TUBERCULOSIS IN NEW YORK CITY 1991

Information Summary

Bureau of Tuberculosis Control
New York City Department of Health

New York City continues to have one of the highest case rates of tuberculosis in the country. This report presents the demographic and geographic distribution of tuberculosis cases reported and confirmed in New York City in 1991. Rate calculations of cases per 100,000 population are based upon 1990 census data.*

Tuberculosis cases in New York City continued their increasing trend in 1991. Case rates have been rising since 1979 and are now 50.2 per 100,000 population (Table 1, Figures 1 and 2). In 1991 there were 3,673 new cases of tuberculosis reported in the City. This incidence represents a 4.3% annual increase over the 3,520 cases reported in 1990, and a 143% increase over 1980, when 1,514 cases were reported. The 1991 case rate is the highest in two decades (Table 1). This rate is about five times the national case rate of 10.4, and in 1991 New York City accounted for 14% of the nation's 26,283 reported tuberculosis cases.

The unabated high incidence of disease in adults aged 25-44 (Table 2, Figure 3) remains of special concern, in part because these individuals are of child rearing age. In 1991, tuberculosis cases among children under 15 years old rose to 159, an increase of 115% from the 74 children reported in 1989.

*This report uses the 1990 Census to calculate case rates. Therefore, numbers of TB cases will be used to discuss the differences between 1991 and 1990; in 1990, the 1980 census was used to determine rates per 100,000 population.

Population differences between the 1980 and 1990 census

As can be seen in Table 3, there was an increase in population of all racial/ethnic groups except non-Hispanic whites. The largest population increase was among Asians (77.3%) with a doubling of that population in the 35-64 age group. Hispanics had the second highest increase in population (26.9%). This increase was most apparent in persons more than 25 years old, with the 65+ age group increasing by 65.4%. Census-enumerated non-Hispanic blacks increased by 9.2% as a whole, with decreases in the 10-19 year old group and the largest increase (30.2%) in the oldest age group. Non-Hispanics whites decreased 14.7%, with decreases in all age categories except those 35-44 years old; in this age group the recorded population increased 25.8% in the decade.

Age Distribution

In 1991 there were 159 TB cases reported in children younger than 15 years, an increase of 115% over the 74 cases reported in 1989. There was a 3.8% decrease in incidence among 25-34 year olds, while those 35-44 showed a 13.5% increase. Cases among those aged 45 and older increased slightly (3.3%).

The continuing increase in cases among children under 15 years old is of particular concern. Among those aged 0 to 5 years (Table 4), non-Hispanic black children represented 62 of the 111 cases (55.9%). A similar proportion of black adults are represented in the adult TB cases. Males represented 57.6% of children; males represent a higher proportion of adult cases.

Ethnic/Racial Distribution of Tuberculosis Cases

Non-Hispanic blacks (males and females) represented 56.4% of all cases (Table 2). Their case rate of 112.2 per 100,000 was the highest of any racial/ethnic group. Hispanics represented 25.4% of all cases and had a case rate of 52.3 per 100,000. Blacks and Hispanics together represent more than 80% of tuberculosis cases reported in the City (Figure 4), as they have since at least 1984 (Figure 5).

The case rate of non-Hispanic white New Yorkers remained the lowest of all racial/ethnic groups, even though the rate of 13.2 per 100,000 population is higher than the national average of 10.4 and represents a 5.3% increase in active cases since 1990. Asians had the largest increase in cases (55.6%) over 1990 of any racial/ethnic group. Their case rate of 46.9 per 100,000 approximates that of Hispanics. As seen in Figure 6, the age peak between 25-44 years was highest for Blacks and Hispanics, whereas Asians had higher case rates in the older ages. Asian males 65 years and older had a case rate of 226.9 per 100,000, which is higher than that in any other non-black age group.

Distribution of Tuberculosis Cases by Sex (Tables 5 and 6, Figures 7 through 9.)

The incidence of tuberculosis among males remains more than two and a half times that of females (74.8 vs 28.3 cases per 100,000, respectively, Figure 7). The annual increase in TB cases from 1990 to 1991 in males was 3.3%; whereas in females it was double that at 6.8%. This higher annual rate of increase in females was also noted in 1990.

Males

The largest increase during the past year was among Asian men, in whom cases rose 54.5%, from 99 to 153. As in previous years, men of all races aged 25 to 44 represented about 60% of all male cases (Table 5).

As shown in Table 5, non-Hispanic black males continued to experience the highest incidence of tuberculosis among all racial/ethnic groups, with a case rate of 174.7 per 100,000 population. As in the previous seven years, incidence rates among black males in 1991 peaked in the 35-44 year old age group with a case rate of 469.7 per 100,000, the highest in any age, sex, or racial/ethnic group, and almost 45 times the national average.

Although the case rate among all males increased 3.3% over 1990, it increased in those aged 35-44 by 13.8% and in black men in that age group by 15.7%. Figure 8 depicts the trend of disease among non-Hispanic black males aged 25-44 years from 1984 to 1991.

Females

There was a 6.8% increase among females (1030 to 1100 cases) from 1990 to 1991 (Table 6). The increase in cases among women was highest among Asians (57.4%, from 61 to 96 cases) and second highest among whites (40.7% from 81 to 114 cases). Hispanic and black females had little change in the number of cases over the past year. The overall incidence in black women remains more than two times that of Hispanic women, and white women have maintained the lowest rate in all racial/ethnic groups (6.8 per 100,000 population).

Figure 9 shows cases among black women over an eight year period. The age peak for women, 25-44 years is similar to that of males. Of note is that 20.6% of cases in women are among those 55 years old or more, whereas in males the proportion of older men represents 15% of TB cases.

Geographic Distribution

Incidence rates by health district of residence were calculated for 1980 and 1991; age adjusted and crude rates are presented in Table 7. Age standardization is a numerical technique that adjusts observed rates in different populations to a standard population age distribution so that different populations can be compared. Age standardization of the rates removes age, per se, as a possible explanation for the difference in rates.

The five districts with the highest age-adjusted case rates (over 100 per 100,000) in 1991 were Central Harlem and the Lower East Side in Manhattan; Bedford in Brooklyn, and Morrisania and Mott Haven in the Bronx. The annual increase of TB cases was 3.5% in Manhattan, 19.1% in the Bronx, and 3.8% in Brooklyn. Queens saw a 6.6% decrease in cases. Figure 10 depicts the distribution of TB cases by borough or residence.

Manhattan

With 1,353 cases, Manhattan had 37% of all the City's reported cases in 1991. The age-adjusted rate in Central Harlem remains the highest in the City at 218.9 per 100,000; the Lower East Side was third highest with a rate of 121.4. There were increase in cases in the Lower West Side, Riverside and Kips Bay.

Bronx

The Bronx experienced the largest increase in cases over 1990 of any borough. With a case rate of 124.3 per 100,000, Mott Haven had the second highest age-adjusted case rate in the

city. Morrisania had an increase of only six cases but had the fifth highest rate in the City, at 100.0 per 100,000.

Brooklyn

Bedford had the fourth highest case rate in the City (111.8) and a 17% increase in cases over 1990. The increase in Brooklyn cases was distributed among seven of its 10 districts. There were decreases in cases in Bushwick, Flatbush, and Williamsburg.

Queens

Queens was the only borough in 1991 with a decrease in cases, and all of its case rates were below the citywide age-adjusted rate. Corona had a 42.3% increase in cases over the past year (104 vs 148).

Staten Island

Thirty-seven cases of tuberculosis were reported from Staten Island in 1991, yielding an age-adjusted rate of 9.6 per 100,000, the lowest of any borough.

Area of Birth of Patients With Tuberculosis

In 1991, 23.2% of all newly reported cases of tuberculosis occurred among individuals born outside the continental United States (Table 8). During the seven previous years, approximately one-quarter of all cases were in this category. The Caribbean area accounted for 399 of the 854 (46.7%) tuberculosis cases among those born outside the United States, the largest group represented. A total of 87 countries were reported as place of birth for patients with tuberculosis born outside the US.

