the remainder of New York State) represents a 5.2 percent decrease from the 1,006 cases reported in 2009. The decline in morbidity was greater in New York State than in the nation (5.2% and 3.0%, respectively). Since 1992, the recent peak epidemic year with 4,574 cases, New York State has experienced a 79.1 percent decrease compared to a national decline of 58.1 percent.
- In New York State (exclusive of New York City), the number of TB cases decreased 1.2 percent from 246 cases in 2009 to 243 cases in 2010. The number of TB cases in New York City decreased by 6.4 percent from 760 cases in 2009 to 711 cases in 2010. In 2010, the nation as a whole reported 11,181 TB cases, down from the 11,531 cases reported in 2009.
- New York State was sixth nationally with an incidence rate of 4.9 per 100,000 population in 2010. This rate is influenced by New York City, which had a TB case rate of 8.7/100,000. 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 3.6/100,000.
- Three counties - Nassau, Suffolk, and Westchester - reported over half of the TB cases in New York State (exclusive of New York City) in 2010.
- 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 2010, the number of multidrug-resistant (MDR TB) cases in New York City increased from nine cases in 2009 to 11 cases in 2010. In New York State (exclusive of New York City), there were three MDR TB cases in 2010, a decrease from the five cases in 2009.
- Statewide, including New York City, the proportion of cases contributed by foreign-born individuals increased slightly from 74.5 percent in 2009 to 78.2 percent (746 cases) in 2010, with people of Chinese origin contributing the greatest number of foreign-born TB cases (111). In New York State (exclusive of New York City), people of Indian or Ecuadorian origin contributed the greatest number of TB cases (17).

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Tuberculosis in New York State 2010

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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 2010, 954 new cases of tuberculosis were reported among New York State residents (Table 1, page 8). New York City reported 711 new TB cases while the rest of the state had 243.

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

1950-2010

Year	New York State (Exclusive of New York City)		New York City		New York State (Total)	
	No.	Rate per 100,000	No.	Rate per 100,000	No.	Rate per 100,000
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

*Figures after 1974 include reactivated cases

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

Table 1: Tuberculosis Cases, New York State, 1950-2010

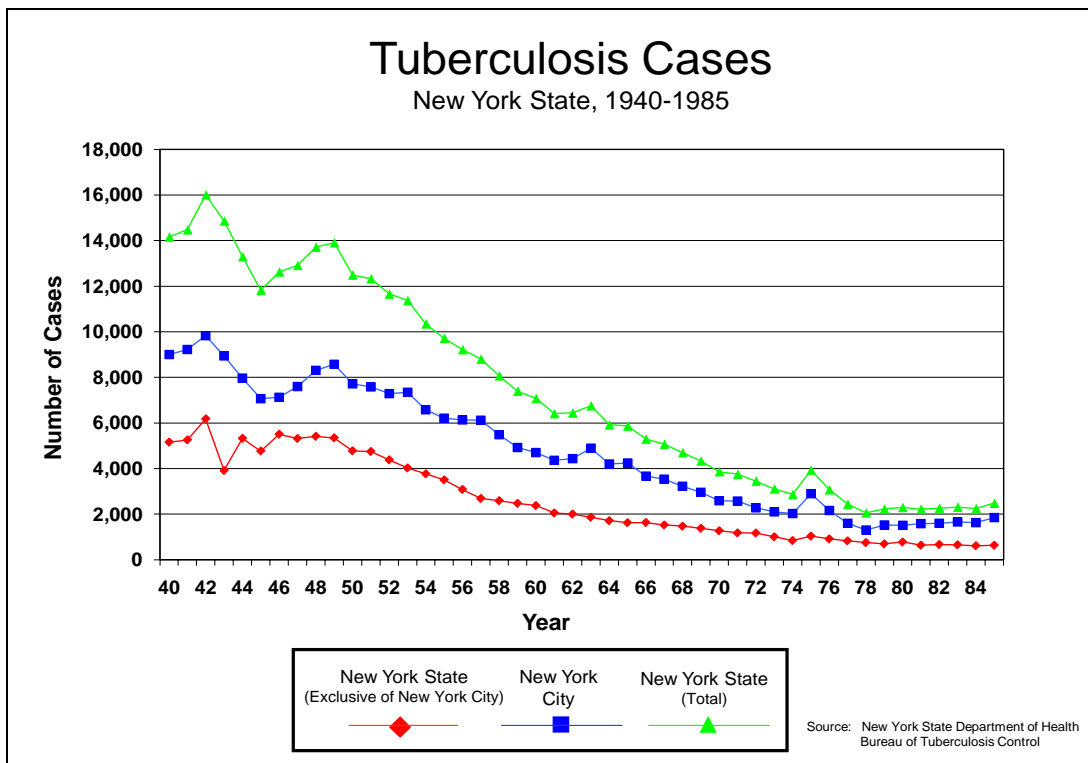


Figure 1a: Tuberculosis Cases, New York State, 1940-1985

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.

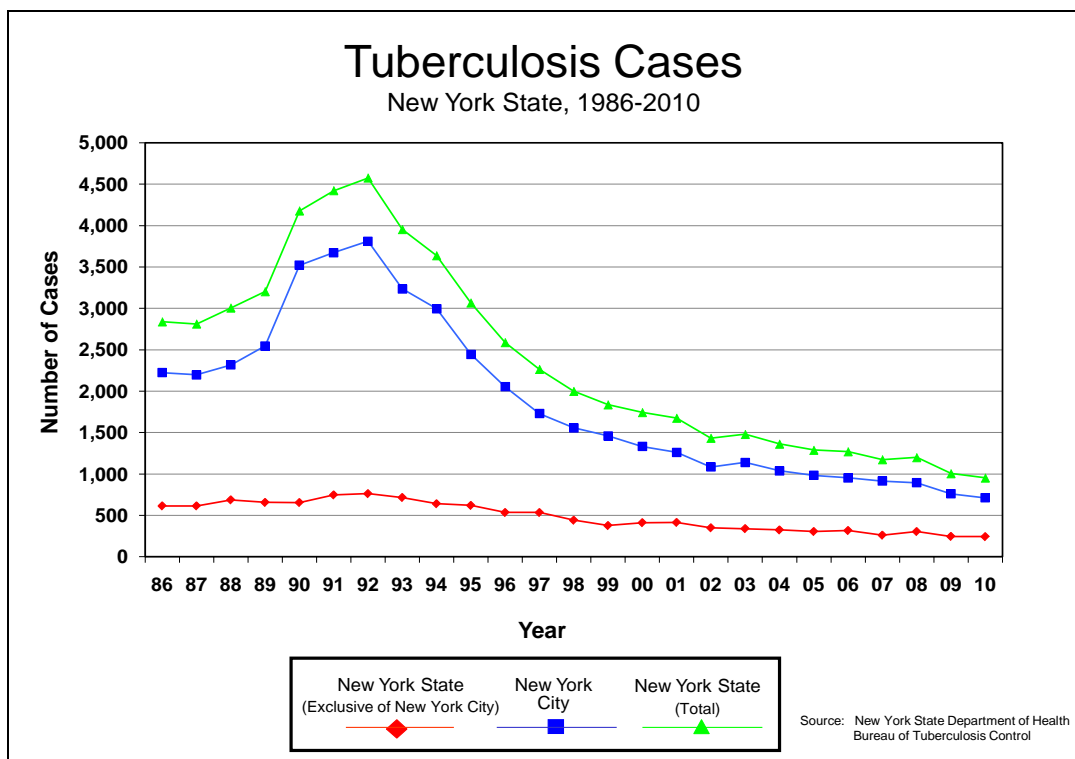


Figure 1b: Tuberculosis Cases, New York State, 1986-2010

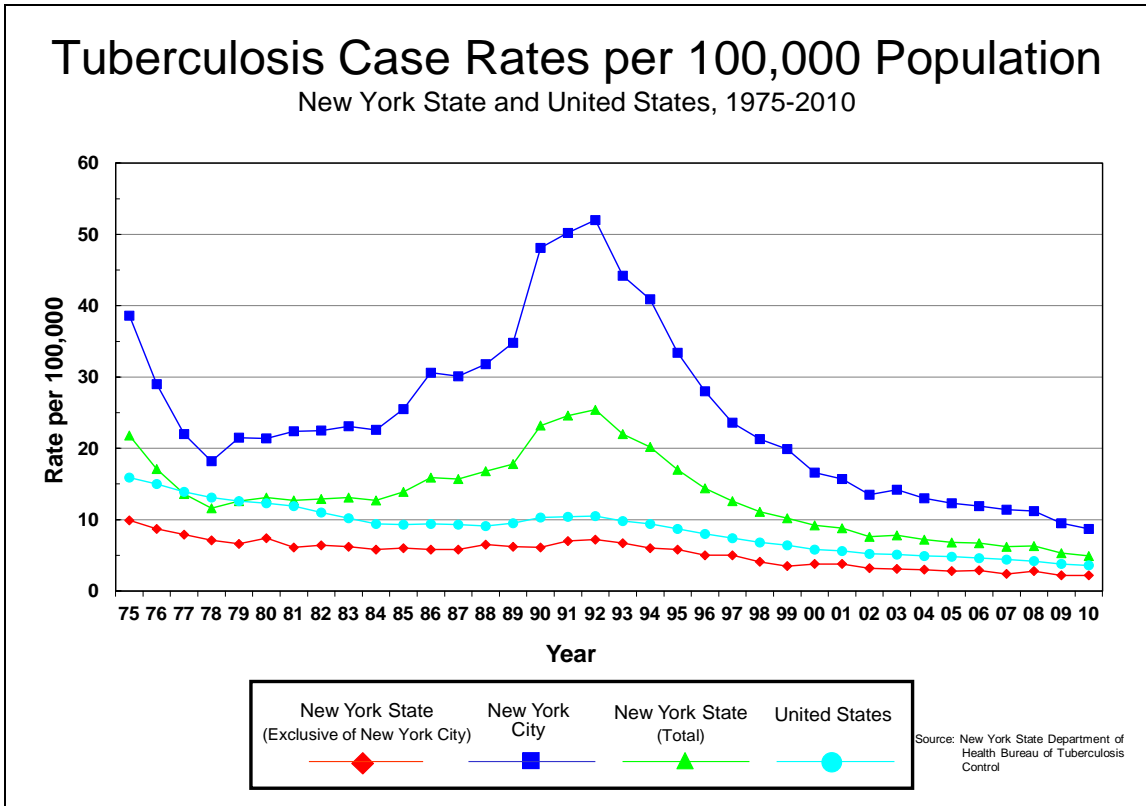


Figure 2: Tuberculosis Case Rates per 100,000 Population, New York State, 1975-2010

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 2010 TB case rate was 4.9 per 100,000 population (New York City, 8.7; New York State exclusive of New York City, 2.2). The national figure for 2010 was 3.6 per 100,000.

