

# **TUBERCULOSIS IN NEW YORK CITY 1992**

## **Information Summary**



**Bureau of Tuberculosis Control  
New York City Department of Health**

## Introduction

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 1992. Rate calculations of cases per 100,000 population are based upon 1990 census data.\*

Tuberculosis cases in New York City have continued their increasing trend in 1992. Case rates have been rising since 1979 and are now 52.0 per 100,000 population (Table 1, Figure 1), which is the third highest in the country. In 1992, there were 3,811 new cases of tuberculosis reported in the City. This incidence represents a 3.8% annual increase over 1991's 3,673 cases and a 152% increase over 1980 when 1,514 cases were reported. The 1992 case rate is the highest in two decades (Table 1). This rate is nearly five times the national case rate of 10.5, and in 1992 New York City represented 14.3% of the nation's 26,673 reported tuberculosis cases.

For the first time, this report examines documented HIV status among TB patients in New York City. In 1992, nearly 50% of TB cases had a known and reported HIV status. In all age groups, males had a higher reported rate of HIV infection than females. Males 35 to 44 years of age had the highest rate of known and reported HIV infection (53%), which coincides with the high case rate of TB in that age group.

\*This report uses the 1990 census to calculate case rates. The 1991 report also used the 1990 census data. However, case rates from years previous to 1991 were based on the 1980 census.

### Age Distribution

A 41% decrease (66 to 111) in verified cases has occurred among children under 5 years old when compared to 1991. Among those aged 0 to 4 years (Table 3), non-Hispanic African American children represented 34 of the 66 cases (51.5%) and Hispanic children represented 26 of the 66 cases (39%). Of childhood cases, 56% were male; a much higher proportion of adult cases were among males.

Overall, there were 119 TB cases reported in children younger than 15 years, a 25% decrease from last year. There was also a 2.8% decrease in incidence among 25-34 year olds, while those 35-44 showed a 4.9% increase (Figure 2). Cases among those aged 45 and older increased 11.7%. The age peak between 35-54 years was highest for African Americans, Hispanics, and non-Hispanic Whites, whereas Asians had higher case rates in the older ages (Figure 5).

### Racial/Ethnic Distribution of Tuberculosis Cases

Non-Hispanic African Americans (males and females) represented 54.5% of all cases (Table 2). Their case rate of 112.4 per 100,000 was the highest of any racial/ethnic group. Hispanics represented 27.0% of all cases and had a case rate of 57.6 per 100,000. Hispanics had the largest increase in cases (10%) over 1991 of any race/ethnic group. African Americans and Hispanics together represent more than 80% of tuberculosis cases reported in the City (Figures 3 and 4).

The case rate of non-Hispanic white New Yorkers remained the lowest of the racial/ethnic groups, even though the rate of 13.8 per 100,000 population is higher than the national average of 10.5 and represents a 4.1% increase in active cases since 1991. Asians represented 7.1% of all cases and had a case rate of 51.4 per 100,000. They also experienced a substantial increase in cases (9.2%) over 1991. Among Asians, there was a 32% increase in TB cases in the 25-34 age group and a 54% increase in the 35-44 age group. However, in Asians, TB cases were still more likely to occur among the older individuals. Asian males and females 65 years and older had case rates of 285.3 and 84.9 per 100,000 respectively, both higher than that in any other non-black age group.

Distribution of Tuberculosis Cases by Sex (Tables 4 and 5, Figure 6.)

The incidence of tuberculosis among males is slightly more than two and a half times that of females (76.4 vs. 30.5 cases per 100,000, respectively, Figure 6). The annual increase in TB cases from 1991 to 1992 in males was 2.1%; whereas in females it was more than triple that at 7.5%. This higher annual rate of increase in females was also noted in 1991 and 1990.

Males

The largest proportional increase during the past year was among Asian men in whom cases rose 25.5%, from 153 to 192. Among African American men, cases decreased 2.3%, from 1,444 in 1991 to 1,411 for 1992. As in previous years, men of all races aged 25 to 44 represented about 60% of all male cases (Table 4).

As shown in Table 4, non-Hispanic black males continued to experience the highest incidence of tuberculosis among all racial/ethnic groups, with a case rate of 170.7 per 100,000 population. As in the previous eight years, incidence rates among African American males in 1992 peaked in the 35-44 year old age group with a case rate of 453.6 per 100,000, the highest in any age, sex, or race cohort, and almost 45 times the national average. Although the case rate among all males increased 2.1% over 1991, it was unchanged in those aged 35-44, and decreased by 3.4% in African American men in that age group.

### Females

There was a 7.5% increase among females (1100 to 1183 cases) from 1991 to 1992 (Table 5). The increase in cases among women was greatest among Hispanics (23%, from 261 to 321 cases) and second greatest among African Americans (5.7% from 629 to 665 cases). White females had little change in the number of cases over the past year, and Asian females had a decrease in cases (17%, from 96 to 80). The overall incidence in black women remains slightly more than two times that of Hispanic women, and white women have maintained the lowest rate in all racial/ethnic groups (7.0 per 100,000 population).

The age peak for women, 25-44 years is similar to that of males. Of note is that 19.9% of cases in women are among those 55 years old or more, whereas in males the proportion of older men represents 16.7% of TB cases.

## Geographic Distribution

Incidence rates by health district of residence were calculated for 1992; age adjusted and crude rates are presented in Table 6. Age standardization is a numerical technique that adjusts observed rates in different age groups 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 six districts with the highest age adjusted case rates (over 100 per 100,000) in 1992 were Central Harlem and the Lower East Side in Manhattan; Fort Greene and Bedford in Brooklyn, and Mott Haven and Tremont in the Bronx.

In 1992, the annual increase of TB cases was 83.8% in Staten Island, 9.9% in Brooklyn, 5% in the Bronx, and 4.4% in Queens. TB cases decreased by 4.2% in Manhattan. Figure 7 depicts the 1992 crude (or unadjusted for age) case rate for each borough per 100,000 population. Figure 8 depicts the distribution of TB cases by borough of residence.