Tuberculosis among Immigrants

The United States Public Health Service's Foreign Quarantine Service screens immigrants for tuberculosis before they enter this country. The screening process consists of a general physical examination and, for persons 15 years of age and older (one year of age for Indochinese refugees), a chest x-ray. Those under 15 years old receive a chest x-ray if clinically indicated, or if they are members of a family where one or more persons had an abnormal x-ray.

Individuals with abnormal results on chest x-rays are then classified for tuberculosis control purposes as either having, or as suspected of having, tuberculosis in an active state (Class A), or as infected, with no evidence of active disease (Class B). Among New York City immigrants during 1991, 60 Class A and 1,430 Class B persons were screened within two weeks of entering into the U.S. As a result of this screening, three Class A and three Class B immigrants were documented to have active tuberculosis on the basis of a positive culture for M. tuberculosis.

Table 9 summarizes these data for the years 1977 to 1991. In 1991, the numbers of both Class A and Class B immigrants has decreased; however, the numbers of active TB cases identified was higher than in previous years.

Drug Resistance

In 1991, New York City became the first area in the country to implement mandatory reporting of drug susceptibility of M. tuberculosis. It is expected that complete information on the extent of drug resistance will be available for 1992. However, in 1991, 366 patients were documented to have isolates resistant to at least both isoniazid and rifampin, the two most effective anti-TB drugs. This includes 22 of the 141 patients with a previous episode of reported tuberculosis (reactivation).

To determine the prevalence of drug resistance in the City in April 1991, the New York City Department of Health collaborated with the CDC to conduct a one month study of drug resistance. All cultures positive for M. tuberculosis were collected from laboratories throughout the city, and 466 viable cultures were analyzed at the CDC. One-third had resistance to one or more anti-TB drugs, and nearly one in five had resistance to both isoniazid (INH) and rifampin (RIF), the two most active anti-TB drugs. Patients who were currently or previously treated with anti-TB drugs were more likely to have resistant organisms than those who had not been previously treated. Among never-treated patients, 23% had isolates resistant to one or more anti-TB drugs, 15% had isolates resistant to at least INH, and 7% had isolates resistant to at least both INH and RIF. Among currently or previously treated patients, 44% had isolates resistant to one or more anti-TB drugs, 36% had isolates resistant to INH, and 30% had isolates resistant to both INH and RIF.

In 1990 and 1991, three outbreaks of multi-drug resistant tuberculosis (MDR TB) were investigated by the CDC and the New York City Department of Health in New York City hospitals. Eighty-two cases of MDR TB were identified as likely occurring due to transmission within these institutions. At least 85% of the patients with MDR TB in these outbreaks were HIV seropositive.

Location of Disease

In 1991 pulmonary tuberculosis accounted for 84.7% of all cases. Of persons with extrapulmonary disease, lymphatic tuberculosis was the most prevalent form of disease. Of all cases reported in 1991, 5.8% had both pulmonary and extrapulmonary disease, an increase from the 4.3% reported in 1990 (Table 10).

Reactivated Cases

Patients previously treated for tuberculosis are counted as new cases if they have not been under medical supervision for twelve months or more and are diagnosed again with disease. There were 141 reactivated cases in 1991, which represents a 16.3% increase over the 118 reactivated cases reported in 1990 (Table 11). Seventy-nine per cent of reactivators were males, and 63.8% of these reactivated cases occurred among those aged 25-44 years. Reactivators accounted for 3.8% of all cases in 1991.

Homeless Tuberculosis Patients

Data on homelessness and TB has been compiled by the city since 1985. Improved computerized matching of homeless shelter addresses to the TB Registry in 1991 has identified 748 newly reported cases who had no permanent residence. This represents a substantial increase over the number of homeless cases identified in 1990 (454); however, the improved identification method is undoubtedly responsible for at least a large part of the increase.

Homeless individuals have continued to represent a large proportion of tuberculosis cases; it is estimated that between 20% and 30% of TB patients are homeless. Because of their transient lifestyle and other medical and social problems, homeless tuberculosis patients are difficult to treat. Incentives to adherence, including a specialized TB shelter, are used to encourage completion of tuberculosis treatment among this population.

Tuberculosis Mortality

Mortality figures presented in this year's report are based on statistics issued by the Bureau of Health Statistics and Analysis. In 1991 there were 241 deaths in New York City with tuberculosis listed as the underlying cause on the death certificate. In 1990 there were 250 such deaths. The crude tuberculosis mortality rate was 3.3 per 100,000 (Table 12, Figure 2). This death rate is far in excess of the national mortality statistics which reported a provisional 1990 rate of 0.7%. There were an additional 420 deaths for which TB was noted as a secondary cause of death. Of these deaths, 303 (72%) listed AIDS and HIV as the underlying cause of death.

Table 1

Tuberculosis Incidence
New York City 1920 - 1991

Year	Number*	Rate Per 100,000**
1920	14,035	246.9
1930	11,821	170.2
1940	8,212	110.0
1950	6,518	98.0
1960	4,699	60.4
1970	2,590	32.8
1971	2,572	32.6
1972	2,275	28.8
1973	2,101	26.6
1974	2,022	25.6
1975	2,151	27.2
1976	2,151	27.2
1977	1,605	21.1
1978***	1,307	17.2
1979	1,530	20.1
1980	1,514	19.9
1981	1,582	22.4
1982	1,594	22.5
1983	1,651	23.4
1984	1,629	23.0
1985	1,843	26.0
1986	2,223	31.4
1987	2,197	31.1
1988	2,317	32.8
1989	2,545	36.0
1990	3,520	49.8
1991	3,673	50.2
1992****	3,795	
1993****	4,425	

* For "phthisis," or pulmonary cases, 1920-1940; thereafter all forms of tuberculosis.

** Population based on census data for each decade.

*** Case definition revised in 1978 to include persons who had verified disease in the past and were discharged or lost to supervision for more than 12 months and had verified disease again.

**** PROJECTIONS

Table 2

Tuberculosis Incidence Rates (per 100,000)
By Race/Ethnicity and Age
New York City, 1991

Race	N (Rate) 0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	TOTAL
	Age Group										
White	9 (5.9)	1 (0.8)	1 (0.8)	- (-)	8 (3.8)	66 (11.6)	125 (25.6)	68 (19.8)	52 (15.1)	89 (13.7)	419 (13.2)
Black	62 (40.7)	18 (12.5)	9 (6.7)	27 (18.5)	96 (62.4)	546 (164.1)	714 (261.8)	314 (157.7)	160 (112.3)	127 (79.7)	2073 (112.2)
Hispanic	36 (21.6)	5 (3.3)	11 (7.6)	22 (15.1)	59 (35.4)	290 (83.9)	284 (109.0)	117 (67.0)	61 (50.6)	47 (43.2)	932 (52.3)
Asian	4 (10.5)	2 (6.1)	1 (3.0)	9 (24.3)	22 (50.1)	56 (45.8)	39 (40.9)	36 (63.8)	23 (60.8)	57 (166.3)	249 (46.9)
TOTAL	111 (21.8)	26 (5.7)	22 (4.9)	58 (12.3)	185 (32.1)	958 (70.0)	1162 (104.1)	535 (69.1)	296 (45.9)	320 (33.6)	3673 (50.2)

Table 3

Population Differences
By Age, Sex and Race/Ethnicity
1980 Census vs. 1990 Census
% Increase