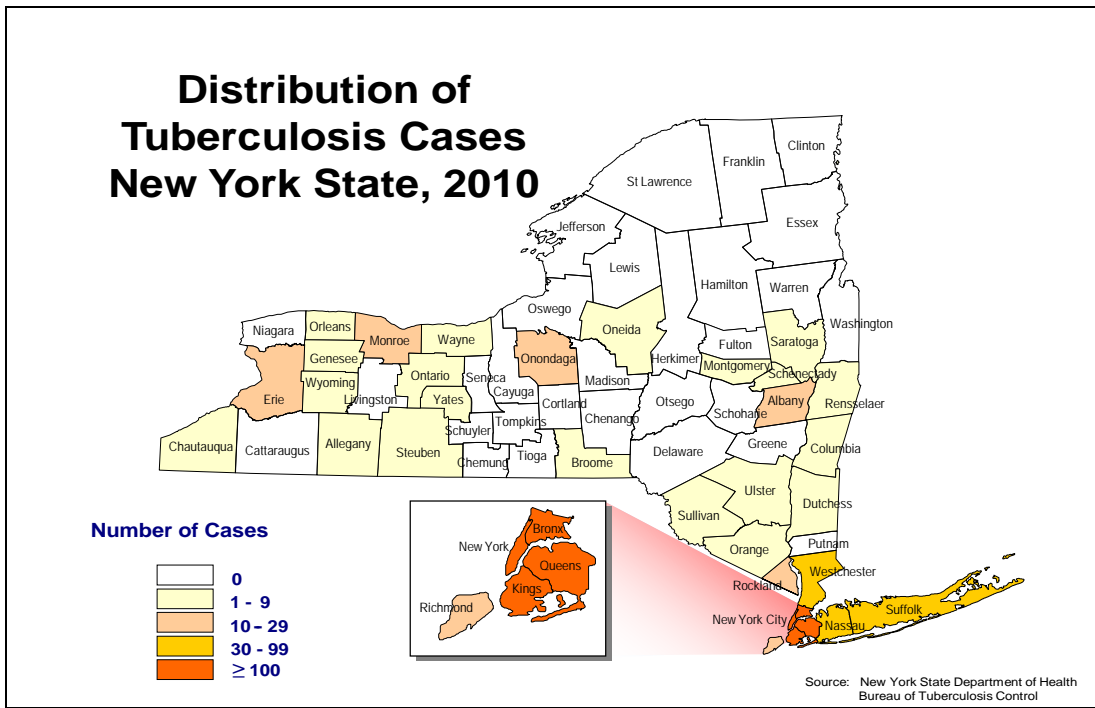


Figure 3: Distribution of Tuberculosis Cases, New York State, 2010

New York City represents 74.5 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 2010. Forty-two counties either had no cases or only one reported case of TB in 2010. 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, 2005-2010

	2005		2006		2007		2008		2009		2010	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Albany	6	2.0	8	2.7	7	2.4	4	1.4	3	1.0	10	3.3
Clinton	0	0.0	0	0.0	1	1.3	1	1.3	1	1.3	0	0.0
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	1	1.6	1	1.6
Delaware	0	0.0	0	0.0	0	0.0	1	2.1	0	0.0	0	0.0
Essex	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	0	0.0	0	0.0	1	2.0	2	3.9	1	2.0	0	0.0
Fulton	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Greene	1	2.1	0	0.0	0	0.0	1	2.1	1	2.1	0	0.0
Hamilton	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Montgomery	0	0.0	1	2.0	0	0.0	0	0.0	1	2.0	1	2.0
Otsego	0	0.0	1	1.6	0	0.0	1	1.6	0	0.0	0	0.0
Rensselaer	3	2.0	1	0.7	6	3.9	0	0.0	0	0.0	3	1.9
Saratoga	2	1.0	2	1.0	1	0.5	0	0.0	3	1.5	2	0.9
Schenectady	5	3.4	6	4.1	2	1.4	0	0.0	3	2.0	5	3.2
Schoharie	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Warren	1	1.6	1	1.6	0	0.0	1	1.6	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	18	1.2	20	1.4	18	1.2	11	0.8	14	1.0	22	1.5
Allegany	3	6.0	1	2.0	0	0.0	1	2.0	0	0.0	1	2.0
Cattaraugus	1	1.2	1	1.2	0	0.0	0	0.0	1	1.2	0	0.0
Chautauqua	2	1.4	2	1.4	0	0.0	0	0.0	1	0.7	1	0.7
Erie	11	1.2	11	1.2	9	0.9	16	1.7	14	1.5	11	1.2
Genesee	0	0.0	2	3.3	2	3.3	1	1.7	2	3.3	1	1.7
Niagara	2	0.9	4	1.8	1	0.5	2	0.9	2	0.9	0	0.0
Orleans	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.3
Wyoming	0	0.0	0	0.0	0	0.0	1	2.3	0	0.0	1	2.4
Buffalo Regional Total	19	1.2	21	1.3	12	0.8	21	1.3	20	1.3	16	1.0
Chemung	1	1.1	1	1.1	2	2.2	2	2.2	1	1.1	0	0.0
Livingston	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Monroe	22	3.0	24	3.3	21	2.9	16	2.2	18	2.4	16	2.1
Ontario	1	1.0	1	1.0	1	1.0	1	1.0	0	0.0	1	0.9
Schuyler	0	0.0	0	0.0	0	0.0	0	0.0	1	5.2	0	0.0
Seneca	0	0.0	1	3.0	0	0.0	0	0.0	1	3.0	0	0.0
Steuben	1	1.0	1	1.0	1	1.0	1	1.0	0	0.0	3	3.0
Wayne	0	0.0	0	0.0	2	2.1	0	0.0	4	4.3	1	1.1
Yates	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.9
Rochester Regional Total	25	2.0	28	2.2	27	2.1	20	1.6	25	2.0	22	1.7
Broome	2	1.0	3	1.5	4	2.0	5	2.5	1	0.5	1	0.5
Cayuga	1	1.2	0	0.0	0	0.0	1	1.2	1	1.2	0	0.0
Chenango	0	0.0	1	1.9	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	3	4.7	0	0.0	1	1.6	0	0.0	0	0.0	0	0.0
Jefferson	0	0.0	1	0.9	0	0.0	1	0.9	1	0.9	0	0.0
Lewis	0	0.0	0	0.0	1	3.7	0	0.0	0	0.0	0	0.0
Madison	0	0.0	0	0.0	1	1.4	0	0.0	0	0.0	0	0.0
Oneida	6	2.5	5	2.1	6	2.5	7	3.0	5	2.1	7	3.0
Onondaga	19	4.1	13	2.8	14	3.1	22	4.8	19	4.1	13	2.8
Oswego	0	0.0	1	0.8	2	1.6	0	0.0	0	0.0	0	0.0
St. Lawrence	7	6.3	1	0.9	0	0.0	2	1.8	0	0.0	0	0.0
Tioga	0	0.0	0	0.0	2	3.9	1	1.9	0	0.0	0	0.0
Tompkins	3	3.1	1	1.0	2	2.1	2	2.1	5	5.2	0	0.0
Syracuse Regional Total	41	2.4	26	1.5	33	1.9	41	2.4	32	1.8	21	1.2
Dutchess	7	2.5	9	3.2	3	1.1	7	2.5	4	1.4	9	3.0
Nassau	53	4.0	51	3.8	48	3.6	45	3.4	38	2.8	48	3.6
Orange	3	0.9	4	1.2	7	2.1	8	2.3	1	0.3	5	1.3
Putnam	3	3.1	3	3.1	2	2.1	0	0.0	1	1.0	0	0.0
Rockland	30	10.5	26	9.1	18	6.3	24	8.4	17	5.9	21	6.7
Suffolk	50	3.5	55	3.9	44	3.1	63	4.4	51	3.6	40	2.7
Sullivan	2	2.7	0	0.0	0	0.0	0	0.0	1	1.4	1	1.3
Ulster	1	0.6	3	1.7	3	1.7	3	1.7	2	1.1	1	0.5
Westchester	53	5.7	71	7.7	46	5.0	62	6.7	40	4.3	37	3.9
New Rochelle Regional Total	202	4.1	222	4.5	171	3.5	212	4.3	155	3.1	162	3.2
New York State Total (Exclusive of New York City)	305	2.8	317	2.9	261	2.4	305	2.8	246	2.2	243	2.2
Bronx	159	11.9	165	12.4	158	11.9	149	11.2	137	10.4	116	8.4
Kings	322	13.1	291	11.8	283	11.5	264	10.7	208	8.4	233	9.3
New York	183	11.9	164	10.7	183	11.9	159	10.3	121	7.9	90	5.7
Queens	303	13.6	305	13.7	267	12.0	300	13.5	275	12.3	259	11.6
Richmond	17	3.8	28	6.3	23	5.2	23	5.2	18	4.1	13	2.8
New York City Total	984	12.3	953	11.9	914	11.4	895	11.2	760	9.5	711	8.7
State Total	1,289	6.8	1,270	6.7	1,175	6.2	1,200	6.3	1,006	5.3	954	4.9

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, 2005-2010

**Tuberculosis Cases and Rates per 100,000 Population
By Age and Gender
New York State, 2010**

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	243	147	96	2.2	2.7	1.7	711	443	268	8.7	11.4	6.2	954	590	364	4.9	6.3	3.6
Under 5	5	3	2	0.8	0.9	0.6	6	3	3	1.2	1.1	1.2	11	6	5	1.0	1.0	0.9
5-9	4	1	3	0.6	0.3	0.9	11	7	4	2.3	2.9	1.7	15	8	7	1.3	1.3	1.2
10-14	2	2	0	0.3	0.5	0.0	10	7	3	2.1	2.9	1.3	12	9	3	1.0	1.5	0.5
15-19	8	3	5	1.0	0.7	1.2	31	19	12	5.8	7.0	4.5	39	22	17	2.9	3.1	2.5
20-24	21	14	7	2.7	3.5	1.9	71	45	26	11.0	14.4	7.9	92	59	33	6.5	8.3	4.7
25-34	50	29	21	3.9	4.5	3.4	124	69	55	8.9	10.3	7.6	174	98	75	6.5	7.5	5.6
35-44	38	22	16	2.6	3.1	2.2	117	69	48	10.1	12.3	8.2	155	91	65	5.9	7.1	4.9
45-54	43	31	12	2.4	3.6	1.3	125	91	34	11.3	17.3	5.8	168	122	46	5.8	8.7	3.1
55-64	38	25	13	2.7	3.6	1.8	99	65	34	11.1	16.1	7.0	137	90	47	5.9	8.2	3.9
65+	34	17	17	2.1	2.5	1.8	117	68	49	11.8	17.2	8.2	151	85	66	5.8	7.8	4.3

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

Table 3: Tuberculosis Cases and Rates per 100,000 Population, New York State, 2010

Eleven children under the age of five were diagnosed with active TB in 2010 in New York State, a decrease of 60.7 percent from 2009 (N=28). New York City's number of cases in this age group also decreased substantially from 14 in 2009 to 6 in 2010. For the rest of the state, the number of cases in this age group decreased from 14 to 11 (21.4%).

The highest morbidity rates in New York City occurred in the 45-54 and over 65 year age groups (11.3 and 11.8 per 100,000, respectively). The highest rate in New York State (exclusive of New York City) occurred among those in the 25-34 year age group (3.9 per 100,000). Statewide, the highest morbidity rates were found in the 20-24 and 25-34 year age groups (6.5 per 100,000).

Statewide, the tuberculosis incidence rate among males was 1.8 times the female rate (6.3 compared to 3.6 per 100,000). The largest disparity by gender occurred in the 45-54 year age group, where the male rate was 2.8 times the female rate (8.7 compared to 3.1 per 100,000).