### Manhattan

With 1,296 cases, Manhattan had 34% of all the City's reported cases in 1992, the most of any borough. Still, the borough had a 4.2% decrease in cases from 1991. The rate in Central Harlem remains the highest in the City at 240.2 per 100,000; the Lower East Side was the sixth highest with a rate of 101.5 per 100,000 population, even though the Lower East Side

experienced a significant decrease of 20.5% in TB cases over 1991. Washington Heights experienced a 7.6% decrease, and Riverside had a 6% decrease in TB cases when compared to 1991. However, the Lower West Side experienced a 12% increase in cases over 1991.

#### Bronx

The Bronx experienced a 5% increase in cases over 1991. Westchester experienced a 23% increase in cases, Mott Haven experienced a 15.8% increase, and Tremont experienced a 7% increase over 1991. With a case rate of 168.2 per 100,000, Mott Haven had the second highest age-adjusted case rate in the city. Tremont had the fifth highest age-adjusted rate in the City (105.8). Morrisania's age-adjusted rate, which was fifth last year, has dropped this year due to a 9.5% decrease in cases since 1991.

#### Brooklyn

With 1,191 cases, Brooklyn had 31% of all the City's reported cases in 1992, and experienced a 9.9% increase in cases over 1991. Fort Greene had the third highest case rate in the City (120.1). Bedford had the fourth highest case rate in the City (107.5), but had a 10% decrease in cases since 1991 (the only district in Brooklyn that substantially declined). The Williamsburg-Greenpoint area experienced a 41% increase in cases, Fort Greene experienced a 40% increase, Brownsville and Bay Ridge had 15% increases, Bushwick experienced a 12% increase, and Flatbush had a 9.8% increase in TB cases since 1991.

### Queens

Queens experienced a 4.4% increase in cases over 1991, but only Corona had a case rate (56.3) above the City average of 52.0. Corona and Flushing both experienced about 14% increases in cases over the past year, and Jamaica East had a 12% increase. Both Maspeth-Forest Hills and Jamaica West had substantial decreases, 27% and 16.5% respectively, since last year.

### Staten Island

Sixty-eight cases of tuberculosis were reported from Staten Island in 1992, yielding an age adjusted rate of 17.8 per 100,000, the lowest of any borough. However, cases increased by 83.8% over 1991.

### Area of Birth of Patients with Tuberculosis

In 1992, 22.9% all newly reported cases of tuberculosis occurred among individuals born outside the continental United States (Table 7). During the eight previous years, approximately one-quarter of all cases were in this category. The Caribbean area accounted for 421 of the 872 (48.3%) of those born outside of the United States, the largest group represented. A total of 77 countries were reported as place of birth for those patients with tuberculosis born outside of the United States.

## 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.

Until 1991, individuals with abnormal results on chest x-ray were 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).

However, for 1992 the national classification system was changed to three categories: Class A (Active, Infectious Tuberculosis), Class B1 (Active, Non-Infectious Tuberculosis), and Class B2 (Inactive Tuberculosis). For Table 8, the category "Active TB" includes all Class A immigrants for the year 1977 - 1991, and Classes A and B1 for 1992. The category "Inactive TB" includes all Class B immigrants for the year 1977 - 1991, and Class B2 for 1992.

In 1992, there were six Class A and five Class B immigrants identified to have tuberculosis on the basis of a positive culture for M. tuberculosis. Table 8 summarizes these data for the years 1977 to 1992. In 1992, the numbers of both suspected

and confirmed Class A and suspected and confirmed Class B immigrants have increased.

### Drug Resistance

In 1991, New York City became the first area in the country to implement mandatory reporting of drug susceptibility for M. tuberculosis. As a result, 1992 drug susceptibility information has substantially improved over 1991. During 1992, 3,446 patients (90%) of the City's 3,811 newly reported TB cases were reported as having positive cultures for M. tuberculosis. Among these 3,446 patients, susceptibility results were available for 3,094 (90%). Of these patients, 441 (14%) were found to have isolates which were resistant to at least both isoniazid and rifampin. This number includes both patients with initial multidrug resistance, and those who developed multidrug resistance during the course of treatment.

From 1989 to 1992, outbreaks of multi-drug resistant tuberculosis (MDRTB) were investigated by the Centers for Disease Control and the New York City Health Department in seven New York City hospitals. More than 200 cases of MDRTB were identified as likely to have occurred due to transmission within these institutions. At least 85% of the patients with MDRTB in these outbreaks were HIV-infected.

### Location of Disease

In 1992 pulmonary tuberculosis accounted for 86.1% of all cases. Of persons with extrapulmonary disease, lymphatic tuberculosis was the most prevalent form of disease. Of all cases reported in 1992, 4.4% had both pulmonary and extrapulmonary disease, a decrease from the 5.8% reported in 1991 (Table 9). However, reporting of secondary sites of disease may be incomplete.

### Homeless Tuberculosis Patients

Data on homelessness and TB has been compiled by the city since 1985. Computerized matching of homeless shelter names and addresses to the TB Registry database in 1992 has identified 625 newly reported cases who were homeless or had used the public shelter system. This represents a 16% decrease over the number of patients identified as being homeless (748) in 1991.

Homeless individuals have continued to represent a large proportion of tuberculosis cases; it is estimated that between 15% to 25% of cases are homeless. Because of their transient lifestyle and other medical and social problems, homeless individuals are difficult to treat for tuberculosis. Incentives to adherence, including a specialized TB unit in a 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 of the New York City Department of Health. In 1992 there were 199 deaths in New York City with tuberculosis listed as the underlying cause on the death certificate. In 1991 there were 241 such deaths. The crude tuberculosis mortality rate was 2.7 per 100,000 (Table 10, Figure 1). This death rate, however, is far in excess of the national mortality statistics which reported a 1991 provisional rate of 0.7%. There were an additional 442 deaths in which TB was listed as a secondary cause of death. Of these deaths, 353 (80%) listed AIDS or HIV infection as the underlying cause of death.

### TB and HIV Infection

Since 1990, the Department of Health has collected information on the HIV-serostatus of patients with active tuberculosis. This information is necessary for the public health control of tuberculosis (e.g., to determine the appropriate duration of anti-tuberculosis treatment). Table 11 presents the documented and reported HIV-serostatus of patients with active tuberculosis in various age, sex, and race/ethnicity subgroups. Since not all patients with tuberculosis undergo testing for HIV, and since not all known HIV test results are reported to the Bureau of Tuberculosis Control, the proportion of HIV-seropositivity reported on Table 11 is a minimum estimate of

the actual proportion of tuberculosis patients who are HIV infected.