Age Group

Race	(%) 0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	TOTAL
White	-2.8	-15.2	-31.1	-35.6	-27.4	-7.1	25.8	-17.9	-30.5	-12.4	-14.7
Black	7.4	5.2	-10.2	-17.2	2.4	22.3	23.7	15.9	2.5	30.2	9.2
Hispanic	14.9	13.7	4.7	1.2	22.8	39.1	45.0	31.3	43.2	65.4	26.9
Asian	45.6	38.7	52.7	66.4	76.2	79.9	114.4	95.9	91.5	72.3	77.3
TOTAL	8.4	2.4	-11.0	-16.4	-4.4	13.9	34.1	2.9	-12.6	0.3	3.6

Table 4

Tuberculosis Cases by Race, Ethnicity and Age
In Children Under 5 Years
1991

Age In Months

RACE	0-11	12-23	24-35	36-47	48-59	TOTAL
White	2	1	2	1	3	9
Black	16	19	13	8	6	62
Hispanic	4	13	11	5	3	36
Asian	-	2	-	1	1	4
TOTAL	22	35	26	15	13	111

Table 5

Tuberculosis Incidence (Rate per 100,000) in Males
By Race/Ethnicity and Age
New York City, 1991

Race	N (Rate) 0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	TOTAL
				Age Group							
White	3 (3.8)	- (-)	1 (1.5)	- (-)	5 (4.8)	56 (19.5)	105 (42.9)	56 (33.8)	40 (25.0)	39 (15.8)	305 (20.4)
Black	38 (49.3)	8 (11.0)	6 (8.4)	4 (5.6)	49 (68.9)	357 (240.2)	552 (469.7)	243 (290.9)	115 (198.8)	72 (130.9)	1444 (174.7)
Hispanic	21 (24.8)	5 (6.6)	3 (4.1)	11 (14.8)	36 (43.1)	200 (119.7)	230 (191.0)	95 (119.8)	40 (77.0)	30 (76.1)	671 (78.9)
Asian	2 (10.1)	1 (5.9)	1 (5.9)	2 (10.5)	10 (45.9)	31 (50.5)	26 (52.8)	27 (93.1)	18 (98.4)	35 (226.9)	153 (57.1)
TOTAL	64 (24.6)	14 (6.0)	11 (4.8)	17 (7.2)	100 (35.7)	644 (96.8)	913 (171.6)	421 (117.8)	213 (73.9)	176 (49.3)	2573 (74.8)

Table 6

Tuberculosis Incidence (Rate per 100,000) in Females
By Race/Ethnicity and Age
New York City, 1991

Race	Age Group N (Rate) 0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	TOTAL
White	6 (8.1)	1 (1.6)	- (-)	- (-)	3 (2.8)	10 (3.5)	20 (8.2)	12 (6.7)	40 (6.5)	50 (12.4)	114 (6.8)
Black	24 (31.8)	10 (14.1)	3 (4.1)	23 (30.9)	47 (56.9)	189 (102.7)	162 (104.4)	71 (61.4)	45 (53.1)	55 (52.7)	629 (61.6)
Hispanic	15 (18.3)	- (-)	8 (11.2)	11 (15.4)	23 (27.7)	70 (50.4)	54 (38.5)	22 (23.1)	21 (30.6)	17 (24.5)	261 (28.0)
Asian	2 (10.9)	1 (6.3)	- (-)	7 (38.6)	12 (54.2)	25 (40.9)	13 (28.3)	9 (32.8)	5 (25.6)	22 (116.7)	96 (36.4)
TOTAL	47 (18.8)	12 (5.3)	11 (4.9)	41 (17.5)	85 (28.7)	314 (44.6)	249 (42.6)	114 (27.4)	83 (23.3)	144 (24.2)	1100 (28.3)

TABLE 7

Crude and Age-Adjusted Tuberculosis Rates
New York City, 1980 and 1991

Borough	Health District	Cases	Rate per 100,000 Pop. 1991 Crude	1991 Age Adjusted*	1980 Age Adjusted*
Manhattan	Central Harlem	255	220.8	218.9	78.6
	East Harlem	119	93.5	86.8	27.5
	Kips Bay-Yorkville	49	20.8	16.4	9.9
	Lower East Side	331	138.2	121.4	68.3
	Lower West Side	248	84.3	64.9	34.6
	Riverside	181	86.6	70.3	27.9
	Washington Heights	170	63.8	60.9	26.5
	Total Manhattan	1353			
Bronx	Fordham-Riverdale	90	36.7	35.8	16.5
	Morrisania	137	94.6	100.0	31.4
	Mott Haven	164	126.3	124.3	28.8
	Pelham Bay	50	22.9	22.1	9.8
	Tremont	154	80.8	89.8	33.3
	Westchester	77	28.0	26.9	9.3
	Total Bronx	672			
Brooklyn	Bay Ridge	33	13.8	12.8	8.8
	Bedford	262	112.5	111.8	46.7
	Brownsville	159	57.1	57.5	21.4
	Bushwick	121	66.3	67.1	37.0
	Flatbush	164	32.7	30.8	18.2
	Fort Greene	127	84.5	82.8	55.2
	Gravesend	55	19.4	18.5	13.2
	Red Hook-Gowanus	56	53.0	44.2	24.2
	Sunset Park	46	27.0	28.2	15.8
	W'burg-Gnspt.	61	39.1	39.3	27.0
	Total Brooklyn	1084			
Queens	Astoria-L.I.C.	81	34.3	30.5	17.7
	Corona	148	50.9	46.1	13.5
	Flushing	64	14.0	13.6	10.3
	Jamaica East	98	29.1	27.9	17.8
	Jamaica West	91	25.2	24.5	8.6
	Maspeth-Forest Hills	45	16.7	14.5	5.7
	Total Queens	527			
Staten Island	Richmond	37	9.8	9.6	7.3
TOTAL NYC		3673	50.2	46.7	19.9

* 1991 crude rates are based on the 1990 Census for New York City.
1980 and 1991 age-adjusted rates are based on the 1980 Census by the method of direct adjustment.

Table 8

Numbers of Tuberculosis Cases
By Age and Area of Birth
New York City, 1991

AGE GROUPS

AREA OF BIRTH	0-9	10-19	20-24	25-34	35-44	45-54	55+	TOTAL
AFRICA	-	1	2	12	5	4	3	27
EUROPE	2	1	1	11	15	4	30	64
CENTRAL/S AMER	7	12	21	45	34	15	17	151
CARIBBEAN*	5	9	18	118	128	61	60	399
SOUTHEAST ASIA	-	4	5	9	9	13	7	48
INDO/PAKISTAN	2	1	6	19	9	4	2	43
ASIA	-	4	8	15	15	16	55	113
OTHER	1	-	-	1	5	-	2	9
NON USA	17	32	61	230	220	117	176	854
USA	120	48	124	728	941	418	440	2819
TOTAL	137	80	185	958	1162	535	616	3673

* Includes Puerto Rico

Table 9

Tuberculosis Cases among Immigrants*
1977 - 1991

	CLASS A (Active TB)		CLASS B (TB Infection - no Active Disease	
	# Screened	TB Cases	# Screened	TB Cases
1977	129	3	1,129	0
1978	184	2	998	0
1979	129	4	786	0
1980	86	6	788	0
1981	124	2	700	1
1982	113	4	883	0
1983	52	5	774	0
1984	71	1	756	0
1985	147	4	1,050	0
1986	187	0	1,156	0
1987	362	6	1,450	3
1988	171	0	1,542	1
1989	114	0	2,499	1
1990	201	2	2,068	0
1991	60	3	1,430	3

* Within two weeks of arrival in the United States

Table 10

Tuberculosis Cases by
Site of Disease

	Number of Cases	(%)
Pulmonary	3,111	(84.7)
Lymphatic	156	(4.2)
Pleural	115	(3.1)
Bone/Joint	88	(2.4)
Genitourinary	39	(1.1)
Meningeal	34	(0.9)
Miliary	33	(0.9)
Peritoneal	24	(0.6)
Other	73	(2.0)
Pulmonary and Extrapulmonary	212	(5.8)