Tuberculosis Cases and Rates by Gender, Age*, and Race/Ethnicity
New York State, 2010

	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	147	2.7	443	11.4	590	6.3
Female	96	1.7	268	6.2	364	3.6
AGE						
Under 5 years	5	0.8	6	1.2	11	1.0
5-9	4	0.6	11	2.3	15	1.3
10-14	2	0.3	10	2.1	12	1.0
15-19	8	1.0	31	5.8	39	2.9
20-24	21	2.7	71	11.0	92	6.5
25-34	50	3.9	124	8.9	174	6.5
35-44	38	2.6	117	10.1	155	5.9
45-54	43	2.4	125	11.3	168	5.8
55-64	38	2.7	99	11.1	137	5.9
65+	34	2.1	117	11.8	151	5.8
RACE/ETHNICITY						
White, non-Hispanic	44	0.5	53	1.9	97	0.9
Black, non-Hispanic	47	5.1	167	9.0	214	7.7
Hispanic	83	7.7	201	8.6	284	8.3
Asian	69	18.3	271	26.4	340	24.2
Native American	---	---	1	5.7	1	1.9
Pacific Islander	---	---	1	35.8	1	18.8
Multiple Races	---	---	9	6.1	9	2.8
Other	---	---	5	8.6	5	6.1
Unknown	---	---	3	---	3	---
TOTAL	243	2.2	711	8.7	954	4.9

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

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

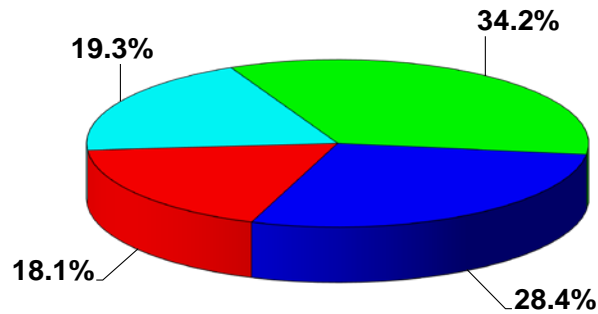
Table 4: Tuberculosis Cases and Rates by Gender, Age, and Race/Ethnicity, New York State, 2010

Males accounted for approximately 62 percent of TB cases reported statewide in 2010. In New York City, the case rate among males was 1.8 times that of females (11.4 for males compared to 6.2 for females). This is slightly higher than in New York State (exclusive of New York City) where the case rate for males was 1.6 times greater than females (2.7 for males compared to 1.7 for females).

In 2010, the highest case rates statewide were found among Asians (24.2) and Pacific Islanders (18.8). White, non-Hispanics had the lowest case numbers and case rates across the whole state (N=97 and 0.9, respectively).

TB Cases by Race/Ethnicity

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



■ White, non-Hispanic ■ Black, non-Hispanic ■ Hispanic ■ Asian

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

Figure 4: Racial/Ethnic Distribution of TB Cases, New York State (Exclusive of New York City), 2010

In New York State (exclusive of New York City), Hispanics represented the largest (34.2%) proportion of TB cases in 2010, followed by Asians with 28.4 percent. Black non-Hispanics and white non-Hispanics each represented slightly less than one-fifth of TB cases reported in 2010.

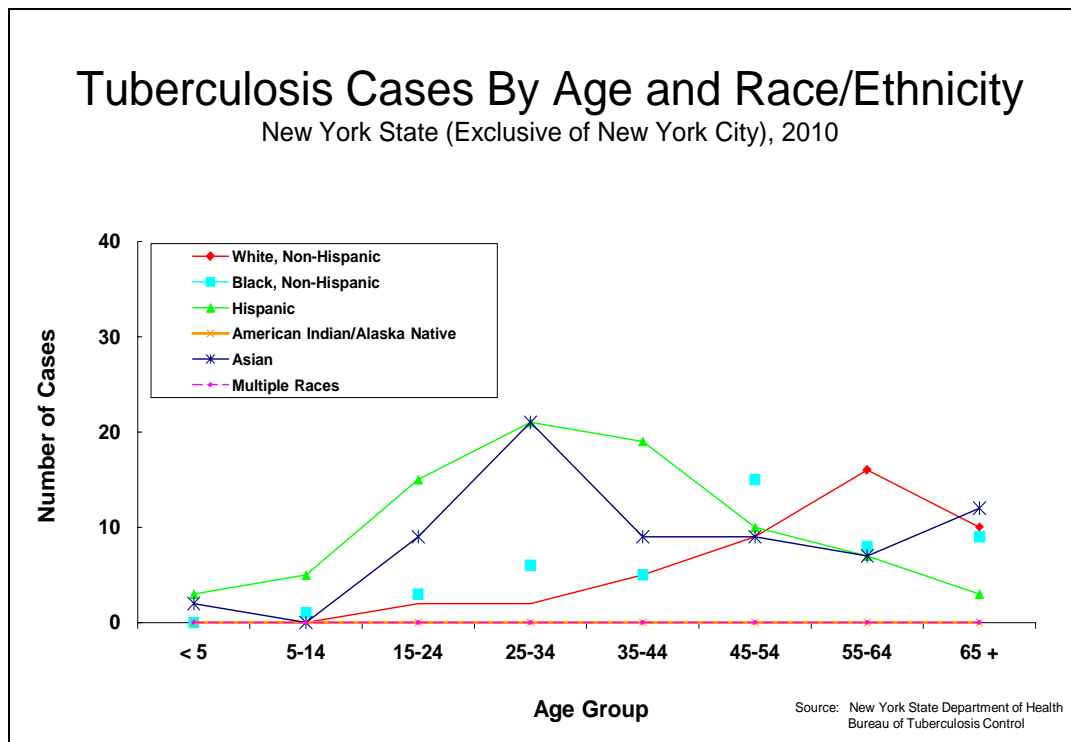


Figure 5: Tuberculosis Cases By Age and Race/Ethnicity, New York State (Exclusive of New York City), 2010

The number of TB cases among Asians in New York State (exclusive of New York City) peaked in the 25-34 year age group (N=21), with a slightly lower peak in the over 65 age group (N=12). Similar to Asians, the greatest number of Hispanic cases were seen in the 25-34 year age group (N=21). The greatest morbidity among white non-Hispanics was in the 55-64 year age group (N=16), while among black non-Hispanics, the highest number of cases occurred in the 45-54 year age group (N=15).

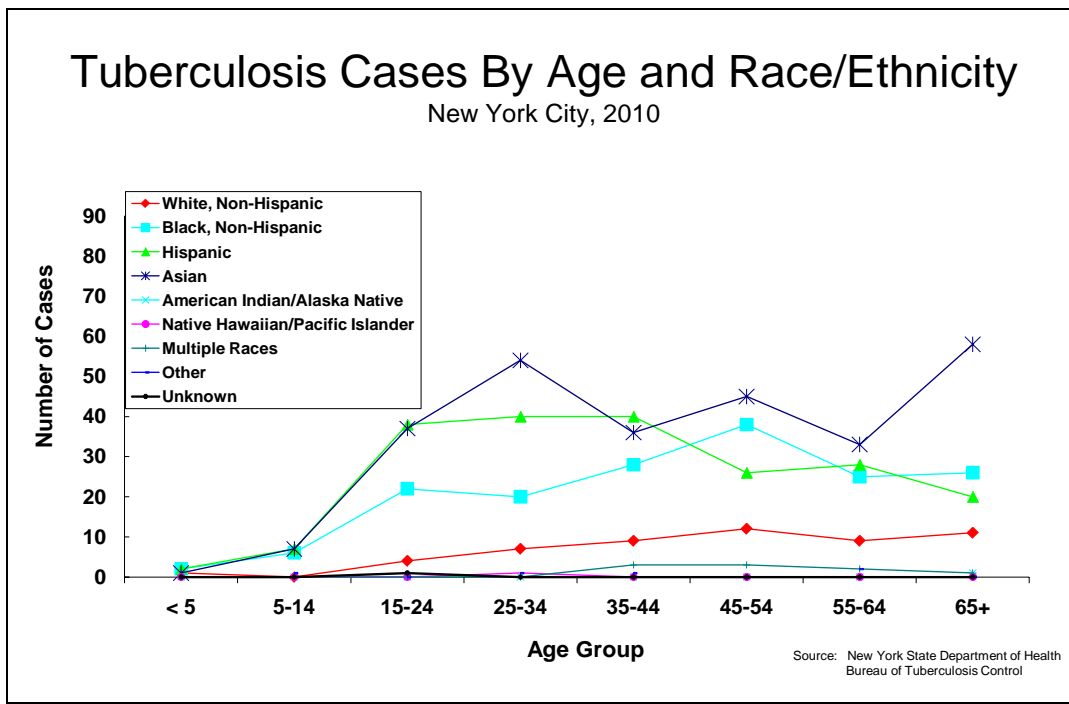


Figure 6: Tuberculosis Cases By Age and Race/Ethnicity, New York City, 2010

The number of TB cases among Asians in New York City peaked in the over 65 year age group (N=58), with a slightly lower peak in the 25-34 year age group (N=54). The greatest morbidity among Hispanics spanned across the 15-24, 25-34 and the 35-44 year age groups (N=38, N=40 and N=40, respectively) and among black non-Hispanics, the highest number of cases occurred in the 45-54 year age group (N=38).

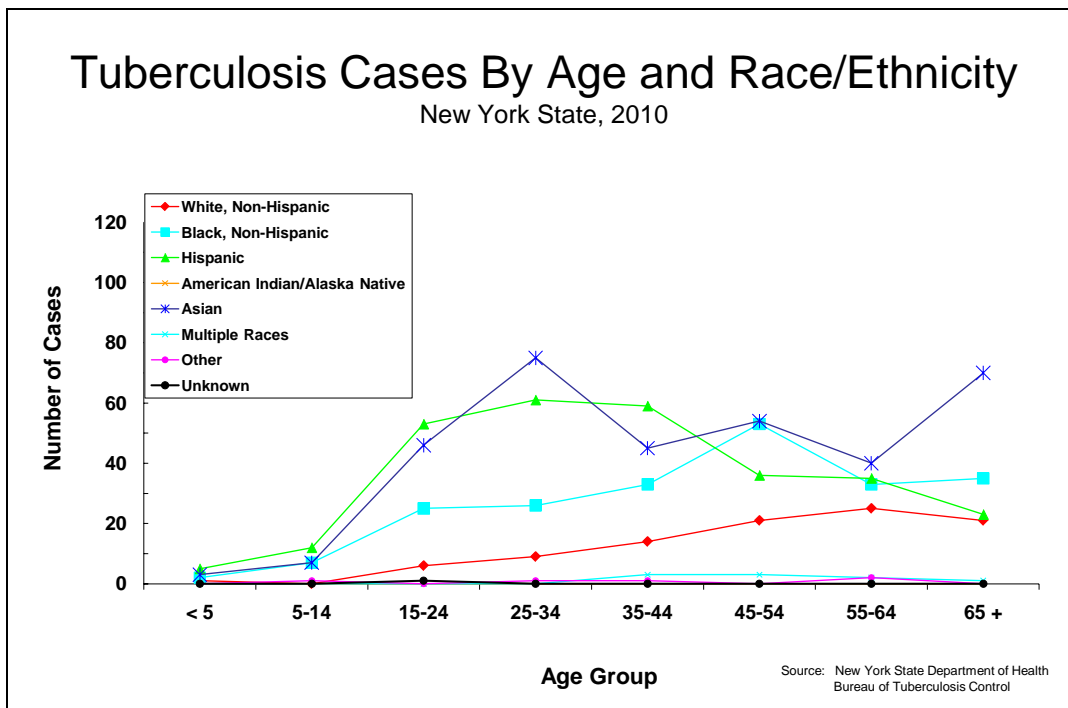


Figure 7: Tuberculosis Cases By Age and Race/Ethnicity, New York State, 2010

Statewide the largest number of cases came among Asians in the 25-34 (N=75) and over 65 (N=70) year age groups, followed by Hispanics in the 25-34 (N=61), 35-44 (N=59) and 15-24 (N=53) year age groups.