Of 3,811 TB cases, 33.6% were reported as HIV positive, 15.7% were reported as HIV negative, and 50.7% had an unreported and/or unknown HIV status. Of the 2,628 male TB patients, 37.4% were reported as HIV positive, 14.3% were reported as HIV negative, and 48.3% had an unavailable HIV status. Of the 1,183 female TB patients, 25.1% were reported as HIV positive, 19.0% were reported as HIV negative, and 55.9% had an unavailable HIV status. Among non-Hispanic African Americans, 35.0% were reported as HIV positive, 14.0% were reported as HIV negative, and 51.0% had an unavailable HIV status. Among Hispanics, 38.7% were reported as HIV positive, 14.8% were reported as HIV negative, and 46.5% had an unavailable HIV status. Among non-Hispanic Whites, 32.6% were reported as HIV positive, 16.7% were reported as HIV negative, and 50.7% had an unavailable HIV status. Among Asians, 5.1% were reported as HIV positive, 30.9% were reported HIV negative, and 64.0% had an unavailable HIV status. Table 11 depicts the percentages of TB cases by known and unknown HIV status with regard to age, gender, and race/ethnicity. Figure 9 represents HIV-serostatus among TB patients in the age group 35 to 44 years old.

### TB Case Counting Methodology

For 1992, there were 3,811 reported and confirmed new cases of tuberculosis in New York City. This number includes 365 persons who did not have a reported positive culture for M. tuberculosis. Most of these patients had clinical symptoms suggestive of TB, were treated with anti-TB drugs, and had clinical response to treatment which supported the diagnosis of TB disease. Cases counted in 1992 were those verified during this period. Some patients had disease first suspected in 1991; other patients who presented in late 1992 will be counted in 1993 if active tuberculosis disease is confirmed. Figure 10 represents the trend in cases by the year of diagnosis, rather than year of verification. This figure includes both culture-confirmed and clinically-confirmed cases. The 1992 numbers shown in Figure 10 are less than the 1992 incidence because some of the cases counted in 1992 were diagnosed in 1991, and because the 1993 count will include cases diagnosed in 1992. The 1992 total in this figure includes patients who submitted a specimen for mycobacteriology culture in late 1992 if the culture was reported as positive for M. tuberculosis by June 30, 1993. As shown by Figure 10, the Bureau of Tuberculosis Control is now verifying disease in more patients who do not have positive cultures, but for whom a clinical diagnosis of TB is confirmed.

Table 1

Tuberculosis Incidence  
New York City 1920 - 1992

| <u>Year</u> | <u>Number*</u> | <u>Rate Per<br/>100,000**</u> |
|-------------|----------------|-------------------------------|
| 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        | 3,811          | 52.0                          |

\* 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.

TABLE 2  
Tuberculosis Incidence (Rates per 100,000)  
by Race/Ethnicity and Age  
New York City, 1992

| Race     | Age Group    |             |              |              |               |                |                 |                |                |               |                 | Total |
|----------|--------------|-------------|--------------|--------------|---------------|----------------|-----------------|----------------|----------------|---------------|-----------------|-------|
|          | 0-4          | 5-9         | 10-14        | 15-19        | 20-24         | 25-34          | 35-44           | 45-54          | 55-64          | 65+           |                 |       |
| White    | 4<br>(2.6)   | 1<br>(0.8)  | -<br>(-)     | 2<br>(1.4)   | 10<br>(4.7)   | 72<br>(12.6)   | 115<br>(23.6)   | 72<br>(21.0)   | 50<br>(14.5)   | 110<br>(16.9) | 436<br>(13.8)   |       |
| Black    | 34<br>(22.3) | 12<br>(8.4) | 20<br>(13.8) | 35<br>(23.9) | 79<br>(51.4)  | 514<br>(154.5) | 730<br>(267.7)  | 357<br>(179.3) | 159<br>(111.6) | 136<br>(85.3) | 2076<br>(112.4) |       |
| Hispanic | 26<br>(15.6) | 10<br>(6.7) | 8<br>(5.5)   | 29<br>(19.9) | 79<br>(47.4)  | 271<br>(78.4)  | 314<br>(120.5)  | 156<br>(89.3)  | 76<br>(63.0)   | 58<br>(53.4)  | 1027<br>(57.6)  |       |
| Asian    | 2<br>(5.3)   | 2<br>(6.1)  | -<br>(-)     | 5<br>(13.5)  | 17<br>(38.7)  | 74<br>(61.6)   | 60<br>(63.0)    | 27<br>(47.9)   | 25<br>(66.1)   | 60<br>(175.1) | 272<br>(51.4)   |       |
| Total    | 66<br>(12.9) | 25<br>(5.5) | 28<br>(6.2)  | 71<br>(15.1) | 185<br>(32.1) | 931<br>(68.0)  | 1219<br>(109.2) | 612<br>(79.1)  | 310<br>(48.1)  | 364<br>(38.2) | 3811<br>(52.0)  |       |

N  
(Rate)

Table 3

Tuberculosis Cases by Race, Ethnicity and Age  
 In Children Under 5 Years  
 1992  
 Age In Months

| <u>RACE</u> | <u>0-11</u> | <u>12-23</u> | <u>24-35</u> | <u>36-47</u> | <u>48-59</u> | <u>TOTAL</u> |
|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| White       | 1           | -            | -            | 1            | 2            | 4            |
| Black       | 5           | 9            | 11           | 7            | 2            | 34           |
| Hispanic    | 4           | 8            | 4            | 7            | 3            | 26           |
| Asian       | -           | -            | 1            | -            | 1            | 2            |
| TOTAL       | 10          | 17           | 16           | 15           | 8            | 66           |