Table 11

Tuberculosis Cases Reported in 1991 with Reactivated Disease by Age and Sex

	Age Group					
	20-24	25-44	45-54	55-64	65+	TOTAL
Male	-	69	25	13	4	111
Female	3	21	1	2	3	30
TOTAL	3	90	26	15	7	141

Table 12

Tuberculosis Deaths and Rate (per 100,000)
New York City
1910 - 1991

Year	# Deaths	Rate
1910	8,832	197.5
1920	7,915	144.1
1930	4,574	68.2
1940	3,680	50.0
1950	2,173	27.4
1960	824	10.6
1970	432	5.5
1980	143	2.0
1981	155	2.2
1982	168	2.4
1983	151	2.1
1984	168	2.4
1985	155	2.2
1986	186	2.6
1987	219	3.1
1988	247	3.5
1989	233	3.3
1990	250	3.5
1991	241	3.3

Figure 1
Tuberculosis Cases
New York City, 1920-1991

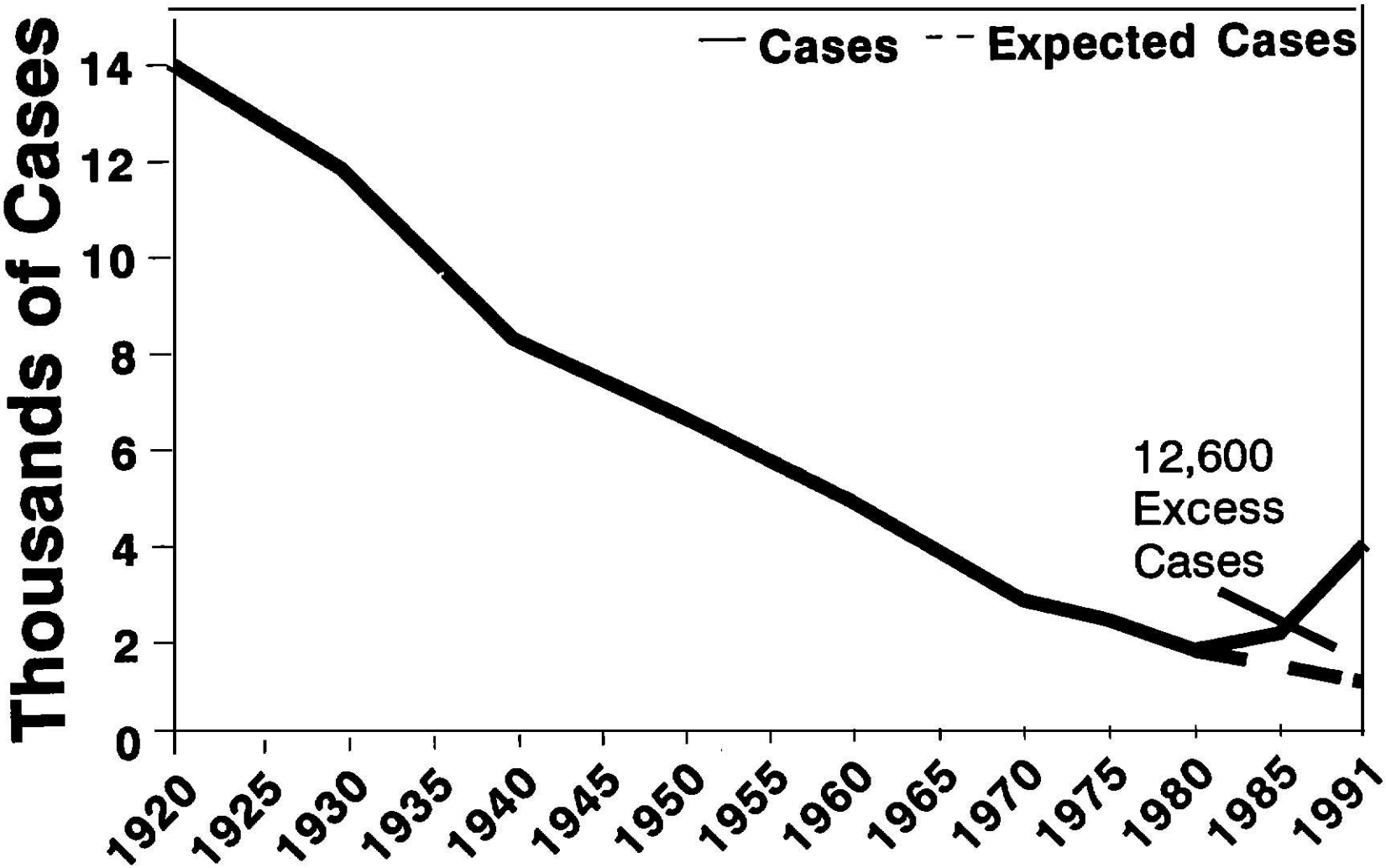


FIGURE 2

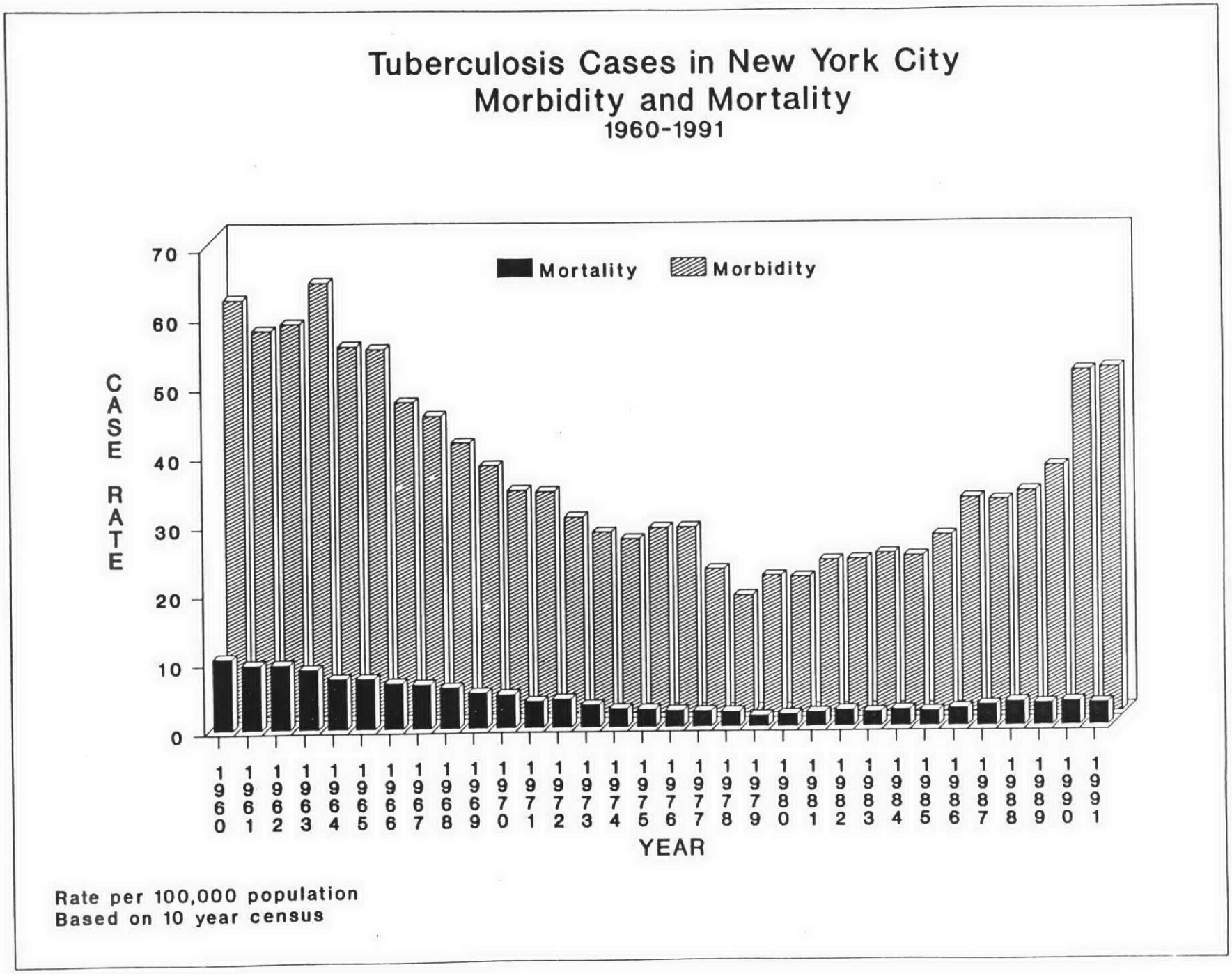

Tuberculosis Cases in New York City
Morbidity and Mortality
1960-1991
Mortality
Morbidity
CASE RATE
70
60
50
40
30
20
10
0
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
YEAR
Rate per 100,000 population
Based on 10 year census