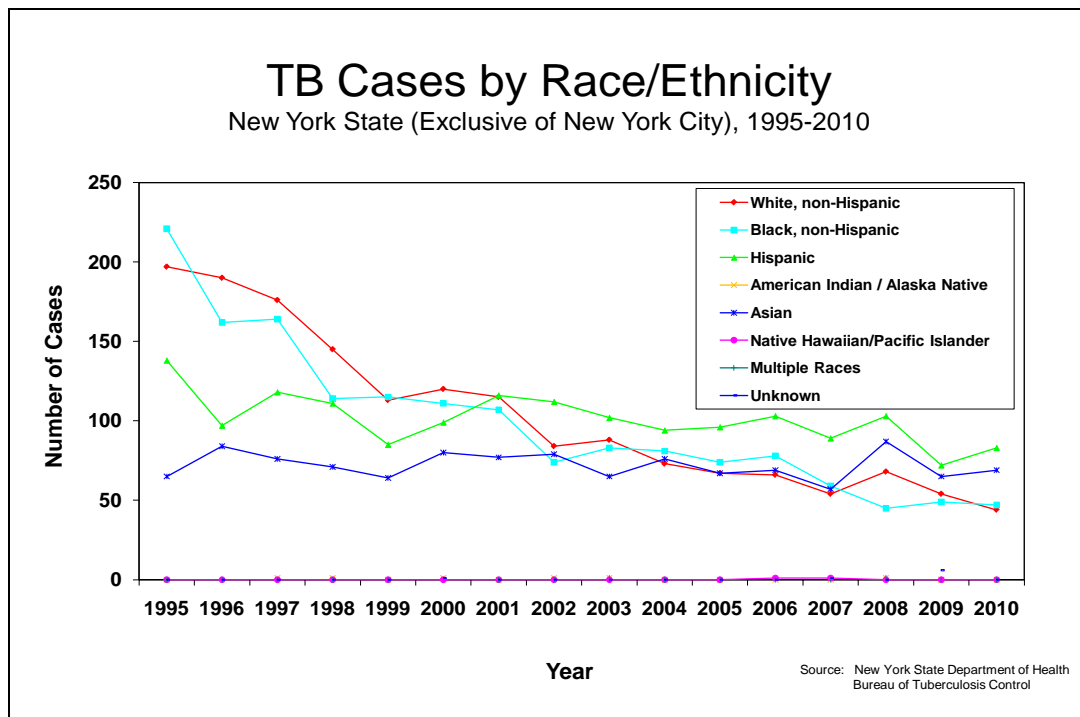


Figure 8: Racial/Ethnic Distribution of TB Cases by Year, New York State (Exclusive of New York City), 1995-2010

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 31.7 percent from 197 cases to 44 cases and black non-Hispanics decreased 35.6 percent from 221 cases to 47.

Over the last year, the number of TB cases among Hispanics has increased 15.3 percent. (N=72 in 2009 and N=83 in 2010), whereas the number of white non-Hispanic TB cases decreased 18.5 percent during the same time frame (N=54 in 2009 and N=44 in 2010).

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), 2010

County	Total Number	US-Born Number	Foreign-Born Number	Foreign-Born Percent
Albany	10	2	8	80.0
Allegany	1	1	0	0.0
Broome	1	1	0	0.0
Cattaraugus	0	0	0	0.0
Cayuga	0	0	0	0.0
Chautauqua	1	0	1	100.0
Chemung	0	0	0	0.0
Chenango	0	0	0	0.0
Clinton	0	0	0	0.0
Columbia	1	1	0	0.0
Cortland	0	0	0	0.0
Delaware	0	0	0	0.0
Dutchess	9	5	4	44.4
Erie	11	6	5	45.5
Essex	0	0	0	0.0
Franklin	0	0	0	0.0
Fulton	0	0	0	0.0
Genesee	1	0	1	100.0
Greene	0	0	0	0.0
Hamilton	0	0	0	0.0
Herkimer	0	0	0	0.0
Jefferson	0	0	0	0.0
Lewis	0	0	0	0.0
Livingston	0	0	0	0.0
Madison	0	0	0	0.0
Monroe	16	6	10	62.5
Montgomery	1	1	0	0.0
Nassau	48	10	38	79.2
Niagara	0	0	0	0.0
Oneida	7	3	4	57.1
Onondaga	13	2	11	84.6
Ontario	1	0	1	100.0
Orange	5	2	3	60.0
Orleans	1	0	1	100.0
Oswego	0	0	0	0.0
Otsego	0	0	0	0.0
Putnam	0	0	0	0.0
Rensselaer	3	2	1	33.3
Rockland	21	2	19	90.5
St. Lawrence	0	0	0	0.0
Saratoga	2	0	2	100.0
Schenectady	5	1	4	80.0
Schoharie	0	0	0	0.0
Schuyler	0	0	0	0.0
Seneca	0	0	0	0.0
Steuben	3	3	0	0.0
Suffolk	40	12	28	70.0
Sullivan	1	1	0	0.0
Tioga	0	0	0	0.0
Tompkins	0	0	0	0.0
Ulster	1	1	0	0.0
Warren	0	0	0	0.0
Washington	0	0	0	0.0
Wayne	1	0	1	100.0
Westchester	37	6	31	83.8
Wyoming	1	0	1	100.0
Yates	1	0	1	100.0
TOTAL	243	68	175	72.0

*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), 2010

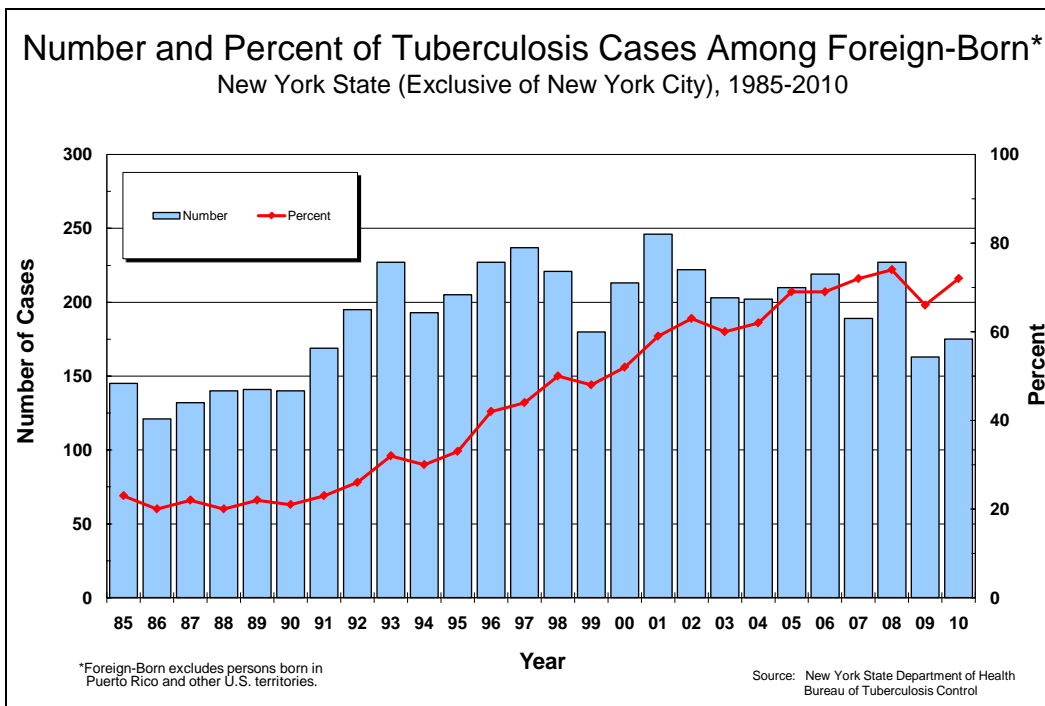


Figure 9: Number and Percent of Tuberculosis Cases Among Foreign-Born, New York State (Exclusive of New York City), 1985-2010

The overall number of foreign-born TB cases in New York State (exclusive of New York City) increased from 163 in 2009 to 175 in 2010. The percent of TB cases reported among the foreign-born also increased from 66.3 percent in 2009 to 72.0 in 2010. Overall, the proportion of foreign-born cases statewide increased from 74.5 percent to 78.2 percent.

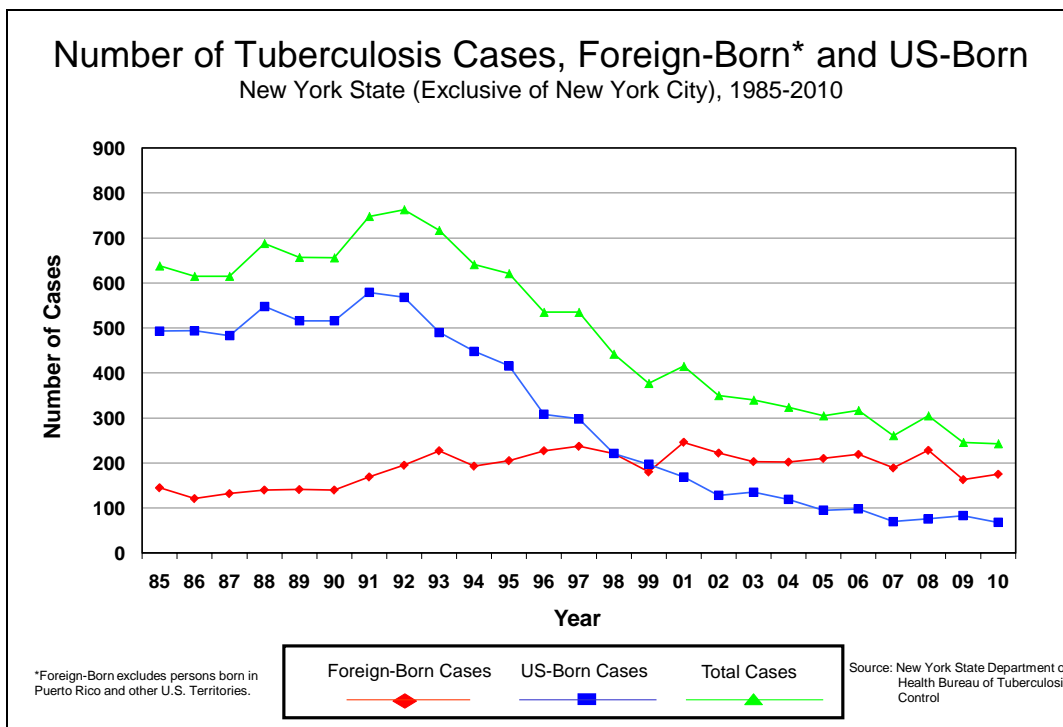


Figure 10: Number of Tuberculosis Cases, Foreign-Born and US-Born, New York State (Exclusive of New York City), 1985-2010

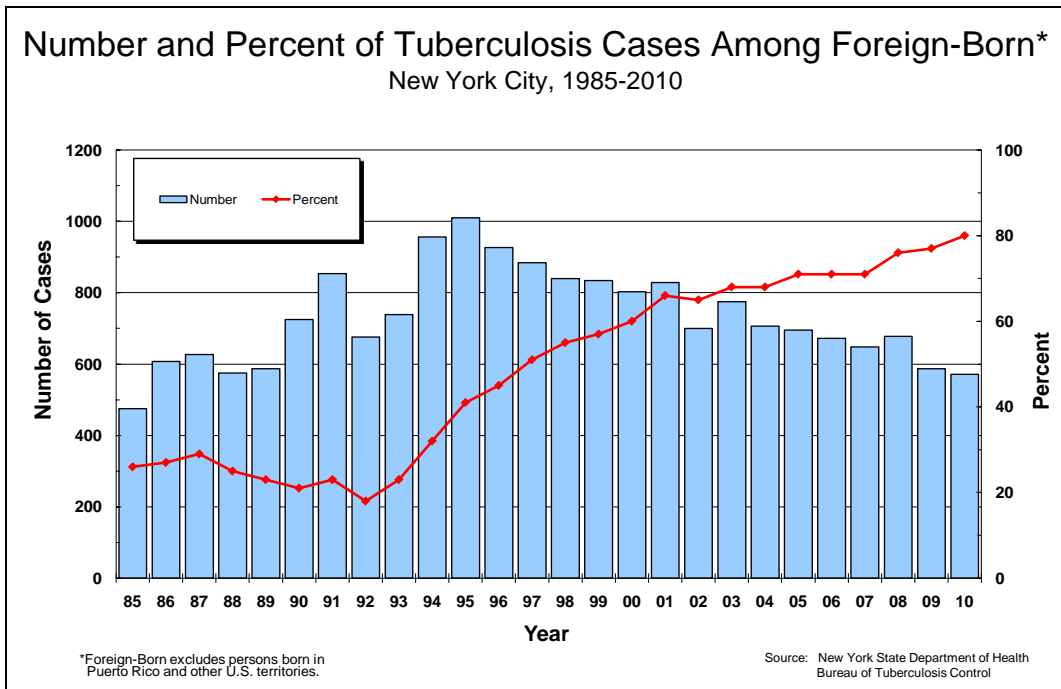


Figure 11: Number and Percent of Tuberculosis Cases Among Foreign-Born, New York City, 1985-2010

The number of TB cases reported among the foreign-born decreased from 587 in 2009 to 571 in 2010 in New York City. Despite this decrease in number of cases, the percentage of foreign-born cases increased from 77.2 percent in 2009 to 80.3 percent in 2010.