TABLE 4  
Tuberculosis Incidence (Rates per 100,000) in Males  
by Race/Ethnicity and Age  
New York City, 1992

| Race     | Age Group    |             |             |              |               |                |                |                |                |               |                 | Total |
|----------|--------------|-------------|-------------|--------------|---------------|----------------|----------------|----------------|----------------|---------------|-----------------|-------|
|          | 0-4          | 5-9         | 10-14       | 15-19        | 20-24         | 25-34          | 35-44          | 45-54          | 55-64          | 65+           |                 |       |
| White    | 1<br>(1.3)   | -<br>(-)    | -<br>(-)    | 1<br>(1.4)   | 6<br>(5.8)    | 52<br>(18.1)   | 95<br>(38.8)   | 60<br>(36.2)   | 42<br>(26.2)   | 62<br>(25.1)  | 319<br>(21.4)   |       |
| Black    | 22<br>(28.6) | 6<br>(8.3)  | 8<br>(11.2) | 11<br>(15.3) | 48<br>(67.5)  | 306<br>(205.9) | 533<br>(453.6) | 289<br>(346.0) | 108<br>(186.7) | 80<br>(145.4) | 1411<br>(170.7) |       |
| Hispanic | 14<br>(16.5) | 6<br>(7.9)  | 3<br>(4.1)  | 20<br>(26.9) | 44<br>(52.7)  | 167<br>(99.9)  | 239<br>(198.5) | 129<br>(162.6) | 50<br>(96.3)   | 34<br>(86.2)  | 706<br>(83.0)   |       |
| Asian    | -<br>(-)     | 1<br>(5.9)  | -<br>(-)    | 4<br>(21.1)  | 11<br>(50.5)  | 48<br>(78.2)   | 46<br>(93.4)   | 19<br>(65.5)   | 19<br>(103.8)  | 44<br>(285.3) | 192<br>(71.7)   |       |
| Total    | 37<br>(14.2) | 13<br>(5.6) | 11<br>(4.8) | 36<br>(15.2) | 109<br>(38.9) | 573<br>(86.2)  | 913<br>(171.6) | 497<br>(139.1) | 219<br>(76.0)  | 220<br>(61.6) | 2628<br>(76.4)  |       |

N  
(Rate)

TABLE 5  
Tuberculosis Incidence (Rates per 100,000) in Females  
by Race/Ethnicity and Age  
New York City, 1992

| Race     | Age Group    |             |              |              |              |                |                |               |              |               |                | Total |
|----------|--------------|-------------|--------------|--------------|--------------|----------------|----------------|---------------|--------------|---------------|----------------|-------|
|          | 0-4          | 5-9         | 10-14        | 15-19        | 20-24        | 25-34          | 35-44          | 45-54         | 55-64        | 65+           | N              |       |
|          | (Rate)       |             |              |              |              |                |                |               |              |               |                |       |
| White    | 3<br>(4.0)   | 1<br>(1.6)  | -<br>(-)     | 1<br>(1.4)   | 4<br>(3.7)   | 20<br>(7.1)    | 20<br>(8.2)    | 12<br>(6.7)   | 8<br>(4.4)   | 48<br>(11.9)  | 117<br>(7.0)   |       |
| Black    | 12<br>(15.9) | 6<br>(8.5)  | 12<br>(16.4) | 24<br>(32.3) | 31<br>(37.5) | 208<br>(113.5) | 197<br>(127.0) | 68<br>(58.8)  | 51<br>(60.2) | 56<br>(53.6)  | 665<br>(65.2)  |       |
| Hispanic | 12<br>(14.7) | 4<br>(5.4)  | 5<br>(7.0)   | 9<br>(12.6)  | 35<br>(42.2) | 104<br>(58.2)  | 75<br>(53.5)   | 27<br>(28.3)  | 26<br>(37.9) | 24<br>(34.7)  | 321<br>(34.4)  |       |
| Asian    | 2<br>(10.9)  | 1<br>(6.3)  | -<br>(-)     | 1<br>(5.5)   | 6<br>(27.1)  | 26<br>(44.3)   | 14<br>(30.4)   | 8<br>(29.2)   | 6<br>(30.7)  | 16<br>(84.9)  | 80<br>(30.6)   |       |
| Total    | 29<br>(11.6) | 12<br>(5.3) | 17<br>(7.6)  | 35<br>(15.0) | 76<br>(25.6) | 358<br>(50.8)  | 306<br>(52.3)  | 115<br>(27.6) | 91<br>(25.5) | 144<br>(24.2) | 1183<br>(30.5) |       |