FIGURE 3

Tuberculosis Cases in New York City by Age 1988-1991

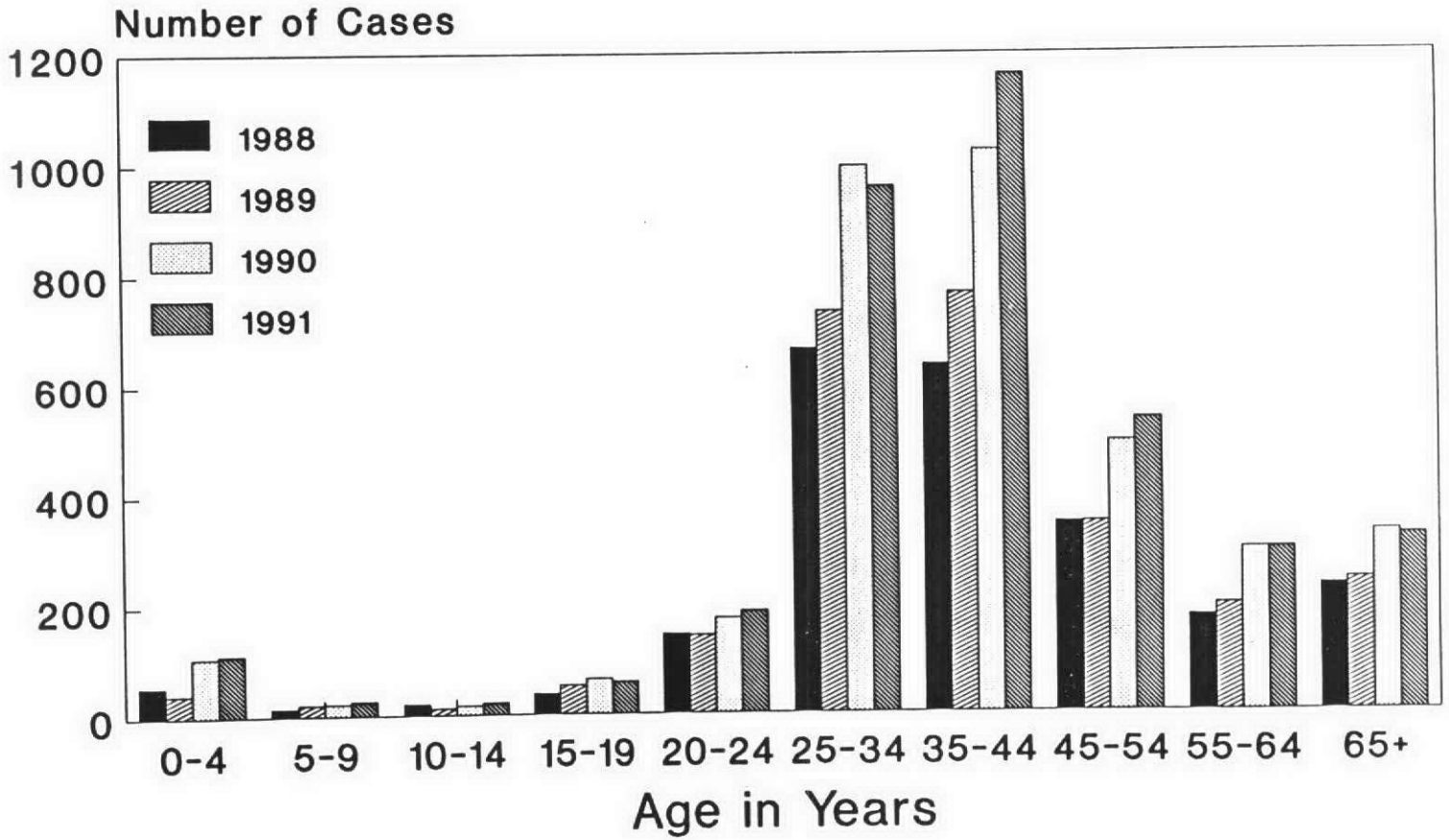


FIGURE 4

DISTRIBUTION OF TB CASES - 1991 by RACE/ETHNICITY

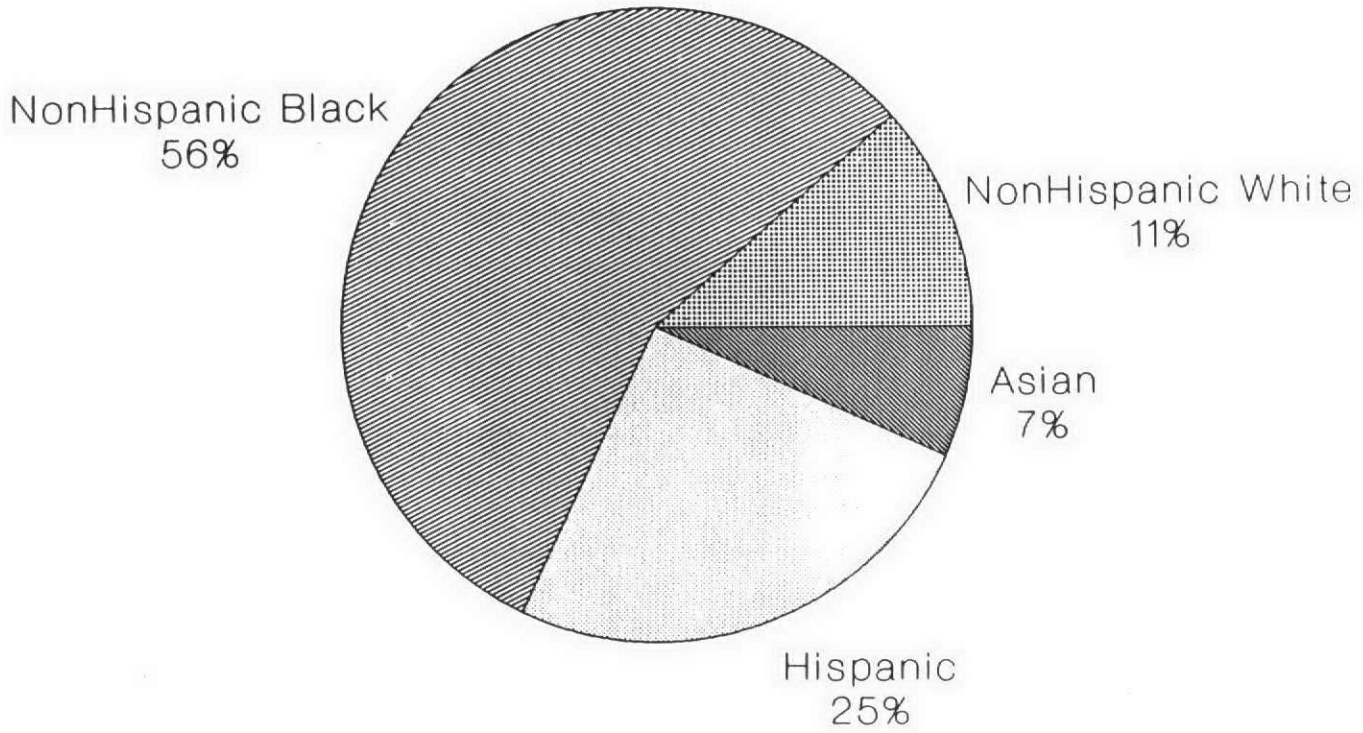


FIGURE 5

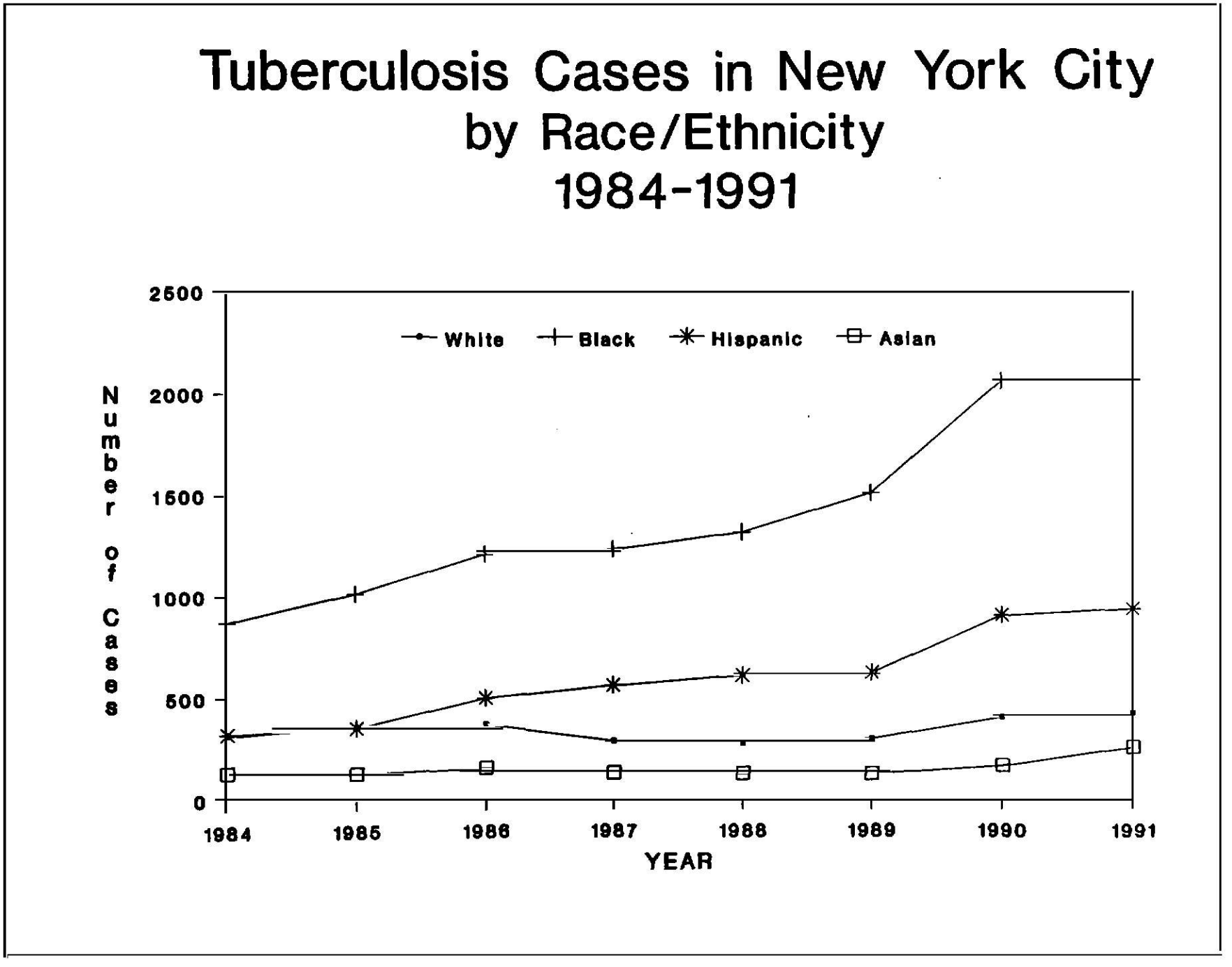

Tuberculosis Cases in New York City
by Race/Ethnicity
1984-1991
White
Black
Hispanic
Asian
Number of Cases