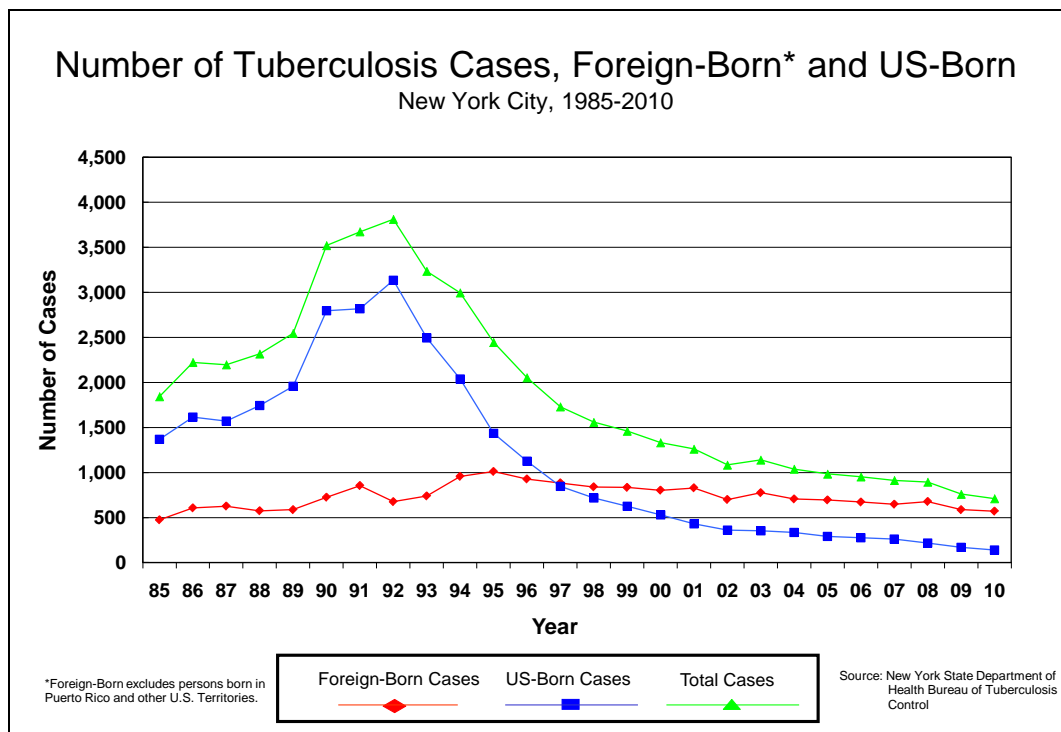


Figure 12: Number of Tuberculosis Cases, Foreign-Born and US-Born, New York City, 1985-2010

Tuberculosis Cases by Country of Origin*

New York State, 2010

	New York State (Exclusive of New York City)	New York City	New York State (Total)
United States	68	122	190
China	7	104	111
Ecuador	17	41	58
Dominican Republic	4	41	45
Mexico	9	35	44
India	17	26	43
Philippines	11	28	39
Haiti	13	23	36
Bangladesh	1	30	31
Pakistan	5	20	25
Peru	7	16	23
Korea, Republic of	3	18	21
Puerto Rico	4	14	18
Honduras	9	9	18
Burma	10	7	17
Guatemala	7	10	17
Guyana	1	16	17
Nepal	2	12	14
Jamaica	3	10	13
Vietnam	3	7	10
El Salvador	6	1	7
Hong Kong	0	7	7
Indonesia	1	6	7
Ghana	2	4	6
Nigeria	0	6	6
Ukraine	2	4	6
Uzbekistan	0	6	6
Guinea	1	4	5
Ivory Coast	0	5	5
Poland	1	4	5
Trinidad and Tobago	0	5	5
Other Countries	29	69	98
Unknown	0	1	1
Total	243	711	954

* 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, 2010

Tuberculosis Cases by World Region of Origin

New York State (Exclusive of New York City), 2005-2010

REGION	2005	2006	2007	2008	2009	2010
Africa	18	27	21	17	13	13
East Asia	41	34	31	48	35	37
Caribbean/South and Central America/Mexico	108	111	93	101	69	81
Europe	16	11	15	19	13	11
India/Pakistan/Middle East	27	36	29	42	33	29
United States/Canada*	95	98	72	77	83	72
TOTAL	305	317	261	304	246	243

*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), 2010

In New York State (exclusive of New York City), the greatest percentage of TB cases originated from the Caribbean/South and Central America/Mexico region (33.3%). A significant decrease in cases occurred among those originating from the United States or Canada, with a decline of 13.3 percent, from 83 in 2009 to 72 in 2010.

Tuberculosis Cases and Rates per 100,000 Population

Total Number and Rate; Number and Rate in General Population; Number of DOCCS* Inmates
New York State Counties (Exclusive of New York City), 2010

County	2010 Population	Total Number	Rate per 100,000	General Pop. Number	General Pop. Rate	Inmate Number
Albany	304,204	10	3.3	10	3.3	0
Allegany	48,946	1	2.0	1	2.0	0
Broome	200,600	1	0.5	1	0.5	0
Cattaraugus	80,317	0	0.0	0	0.0	0
Cayuga	80,026	0	0.0	0	0.0	0
Chautauqua	134,905	1	0.7	1	0.7	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	1	1.6	1	1.6	0
Cortland	49,336	0	0.0	0	0.0	0
Delaware	47,980	0	0.0	0	0.0	0
Dutchess	297,488	9	3.0	9	3.0	0
Erie	91,9040	11	1.2	11	1.2	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	1	1.7	1	1.7	0
Greene	49,221	0	0.0	0	0.0	0
Hamilton	4,836	0	0.0	0	0.0	0
Herkimer	64,519	0	0.0	0	0.0	0
Jefferson	116,229	0	0.0	0	0.0	0
Lewis	27,087	0	0.0	0	0.0	0
Livingston	65,393	0	0.0	0	0.0	0
Madison	73,442	0	0.0	0	0.0	0
Monroe	744,344	16	2.1	16	2.1	0
Montgomery	50,219	1	2.0	1	2.0	0
Nassau	1,339,532	48	3.6	48	3.6	0
Niagara	216,469	0	0.0	0	0.0	0
Oneida	234,878	7	3.0	7	3.0	0
Onondaga	467,026	13	2.8	13	2.8	0
Ontario	107,931	1	0.9	1	0.9	0
Orange	372,813	5	1.3	5	1.3	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	0	0.0	0	0.0	0
Rensselaer	159,429	3	1.9	3	1.9	0
Rockland	311,687	21	6.7	21	6.7	0
St. Lawrence	111,944	0	0.0	0	0.0	0
Saratoga	219,607	2	0.9	2	0.9	0
Schenectady	154,727	5	3.2	5	3.2	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	3	3.0	3	3.0	0
Suffolk	1,493,350	40	2.7	40	2.7	0
Sullivan	77,547	1	1.3	1	1.3	0
Tioga	51,125	0	0.0	0	0.0	0
Tompkins	101,564	0	0.0	0	0.0	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	1	1.1	1	1.1	0
Westchester	949,113	37	3.9	36	3.8	1
Wyoming	42,155	1	2.4	0	0.0	1
Yates	25,348	1	4.0	1	4.0	0
TOTAL	11,202,969	243	2.2	241	2.2	2

* 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), 2010**

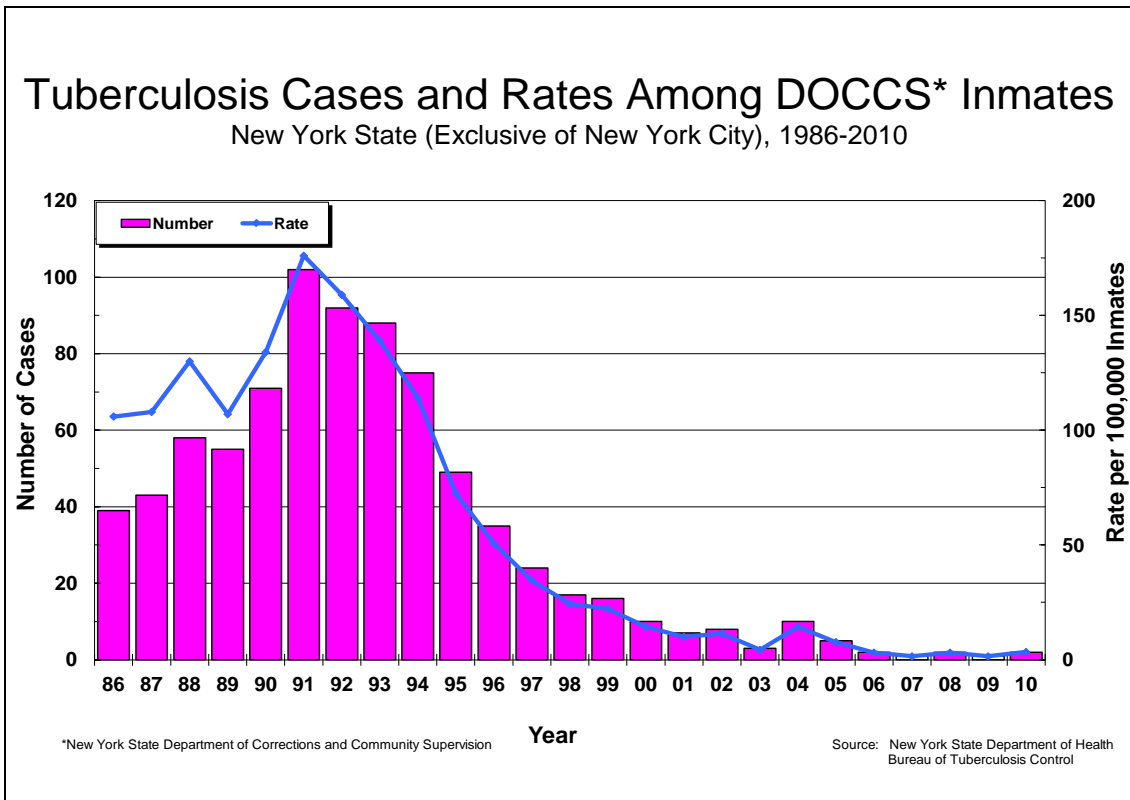


Figure 13: Tuberculosis Cases and Rates Among DOCCS Inmates, New York State (Exclusive of New York City), 1986-2010

During the late 1980s and early 1990s, a substantial proportion of TB cases reported by New York State (exclusive of New York City) were in the New York State Department of Corrections and Community Supervision (DOCCS) inmate population. Among the DOCCS inmate population, there has been a notable decline in cases since 1991 when 102 new cases (176 per 100,000 inmates) were reported. In 2010, two new cases were reported (3.4 per 100,000 inmates). Traditionally, DOCCS inmate cases have a wide geographical distribution across New York State and reflect mainly facility locations and DOCCS policies on periodic relocation of inmates.