TABLE 6

Crude and Age-Adjusted Tuberculosis Rates  
New York City, 1980, 1991, and 1992

| Borough        | Health District      | Cases | Rate per 100,000 population |                          |               |                           |
|----------------|----------------------|-------|-----------------------------|--------------------------|---------------|---------------------------|
|                |                      |       | 1992<br>Crude               | 1992<br>Age<br>Adjusted* | 1991<br>Crude | 1980<br>Age<br>Adjusted** |
| Manhattan      | Central Harlem       | 256   | 221.7                       | 240.2                    | 220.8         | 78.6                      |
|                | East Harlem          | 121   | 95.1                        | 95.8                     | 93.5          | 27.5                      |
|                | Kips Bay-Yorkville   | 51    | 21.6                        | 19.1                     | 20.8          | 9.9                       |
|                | Lower East Side      | 263   | 109.8                       | 101.5                    | 138.2         | 68.3                      |
|                | Lower West Side      | 278   | 94.5                        | 77.9                     | 84.3          | 34.6                      |
|                | Riverside            | 170   | 81.4                        | 72.1                     | 86.6          | 27.9                      |
|                | Washington Heights   | 157   | 58.9                        | 60.9                     | 63.8          | 26.5                      |
|                | Total Manhattan      | 1296  | 87.1                        |                          |               |                           |
| Bronx          | Fordham-Riverdale    | 88    | 35.9                        | 37.8                     | 36.7          | 16.5                      |
|                | Morrisania           | 124   | 85.7                        | 96.5                     | 94.6          | 31.4                      |
|                | Mott Haven           | 190   | 146.4                       | 168.2                    | 126.3         | 28.8                      |
|                | Pelham Bay           | 44    | 20.2                        | 20.3                     | 22.9          | 9.8                       |
|                | Tremont              | 165   | 86.6                        | 105.8                    | 80.8          | 33.3                      |
|                | Westchester          | 95    | 34.5                        | 35.8                     | 28.0          | 9.3                       |
|                | Total Bronx          | 706   | 58.6                        |                          |               |                           |
| Brooklyn       | Bay Ridge            | 38    | 15.9                        | 15.9                     | 13.8          | 8.8                       |
|                | Bedford              | 235   | 100.9                       | 107.5                    | 112.5         | 46.7                      |
|                | Brownsville          | 183   | 65.7                        | 71.6                     | 57.1          | 21.4                      |
|                | Bushwick             | 136   | 74.5                        | 83.1                     | 66.3          | 37.0                      |
|                | Flatbush             | 180   | 35.8                        | 36.6                     | 32.7          | 18.2                      |
|                | Fort Greene          | 178   | 118.5                       | 120.1                    | 84.5          | 55.2                      |
|                | Gravesend            | 54    | 19.0                        | 20.4                     | 19.4          | 13.2                      |
|                | Red Hook-Gowanus     | 56    | 53.0                        | 48.7                     | 53.0          | 24.2                      |
|                | Sunset Park          | 45    | 26.4                        | 27.7                     | 27.0          | 15.8                      |
|                | W'burg-Gnspt.        | 86    | 55.1                        | 59.3                     | 39.1          | 27.0                      |
| Total Brooklyn | 1191                 | 51.8  |                             |                          |               |                           |
| Queens         | Astoria-L.I.C.       | 89    | 37.7                        | 35.3                     | 34.3          | 17.7                      |
|                | Corona               | 169   | 58.1                        | 56.3                     | 50.9          | 13.5                      |
|                | Flushing             | 73    | 16.0                        | 14.6                     | 14.0          | 10.3                      |
|                | Jamaica East         | 110   | 32.6                        | 34.0                     | 29.1          | 17.8                      |
|                | Jamaica West         | 76    | 21.0                        | 21.5                     | 25.2          | 8.6                       |
|                | Maspeth-Forest Hills | 33    | 12.3                        | 12.3                     | 16.7          | 5.7                       |
| Total Queens   | 550                  | 28.2  |                             |                          |               |                           |
| Staten Island  | Richmond             | 68    | 17.9                        | 17.8                     | 9.8           | 7.3                       |
| TOTAL NYC      |                      | 3811  | 52.0                        | 52.0                     | 50.2          | 19.9                      |

\* 1992 and 1991 crude rates are based on the 1990 Census for New York City. 1992 age-adjusted rates are based on the 1990 Census by the method of direct adjustment.

\*\* 1980 age-adjusted rates are based on the 1980 Census by the method of direct adjustment.

Table 7  
Tuberculosis Cases  
By Age and Area of Birth  
New York City, 1992

AGE GROUPS

| AREA OF BIRTH               | 0-9 | 10-19 | 20-24 | 25-34 | 35-44 | 45-54 | 55+ | TOTAL |
|-----------------------------|-----|-------|-------|-------|-------|-------|-----|-------|
| AFRICA                      | 1   | -     | 2     | 9     | 3     | -     | -   | 15    |
| EUROPE                      | -   | -     | 1     | 5     | 12    | 3     | 23  | 44    |
| CENTRAL/S AMER <sup>1</sup> | 9   | 19    | 27    | 48    | 30    | 18    | 21  | 172   |
| CARIBBEAN* <sup>2</sup>     | 5   | 19    | 25    | 113   | 133   | 67    | 59  | 421   |
| SOUTHEAST ASIA <sup>3</sup> | -   | 2     | 1     | 14    | 15    | 5     | 10  | 47    |
| INDO/PAKISTAN <sup>4</sup>  | 2   | -     | 4     | 19    | 12    | 6     | 9   | 52    |
| ASIA <sup>5</sup>           | -   | 1     | 4     | 21    | 16    | 10    | 42  | 94    |
| MIDDLE EAST                 | -   | -     | -     | 4     | 3     | -     | -   | 7     |
| CANADA                      | -   | -     | 1     | -     | -     | 1     | -   | 2     |
| OTHER                       | 1   | -     | 1     | 3     | 6     | 4     | 3   | 18    |
| NON USA                     | 18  | 41    | 66    | 236   | 230   | 114   | 167 | 872   |
| USA                         | 73  | 58    | 119   | 695   | 989   | 498   | 507 | 2939  |
| TOTAL                       | 91  | 99    | 185   | 931   | 1219  | 612   | 674 | 3811  |

\* Includes Puerto Rico

<sup>1</sup> Ecuador (37), Mexico (32), Guyana (22), Columbia (18), Peru (17), Guatemala (12), Honduras (10), Panama (8) Other (16)

<sup>2</sup> Puerto Rico (195), Haiti (93), Dominican Republic (66), Jamaica (24), Trinidad & Tobago (16), Cuba (12) Other (15)

<sup>3</sup> Phillipines (34), Vietnam (10), Other (3)

<sup>4</sup> India (23), Pakistan (17), Bangladesh (12)

<sup>5</sup> China (66), South Korea (23), Other (5)

Table 8

Tuberculosis Cases among Immigrants\*  
1977 -1992

|        | SUSPECTED<br>CLASS A (Active TB) |                    | SUSPECTED<br>CLASS B (Inactive TB) |                    |
|--------|----------------------------------|--------------------|------------------------------------|--------------------|
|        | # Screened                       | Actual<br>TB Cases | # Screened                         | Actual<br>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                  |
| 1992** | 83                               | 6                  | 2,353                              | 5                  |

\* Within two weeks of arrival in the United States

\*\* For 1992, "Suspected Class A" immigrants include suspected Class B1 immigrants (see text).