2500
2000
1500
1000
500
0
1984
1985
1986
1987
1988
1989
1990
1991
YEAR

FIGURE 6

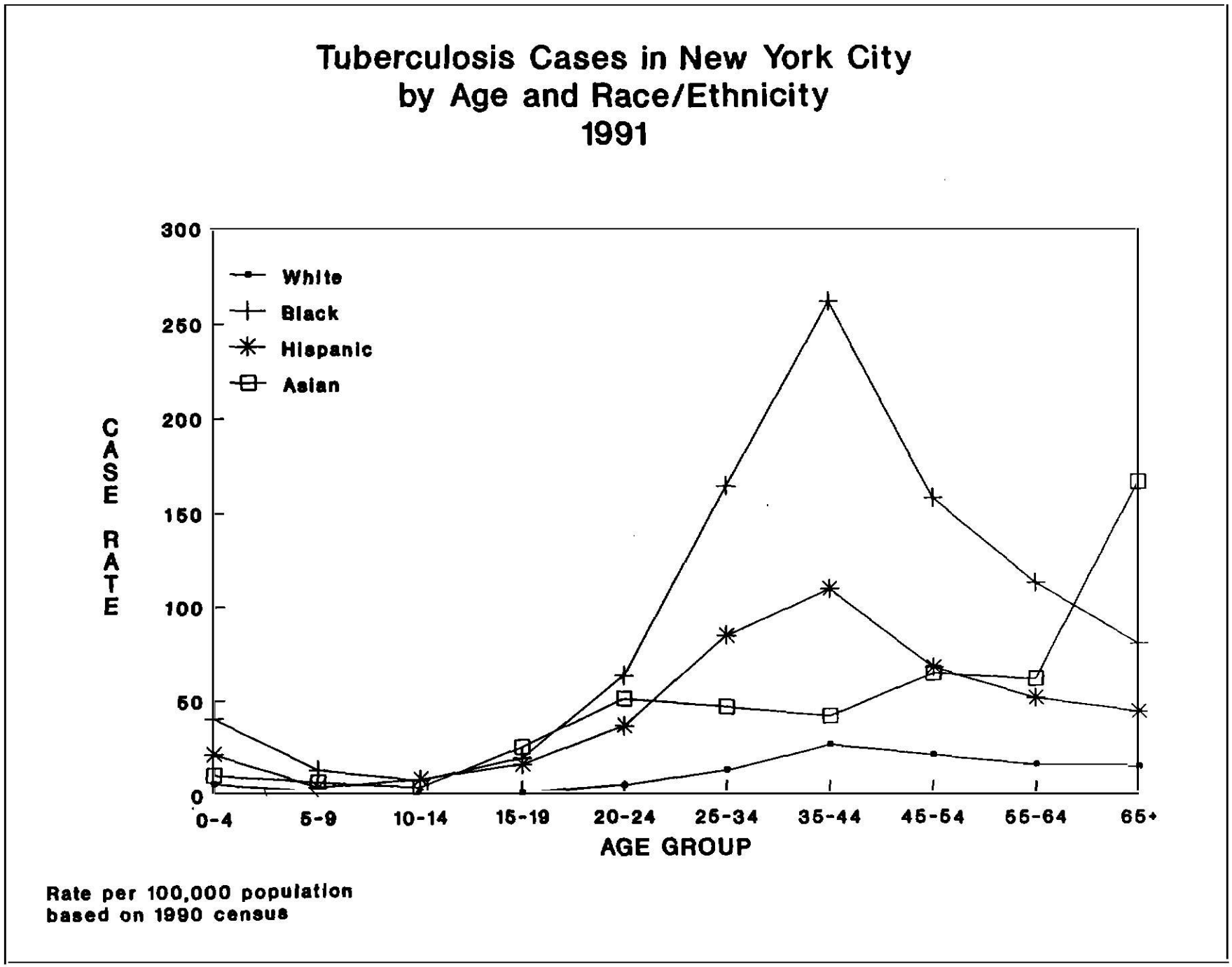

Tuberculosis Cases in New York City
by Age and Race/Ethnicity
1991
300
250
200
150
100
50
0
CASE RATE
White
Black
Hispanic
Asian
0-4
5-9
10-14
15-19
20-24
25-34
35-44
45-54
55-64
65+
AGE GROUP
Rate per 100,000 population
based on 1990 census