HIV Status Among Tuberculosis Patients

New York State (Exclusive of New York City), 2005-2010

HIV STATUS	2005		2006		2007		2008		2009		2010	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Negative	176	(57.7)	185	(58.4)	174	(66.7)	222	(72.8)	163	(66.3)	178	(73.3)
Positive	23	(7.5)	26	(8.2)	17	(6.5)	19	(6.2)	11	(4.5)	16	(6.6)
Unknown	106	(34.8)	106	(33.4)	70	(26.8)	64	(21.0)	72	(29.3)	49	(20.2)
TOTAL	305	(100.0)	317	(100.0)	261	(100.0)	305	(100.0)	246	(100.0)	243	(100.0)

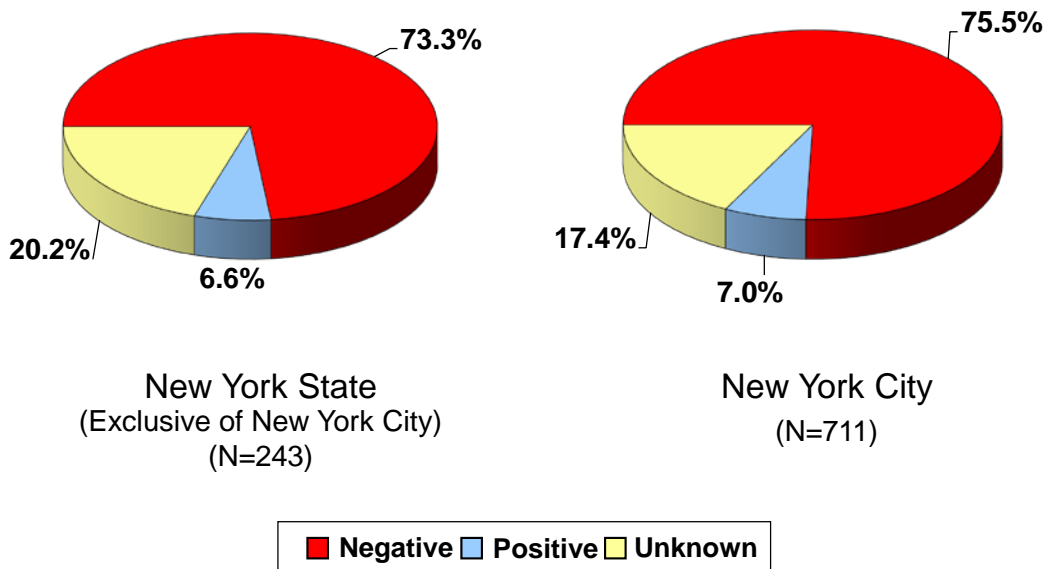
Source: New York State Department of Health
Bureau of Tuberculosis Control

Table 9: HIV Status Among Tuberculosis Patients, New York State (Exclusive of New York City), 2005-2010

Knowledge of HIV status is improving among individuals with active TB 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. Of the 243 TB cases in 2010, only 6.6 percent (N=16/243) had a positive HIV status.

HIV Status Among Tuberculosis Cases

New York State, 2010



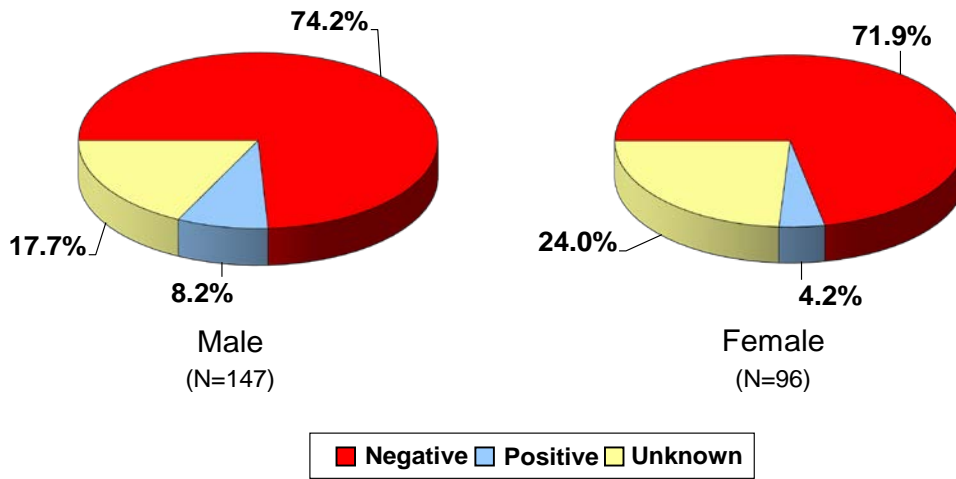
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 14: HIV Status Among Tuberculosis Cases, New York State, 2010

In 2010, 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 (79.9% and 82.5%, respectively). Over the last year, the percentage of TB cases with a known HIV result increased 9.2 percent in New York State (exclusive of New York City) (70.7% in 2009 compared to 79.9% in 2010), and 5.1 percent in New York City (77.4% in 2009 compared to 82.5% in 2010).

HIV Status Among Tuberculosis Cases By Gender

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



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), 2010

In 2010, 24.0 percent (N=23) of female TB cases and 17.7 (N=26) percent 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 similar for both males and females (74.2%, N=109 for males and 71.9%, N=69 for females). The number of male TB cases co-infected with HIV more than doubled, from 5 in 2009 to 12 in 2010, while a decrease from 6 cases to 4 cases was observed among females.

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

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

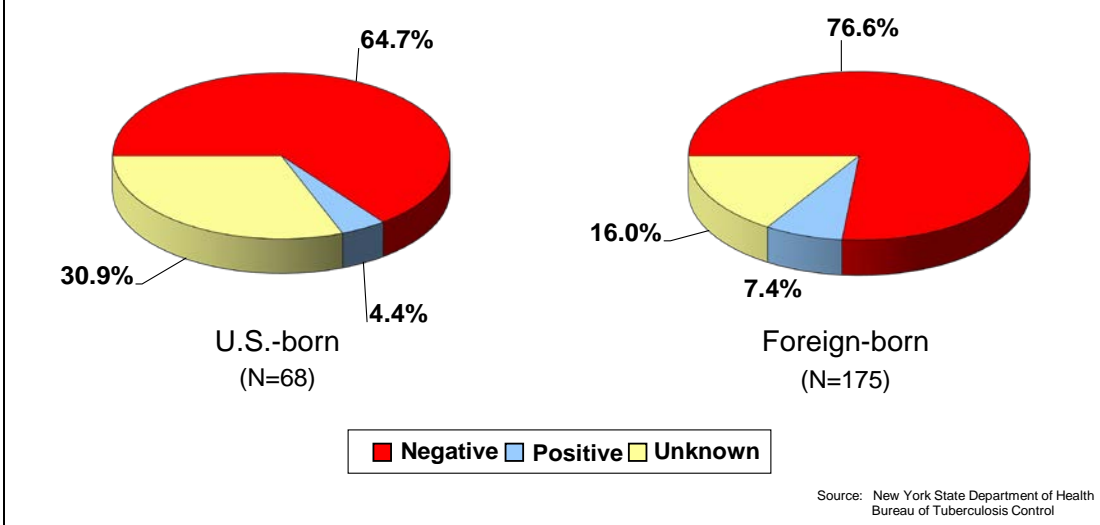
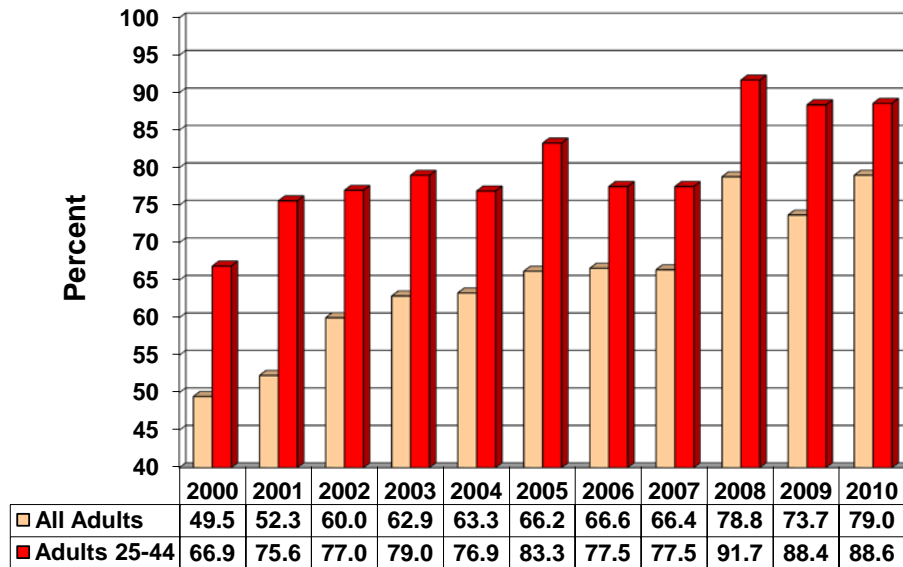


Figure 16: HIV Status Among Tuberculosis Cases, U.S. vs. Foreign-Born, New York State (Exclusive of New York City), 2010

In New York State (exclusive of New York City), a greater percentage of foreign-born TB cases (84.0%, N=147) reported a known HIV status, than U.S.-born (69.1%, 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 (30.9%, N=21 for US-born and 16.0%, N=28 for foreign-born cases).

Percent of Adults with TB Who Have Been Tested for HIV

New York State (Exclusive of New York City), 2000-2010



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), 2000-2010

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 2010, 79.0 percent of all adults with TB had a known HIV status, exceeding the New York State (exclusive of New York City) objective for 2010 (75.0%). In the subgroup of TB cases between the ages of 25 and 44, the percentage with a known HIV status was much higher (88.6%).

Primary Reason For Evaluation of Tuberculosis Cases

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

PRIMARY REASON FOR EVALUATION	Non-MDR		MDR	
	No.	(%)	No.	(%)
TB Symptoms	113	(47.1)	2	(66.7)
Abnormal Chest Radiograph	69	(28.8)	1	(33.3)
Incidental Lab Result	35	(14.6)	0	(0.0)
Immigration Medical Exam	6	(2.5)	0	(0.0)
Contact Investigation	4	(1.7)	0	(0.0)
Employment/Administrative Testing	2	(0.8)	0	(0.0)
Health Care Worker	1	(0.4)	0	(0.0)
Targeted Testing	1	(0.4)	0	(0.0)
Unknown	7	(2.9)	0	(0.0)
No Information Provided	2	(0.8)	0	(0.0)
TOTAL	240	(100.0)	3	(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), 2010

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 was also cited as a reason for evaluation.

Of the 240 non-MDR TB cases diagnosed in 2010, nearly half (47.1%) were evaluated as a result of presenting with TB symptoms. Other common reasons for evaluation included an abnormal chest radiograph (N=69, 28.8%) and an incidental lab result (N=35, 14.6%).