Table 9  
Tuberculosis Cases by  
Site of Disease

|                                     | <u>Number of Cases</u> | (%)        |
|-------------------------------------|------------------------|------------|
| Pulmonary                           | 3,283                  | (86.1)     |
| Lymphatic                           | 135                    | ( 3.5)     |
| Pleural                             | 84                     | ( 2.2)     |
| Bone/Joint                          | 83                     | ( 2.2)     |
| Genitourinary                       | 39                     | ( 1.0)     |
| Meningeal                           | 31                     | ( 0.8)     |
| Miliary                             | 25                     | ( 0.7)     |
| Peritoneal                          | 28                     | ( 0.7)     |
| Other                               | 103                    | ( 2.7)     |
| Total                               | 3,811                  | (100.0)    |
| <br>Pulmonary and<br>Extrapulmonary | <br>167                | <br>( 4.4) |

Table 10

Tuberculosis Deaths and Rate (per 100,000)  
New York City  
1910 - 1992

| <u>Year</u> | <u># Deaths</u> | <u>Rate</u> |
|-------------|-----------------|-------------|
| 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         |
| 1992        | 199             | 2.7         |

Table 11

Percentages of Tuberculosis Cases  
by Known and Unknown HIV Status  
and Age, Gender, Race/Ethnicity  
New York City, 1992

| Age   | HIV Status |                 |           |          |                 |           |          |                 |           |
|-------|------------|-----------------|-----------|----------|-----------------|-----------|----------|-----------------|-----------|
|       | Female     |                 |           | Male     |                 |           | All      |                 |           |
|       | (+)<br>%   | HIV<br>(-)<br>% | (NA)<br>% | (+)<br>% | HIV<br>(-)<br>% | (NA)<br>% | (+)<br>% | HIV<br>(-)<br>% | (NA)<br>% |
| 0-14  | 2          | 22              | 76        | 5        | 20              | 75        | 3        | 21              | 76        |
| 15-24 | 7          | 22              | 71        | 13       | 23              | 64        | 11       | 22              | 67        |
| 25-34 | 34         | 18              | 49        | 41       | 17              | 42        | 38       | 17              | 44        |
| 35-44 | 43         | 13              | 44        | 53       | 10              | 38        | 50       | 11              | 39        |
| 45-54 | 23         | 21              | 57        | 38       | 13              | 48        | 35       | 15              | 50        |
| 55-64 | 8          | 22              | 70        | 20       | 19              | 61        | 16       | 20              | 64        |
| 65+   | 1          | 28              | 70        | 5        | 16              | 79        | 3        | 21              | 76        |
| Total | 25         | 19              | 56        | 37       | 14              | 48        | 34       | 16              | 51        |

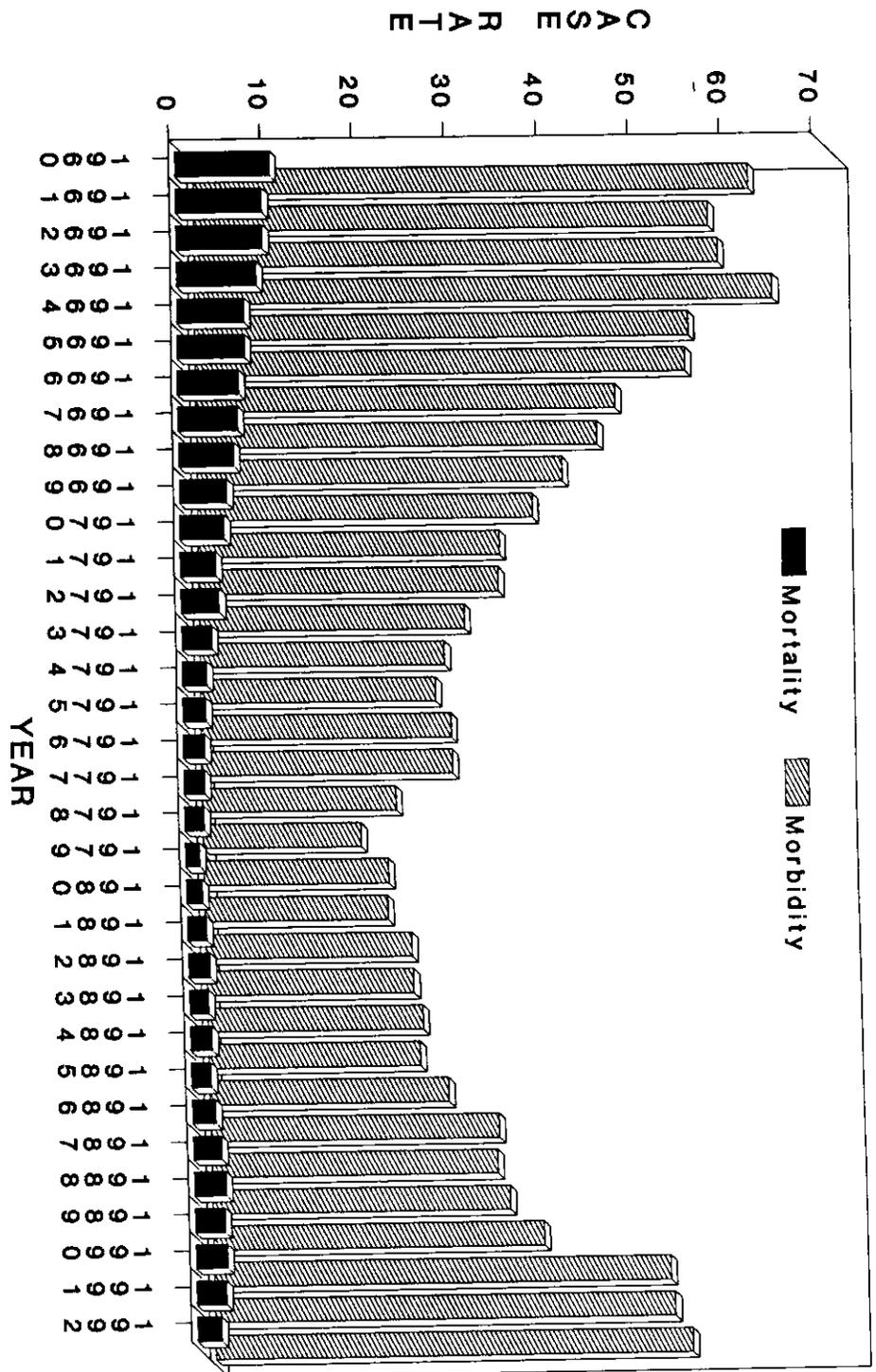
| Age   | Asian    |                 |           | Hispanic |                 |           | Black    |                 |           | White    |                 |           |
|-------|----------|-----------------|-----------|----------|-----------------|-----------|----------|-----------------|-----------|----------|-----------------|-----------|
|       | (+)<br>% | HIV<br>(-)<br>% | (NA)<br>% |
|       | 0-14     | 0               | 0         | 100      | 5               | 30        | 66       | 3               | 17        | 80       | 0               | 20        |
| 15-24 | 0        | 41              | 59        | 10       | 22              | 68        | 13       | 18              | 68        | 8        | 17              | 75        |
| 25-34 | 4        | 41              | 55        | 46       | 17              | 38        | 38       | 14              | 47        | 47       | 17              | 36        |
| 35-44 | 8        | 37              | 55        | 56       | 6               | 38        | 50       | 10              | 40        | 59       | 10              | 30        |
| 45-54 | 11       | 22              | 67        | 41       | 15              | 44        | 34       | 14              | 52        | 42       | 15              | 43        |
| 55-64 | 0        | 16              | 84        | 22       | 16              | 62        | 16       | 19              | 65        | 16       | 32              | 52        |
| 65+   | 5        | 22              | 73        | 3        | 28              | 69        | 4        | 21              | 74        | 1        | 17              | 82        |
| Total | 5        | 31              | 64        | 39       | 15              | 47        | 35       | 14              | 51        | 33       | 17              | 51        |