FIGURE 7

DISTRIBUTION OF TB CASES - 1991 by SEX and AGE GROUPS

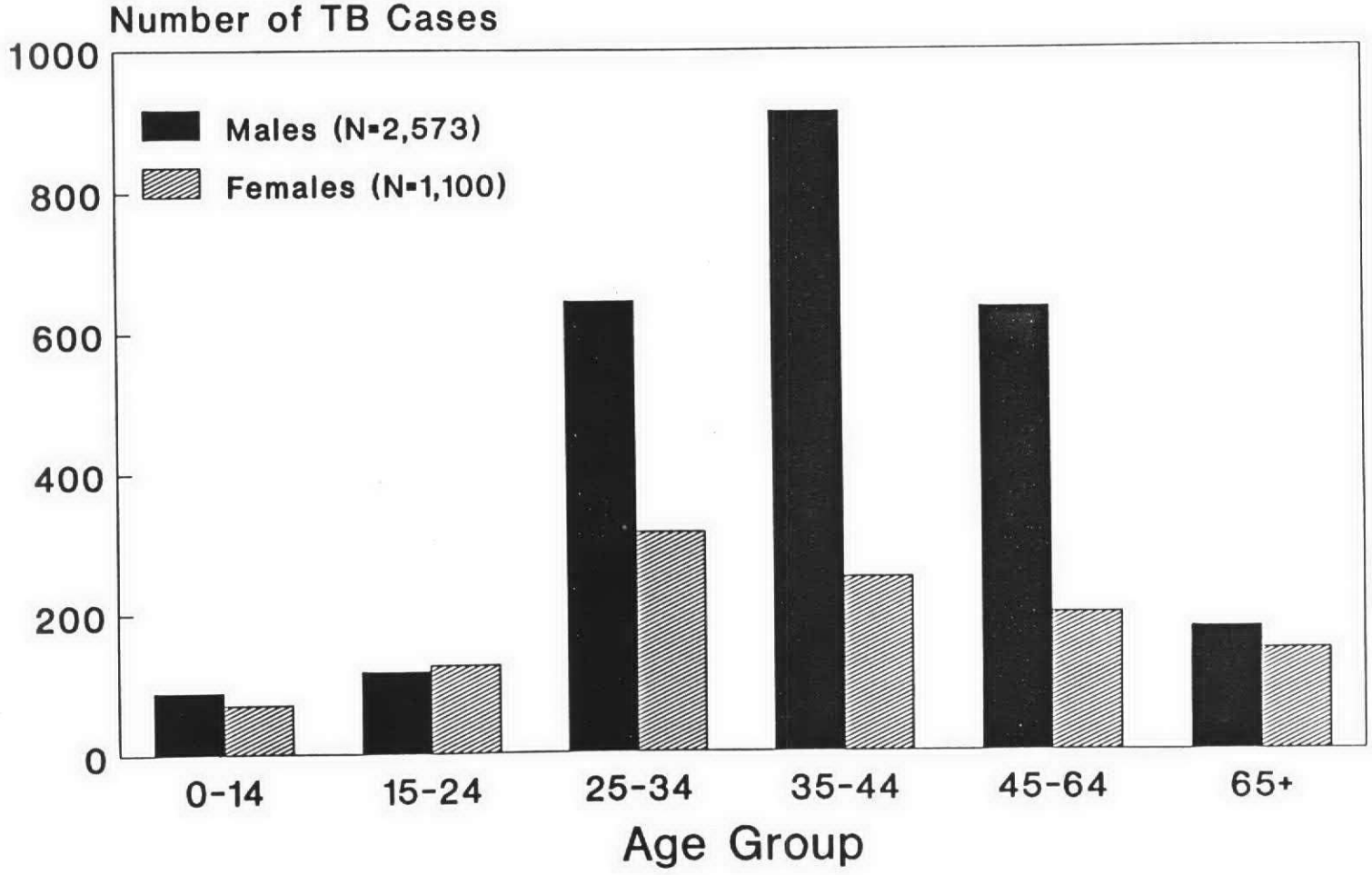


FIGURE 8

Tuberculosis Cases in New York City among Black Males by Age 1984-1991

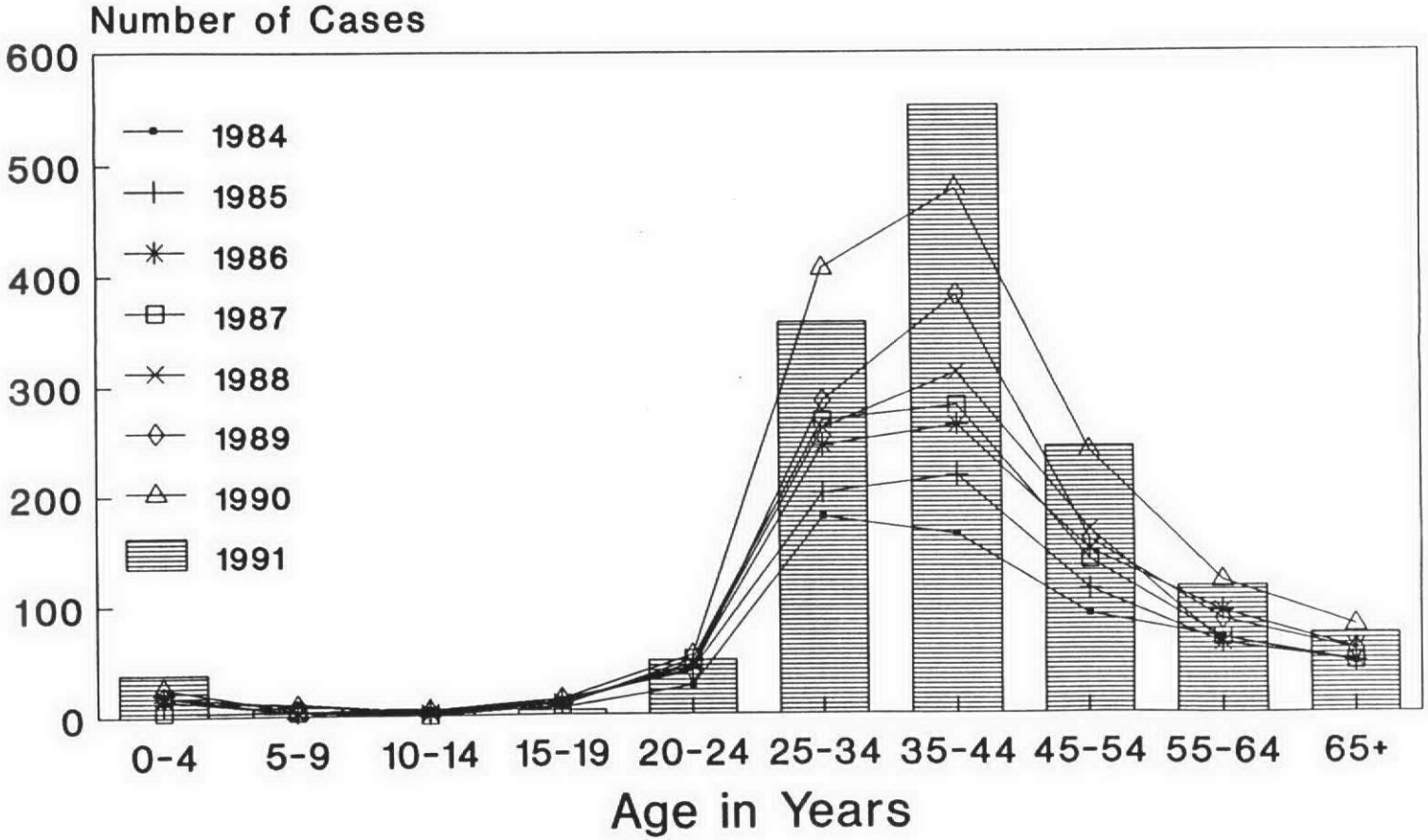