Additional Risk Factors Among Tuberculosis Cases by Gender

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

ADDITIONAL RISK FACTOR	Male		Female		Total	
	No.	(%)	No.	(%)	No.	(%)
None	104	(70.8)	58	(60.4)	162	(66.7)
Diabetes Mellitus	12	(8.2)	6	(6.3)	18	(7.4)
Contact of an Infectious TB Patient*	9	(6.1)	4	(4.2)	13	(5.3)
Immunosuppression (not HIV/AIDS)	5	(3.4)	8	(8.3)	13	(5.3)
Incomplete LTBI Therapy	4	(2.7)	5	(5.2)	9	(3.7)
End-Stage Renal Disease	1	(0.7)	1	(1.0)	2	(0.8)
TNF-alpha Antagonist Therapy	0	(0.0)	2	(2.1)	2	(0.8)
Contact of an MDR TB Patient*	0	(0.0)	0	(0.0)	0	(0.0)
Missed Contact*	0	(0.0)	0	(0.0)	0	(0.0)
Post-organ Transplantation	0	(0.0)	0	(0.0)	0	(0.0)
Multiple Factors	7	(4.8)	4	(4.2)	11	(4.5)
Other	4	(2.7)	4	(4.2)	8	(3.3)
Unknown	1	(0.7)	4	(4.2)	5	(2.1)
TOTAL	147	(100.0)	96	(100.0)	243	(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), 2010

Aside from the commonly collected risk factors (i.e. HIV status, drug/alcohol usage, occupation, country of birth), 31.3 percent (N=76) 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 2010. Overall, the most commonly reported factors were diabetes (N=18, 7.4%), being a contact to an infectious TB patient (N=13, 5.3%) and having some form of immunosuppression (not HIV/AIDS) (N=13, 5.3%).

For male TB cases, diabetes was cited as the most common additional risk factor (N=12, 8.2%) but for females, immunosuppression (not HIV/AIDS) was the most prevalent risk factor reported (N=8, 8.3%). It was also more common for females to indicate incomplete treatment of latent tuberculosis infection (LTBI) as a risk factor compared to males (N=5, 5.2% for females; N=4, 2.7% for males).

When more than one additional risk factor was cited, diabetes and immunosuppression (not HIV/AIDS) were the most frequent factors identified together (N=3).

**Drug Susceptibility Test Results
Among Culture Confirmed Tuberculosis Cases
General Population vs State Inmates
New York State (Exclusive of New York City), 2008-2010**

	2008			2009			2010		
	General Population No. (%)	Inmate Population No. (%)	Total Population No. (%)	General Population No. (%)	Inmate Population No. (%)	Total Population No. (%)	General Population No. (%)	Inmate Population No. (%)	Total Population No. (%)
Susceptibility test reported	225	2	227	180	1	181	168	1	169
Susceptible to all first-line drugs	190 (84.4)	2 (100.0)	192 (84.6)	151 (83.9)	1 (100.0)	152 (84.0)	135 (80.4)	1 (100.0)	136 (80.5)
Resistant to INH and RIF (MDR TB)	1 (0.4)	0 (0.0)	1 (0.4)	5 (2.8)	0 (0.0)	5 (2.8)	3 (1.8)	0 (0.0)	3 (1.8)
INH resistant and RIF susceptible	20 (8.9)	0 (0.0)	20 (8.8)	16 (8.9)	0 (0.0)	16 (8.8)	13 (7.7)	0 (0.0)	13 (7.7)
RIF resistant and INH susceptible	3 (1.3)	0 (0.0)	3 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	4 (2.4)	0 (0.0)	4 (2.4)
Resistant to first-line drugs other than INH and RIF	11 (4.9)	0 (0.0)	11 (4.8)	8 (4.4)	0 (0.0)	8 (4.4)	13 (7.7)	0 (0.0)	13 (7.7)

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), 2008-2010

In 2010, drug susceptibility tests were performed on 99.4 percent (N=169/170) of culture-positive TB cases in New York State (exclusive of New York City). MDR TB was identified in three cases. Thirteen culture-positive cases were resistant to isoniazid (INH), an 18.8 percent decrease from the 16 cases in 2009. Four rifampin (RIF) resistant cases were reported in 2010. 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), 2008-2010

	2008			2009			2010		
	US-Born Population		Total Population	US-Born Population		Total Population	US-Born Population		Total Population
	No.	(%)		No.	(%)		No.	(%)	
Susceptibility test reported	50		227	57		181	45		169
Susceptible to all first-line drugs	46	(92.0)	191	47	(82.5)	152	32	(71.1)	136
Resistant to INH and RIF (MDR TB)	0	(0.0)	1	2	(3.5)	5	1	(2.2)	3
INH resistant and RIF susceptible	2	(4.0)	20	4	(7.0)	16	3	(6.7)	13
RIF resistant and INH susceptible	0	(0.0)	3	0	(0.0)	0	3	(6.7)	4
Resistant to first-line drugs other than INH and RIF	2	(4.0)	11	4	(7.0)	8	6	(13.3)	13

*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), 2008-2010

In 2010, nearly 67 percent of cases with MDR TB in New York State (exclusive of New York City) were foreign-born (N=2/3). Only 23 percent of patients with TB susceptible to rifampin (RIF) yet resistant to isoniazid (INH) were U.S.-born (N=3/13). The percentage of U.S.-born cases resistant to first-line drugs other than RIF and INH has steadily increased between 2008 and 2010.

Drug Susceptibility Test Results MDR TB

New York State (Exclusive of New York City), 2005-2010

	2005	2006	2007	2008	2009	2010
Culture Positive	236	239	191	229	182	170
Susceptibility Test Reported	236	238	188	227	181	169
Resistant to INH and RIF (MDR TB)*	3 (1.3%)	3 (1.3%)	0 (0.0%)	1 (0.4%)	5 (2.8%)	3 (1.8%)

*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), 2005-2010

In New York State (exclusive of New York City), susceptibility results were reported for 99.4 percent (N=169/170) of culture-positive cases in 2010. There were three MDR TB cases, a decrease from the five cases identified in 2009.

Drug Susceptibility Test Results MDR TB

New York City, 2005-2010

	2005	2006	2007	2008	2009	2010
Culture Positive	745	553	709	688	539	512
Susceptibility Test Reported	738	549	702	680	534	505
Resistant to INH and RIF (MDR TB)*	24 (3.3%)	18 (3.3%)	9 (1.0%)	11 (2.0%)	9 (1.7%)	11 (2.2%)

*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, 2005-2010

In New York City in 2010, susceptibility results were reported for 98.4 percent (N=507/515) of culture-positive TB cases. The number of MDR TB cases increased from 9 in 2009 to 11 in 2010.

Tuberculosis Genotyping Summary by Year

New York State (Exclusive of New York City), 2008-2010

	2008		2009		2010	
	N	(%)	N	(%)	N	(%)
Initial Positive Cultures	233		188		172	
False Positives	5	(2.1)	5	(2.7)	2	(1.2)
Control Strain	2	(0.9)	0	(0.0)	0	(0.0)
Contamination	0	(0.0)	1	(0.5)	1	(0.6)
M. bovis BCG	3	(1.3)	4	(2.1)	1	(0.6)
True Positives	228	(97.9)	183	(97.3)	170	
Isolates Available	216		182		170	
Complete Genotype*	95	(44.0)	147	(80.8)	166	(97.6)
Partial Genotype	117	(54.2)	165	(90.7)	167	(98.2)
No Result	4	(1.9)	17	(9.3)	3	(1.8)

*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), 2008-2010

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 2010, 100 percent (N=170/170) of isolates in New York State (exclusive of New York City) were available for genotyping. A spoligotype and MIRU result were available for 97.6 percent of these isolates (N=166/170). Since 2009, due to diminishing resources, RFLP has no longer been performed on all specimens.

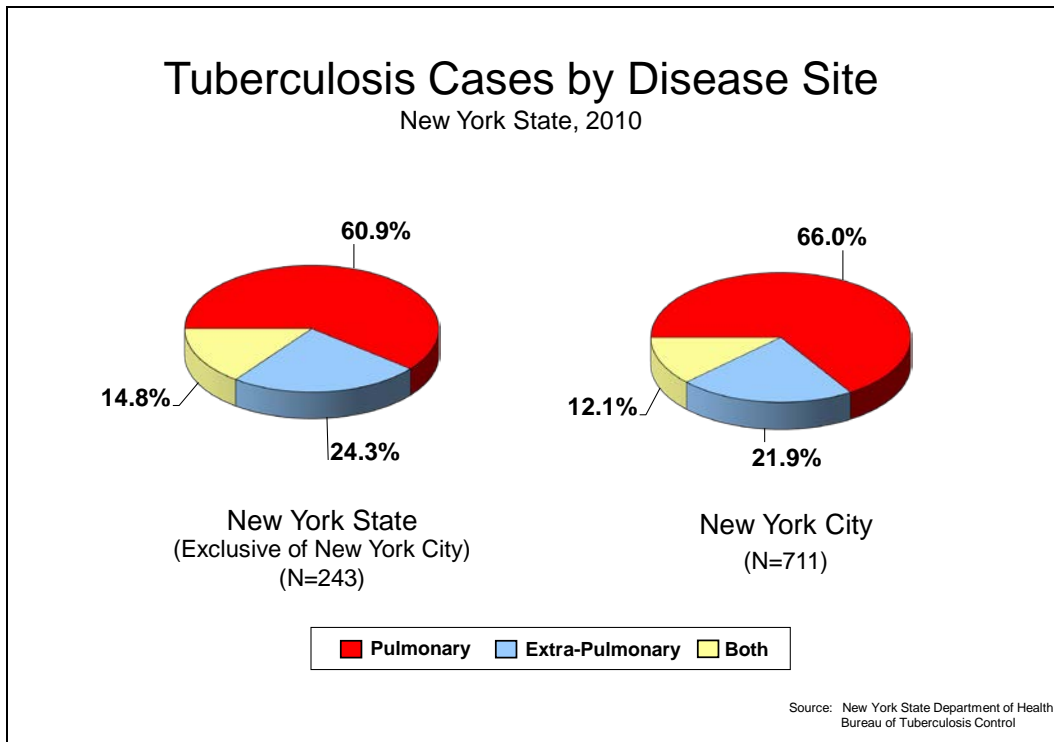


Figure 18: Tuberculosis Cases by Primary Disease Site, New York State, 2010

Pulmonary TB was the primary site of disease in 64.7 percent (N=617) of cases reported in New York State in 2010. Compared to 2009, this was 5.2 percent fewer pulmonary TB cases (N=651).

Similar to 2009, sixty-one percent (N=148) of TB cases in New York State (exclusive of New York City) were reported to have pulmonary TB in 2010. In New York City, 469 pulmonary TB cases were reported, a decrease of 6.4 percent from the 501 identified in 2009.

Of the TB cases in New York State (exclusive of New York City) with extra-pulmonary TB disease (24.3%, N=59), the most common sites of disease were lymphatic (55.9%, N=33), pleural (32.2%, N=19), and genitourinary (20.3%, N=12). The most frequently reported extra-pulmonary sites in New York City were lymphatic (45.5%, N=71), pleural (25.0%, N=39), and bone (7.1%, N=11).

Treatment Status of Tuberculosis Cases Reported in 2009*
New York State (Exclusive of New York City)

TREATMENT STATUS	Non-MDR		MDR	
	No.	(%)	No.	(%)
Completed	197	(84.2)	3	(60.0)
Prolonged Therapy	0	(0.0)	2	(40.0)
Died	18	(7.7)	0	(0.0)
Uncooperative/Refused	3	(1.3)	0	(0.0)
Lost	4	(1.7)	0	(0.0)
Adverse Treatment Event	2	(0.9)	0	(0.0)
Other or Unknown	10	(4.3)	0	(0.0)
TOTAL	234	(100.0)	5	(100.0)

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

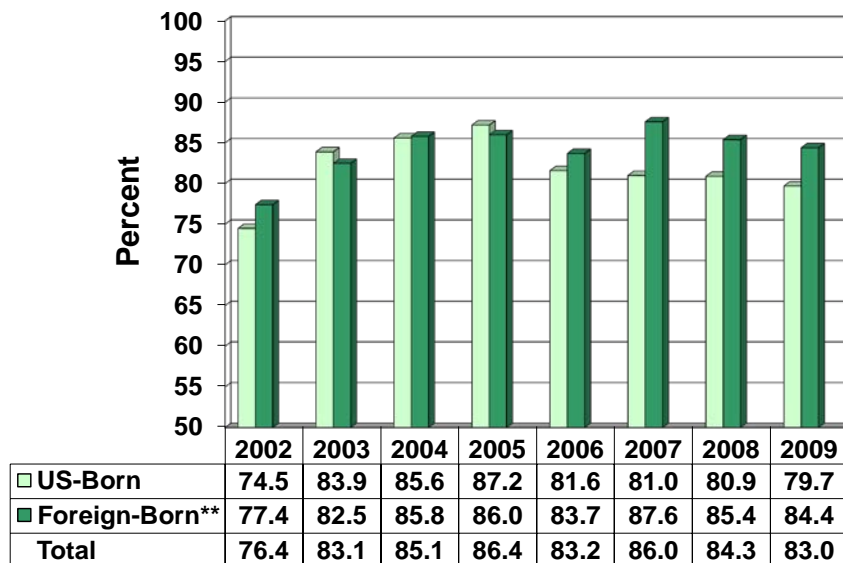
Source: New York State Department of Health
Bureau of Tuberculosis Control

Table 17: Treatment Status of Tuberculosis Cases, New York State (Exclusive of New York City), 2009

Of the 234 non-MDR TB cases in New York State (exclusive of New York City) who were alive at diagnosis in 2009 (the most recent year for which complete information is available), 84.2 percent completed a full course of therapy with a completion index of 94.3 (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), 2002-2009



* 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 2009 (the most recent year for which complete information is available), 83.0 percent (N=171/206) of patients in New York State (exclusive of New York City) eligible*** to complete treatment within 12 months, did so. This is less than the national objective of 90 percent and the 2009 NYS objective (88%). An additional 8.3 percent (N=17/206) of patients completed treatment in more than 12 months, for an overall completion rate of 91.3 percent.

A larger percentage of foreign-born patients completed therapy within 12 months than U.S.-born in 2009 (84.4% and 79.7%, 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.

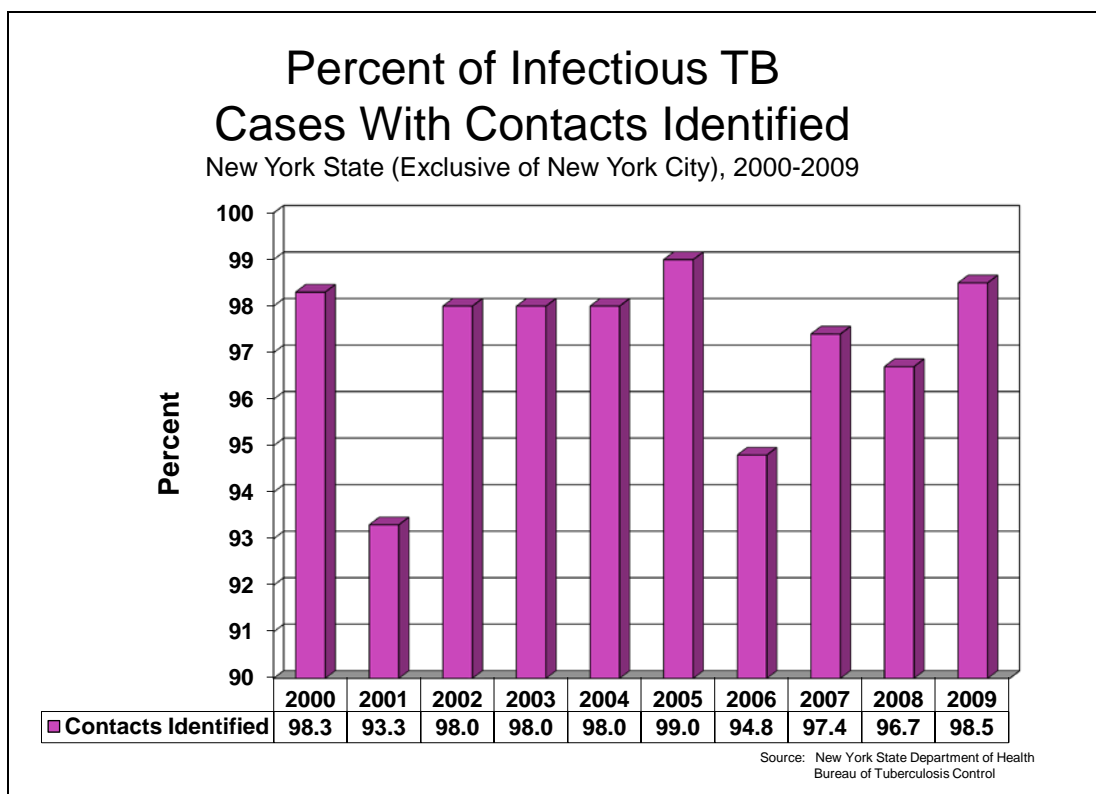


Figure 20: Percent of Infectious TB Cases with Contacts Identified, New York State (Exclusive of New York City), 2000-2009

In 2009 (the most recent year for which complete information is available), 98.5 percent (N=65) of infectious TB cases in New York State (exclusive of New York City) had contacts identified. This represents an increase from the 96.7 percent (N=89) for whom contacts were identified in 2008 and exceeds the state objective of 90 percent. 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), 2000-2009

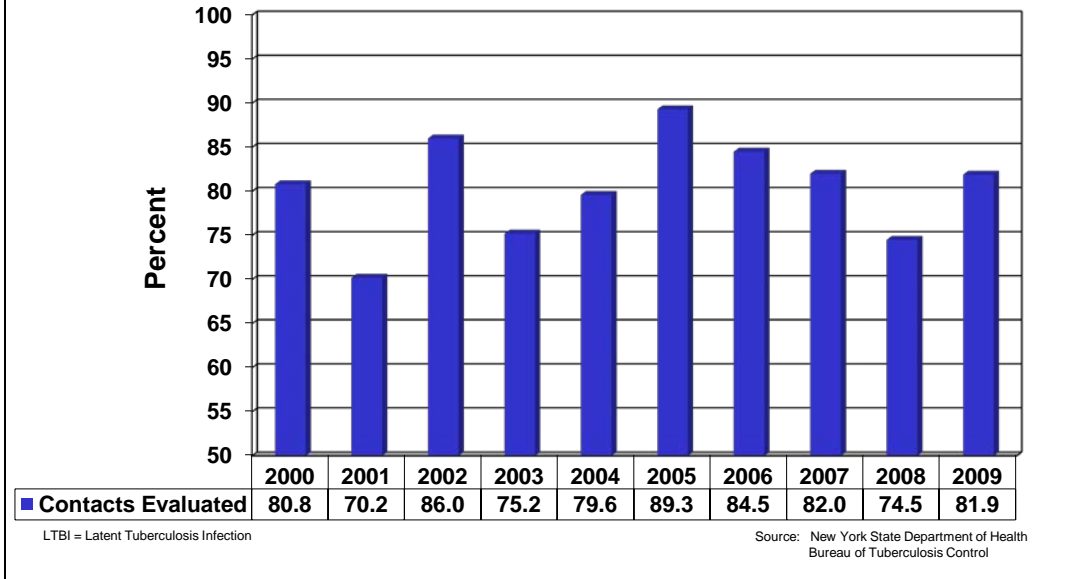
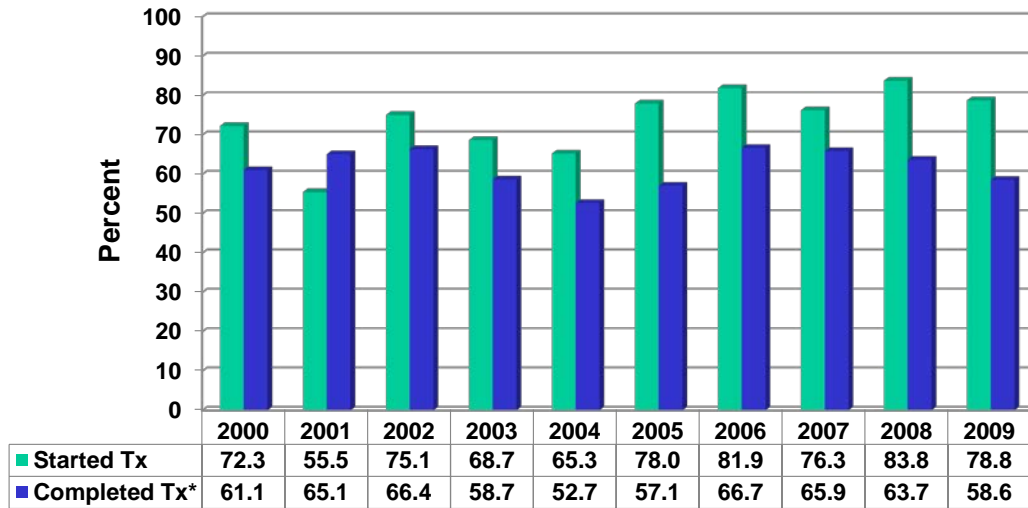


Figure 21: Percent of Contacts to Infectious TB Cases Evaluated for LTBI, New York State (Exclusive of New York City), 2000-2009

Eighty-two percent (N=1,448) of contacts to infectious TB cases in New York State (exclusive of New York City) were evaluated for latent tuberculosis infection (LTBI) in 2009 (the most recent year for which complete information is available). Although this is an increase from the 74.5 percent (N=2,645) evaluated in 2008, it still does not meet our state objective of 95 percent.

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

New York State (Exclusive of New York City), 2000-2009



*Among those who started treatment.

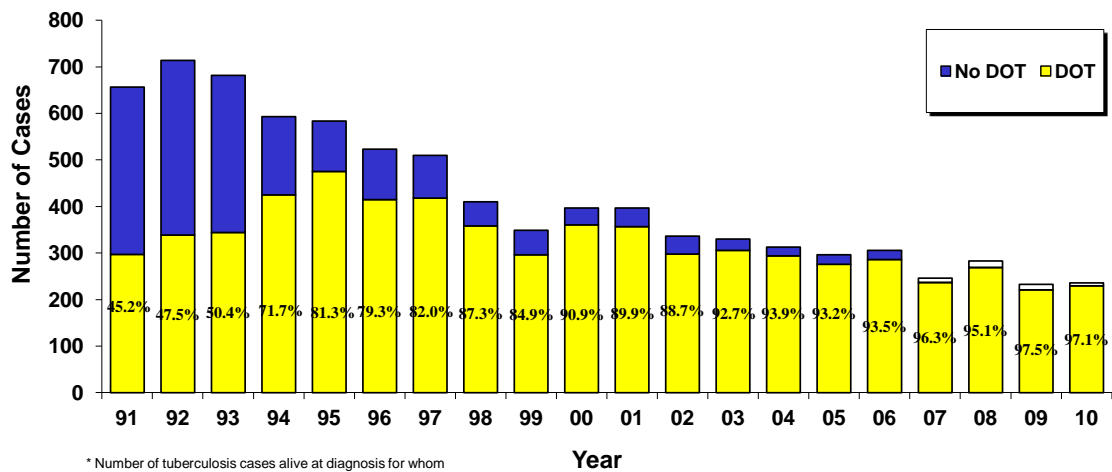
Source: New York State Department of Health
Bureau of Tuberculosis Control

Figure 22: Percent of Infected Contacts to Infectious TB Cases Placed on Treatment and Completed, New York State (Exclusive of New York City), 2000-2009

Seventy-nine 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 2009 (the most recent year for which complete information is available), a decrease from 83.8 percent in 2008, but still meeting the state objective of 70 percent. Fifty-nine percent of those starting treatment actually completed the prescribed regimen.

Number of Tuberculosis Cases* Receiving Any Directly Observed Therapy

New York State (Exclusive of New York City), 1991-2010



* 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), 1991-2010

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 97.1 percent in 2010.

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.