FIGURE 9

Tuberculosis Cases in New York City among Black Females by Age 1984-1991

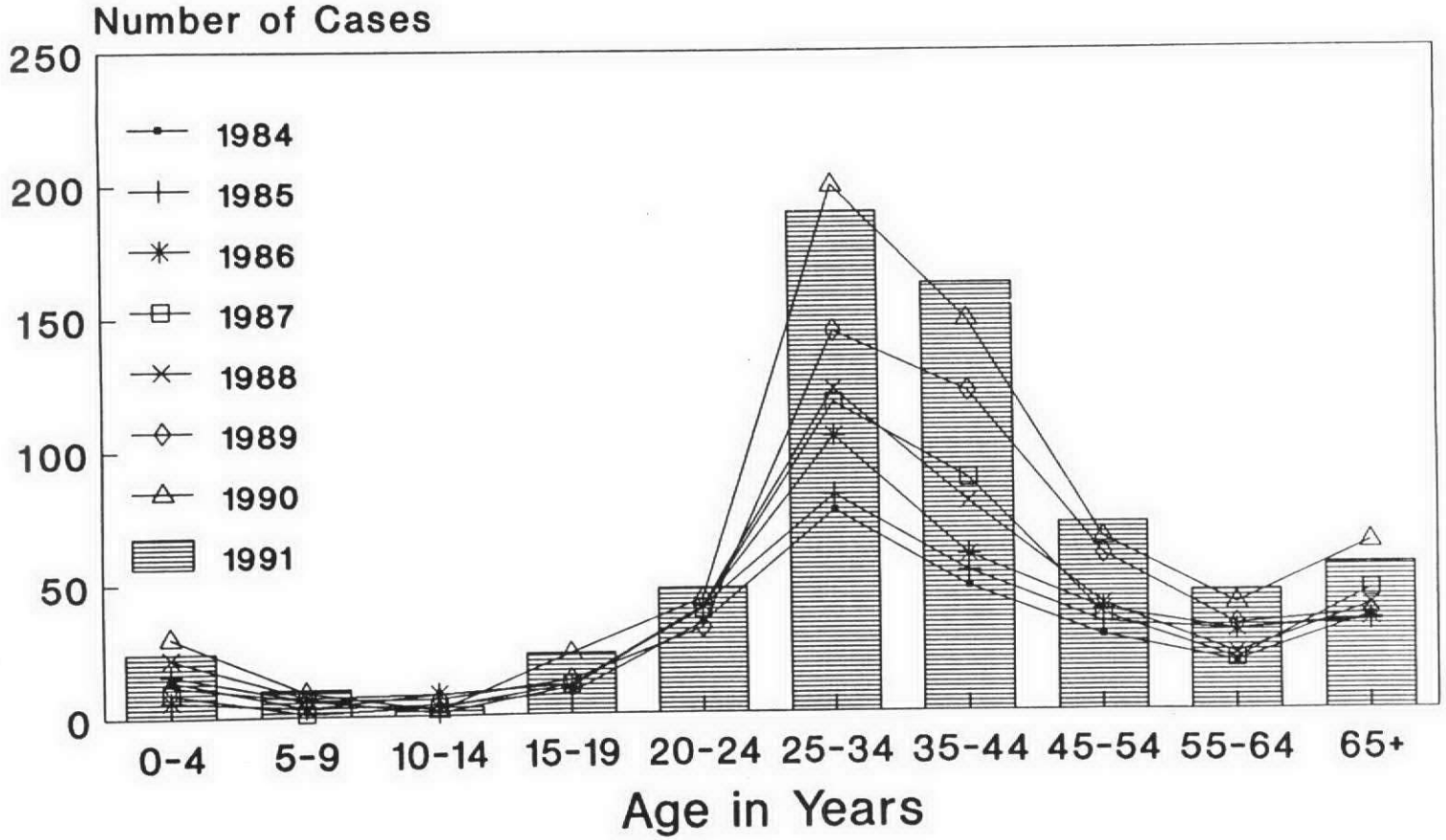
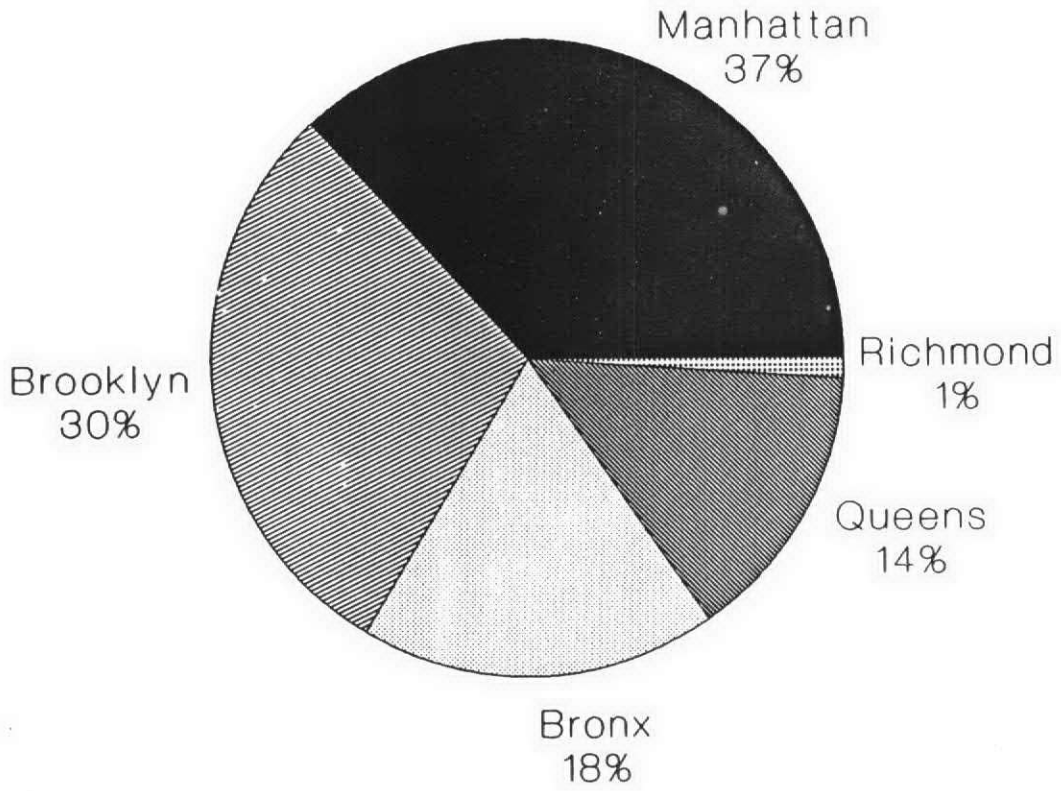


FIGURE 10

TB CASES IN NYC BY BOROUGH 1991



Number of Cases = 3,673