NA = Not Available

Due to rounding, percentages may not equal 100.

FIGURE 1

# Tuberculosis Cases in New York City Morbidity and Mortality 1960-1992



Rate per 100,000 population  
Based on 10 year census

FIGURE 2

# Tuberculosis Cases in New York City by Age 1989-1992

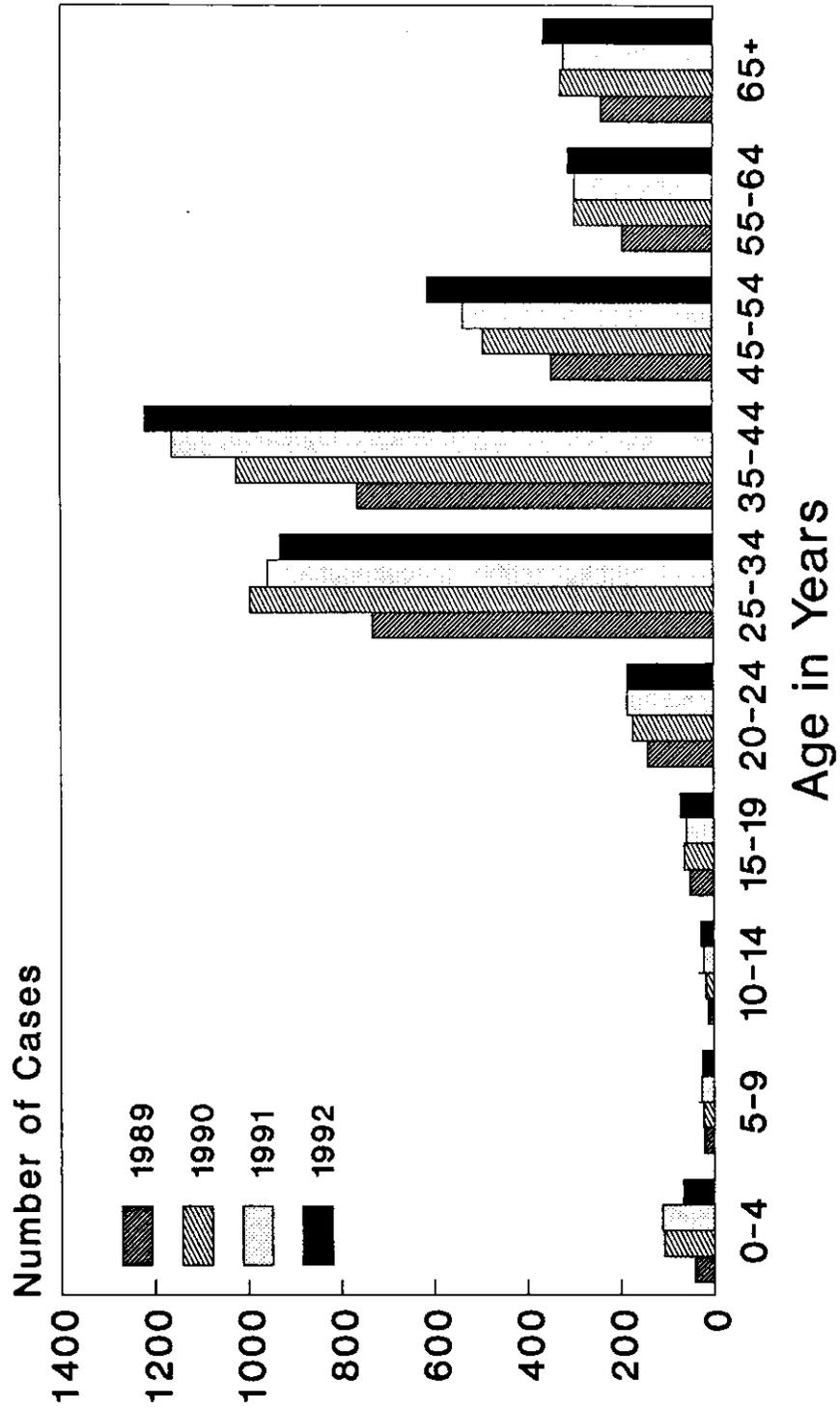


FIGURE 3

# DISTRIBUTION OF TB CASES by RACE/ETHNICITY, NYC - 1992

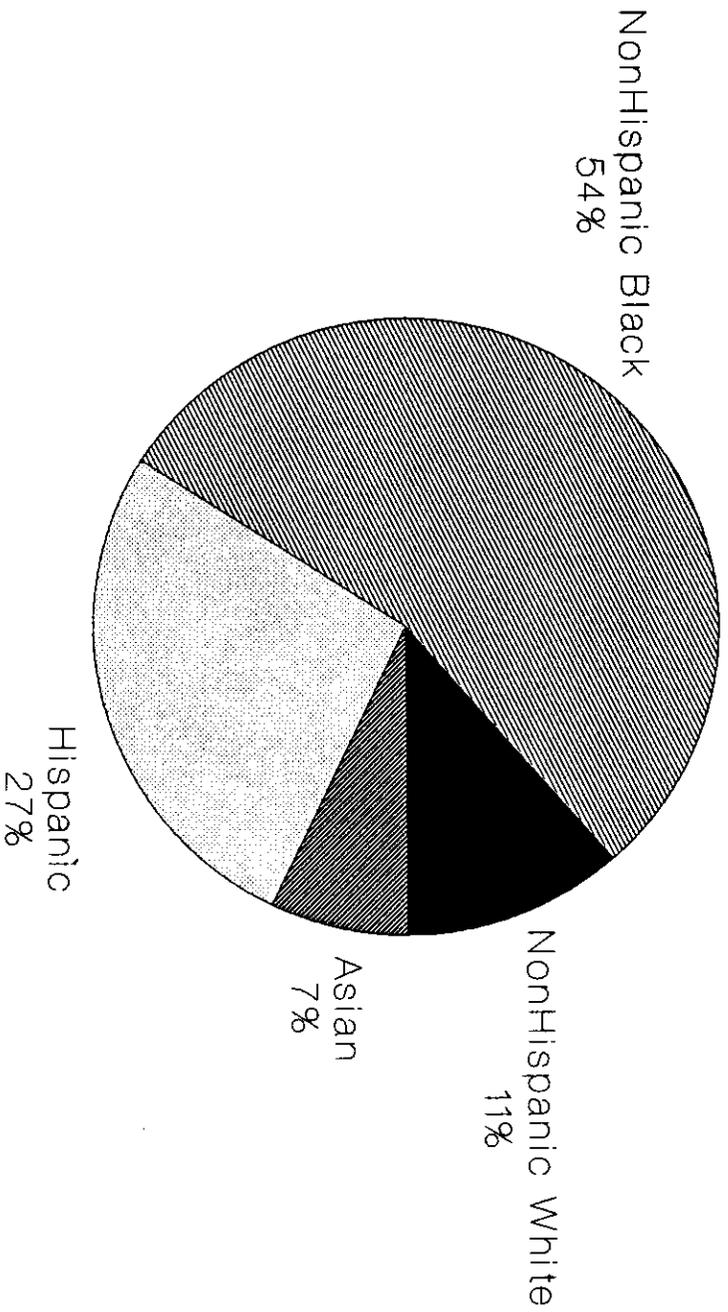


FIGURE 4

# Tuberculosis Cases in New York City by Race/Ethnicity 1985-1992

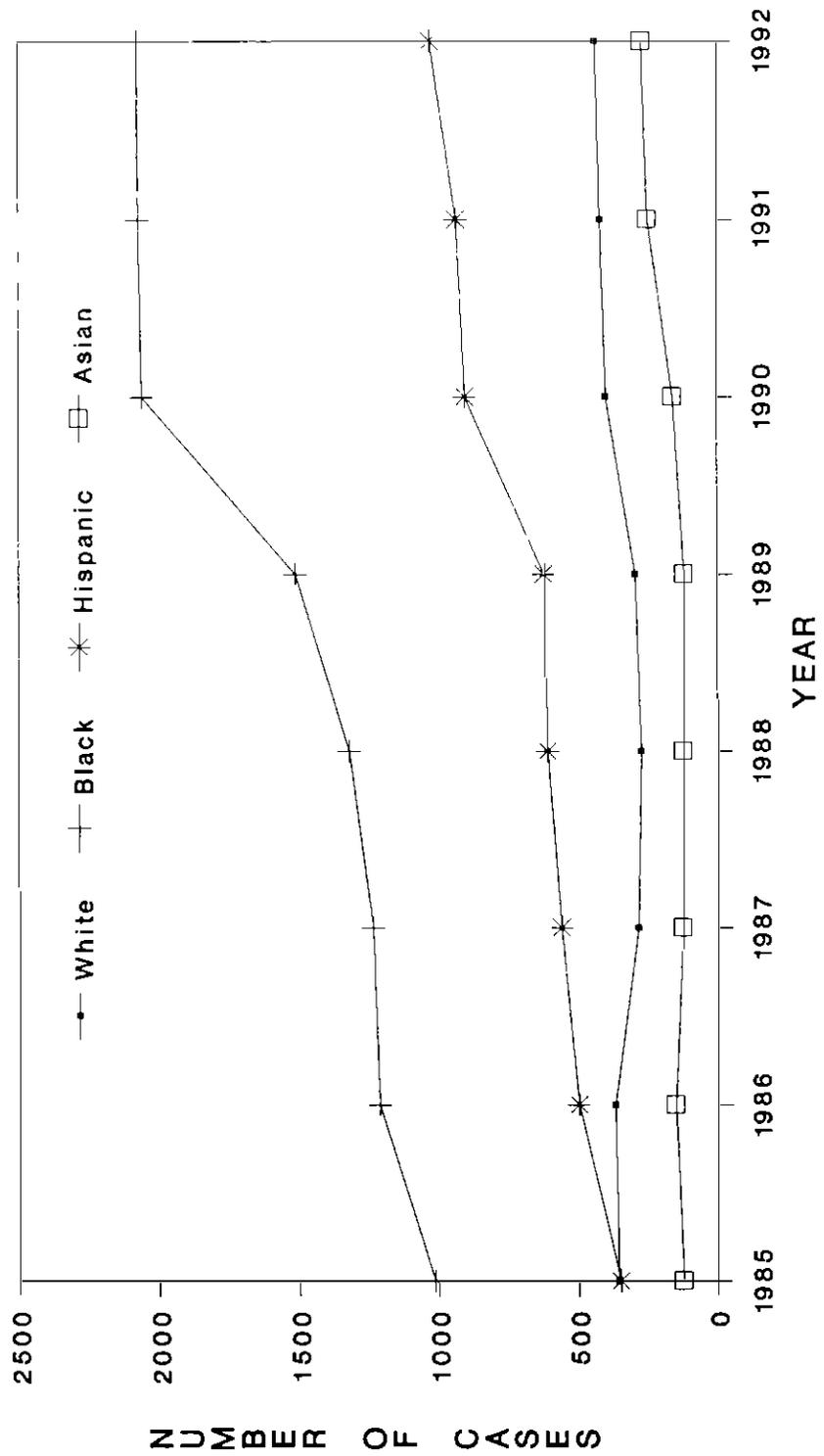
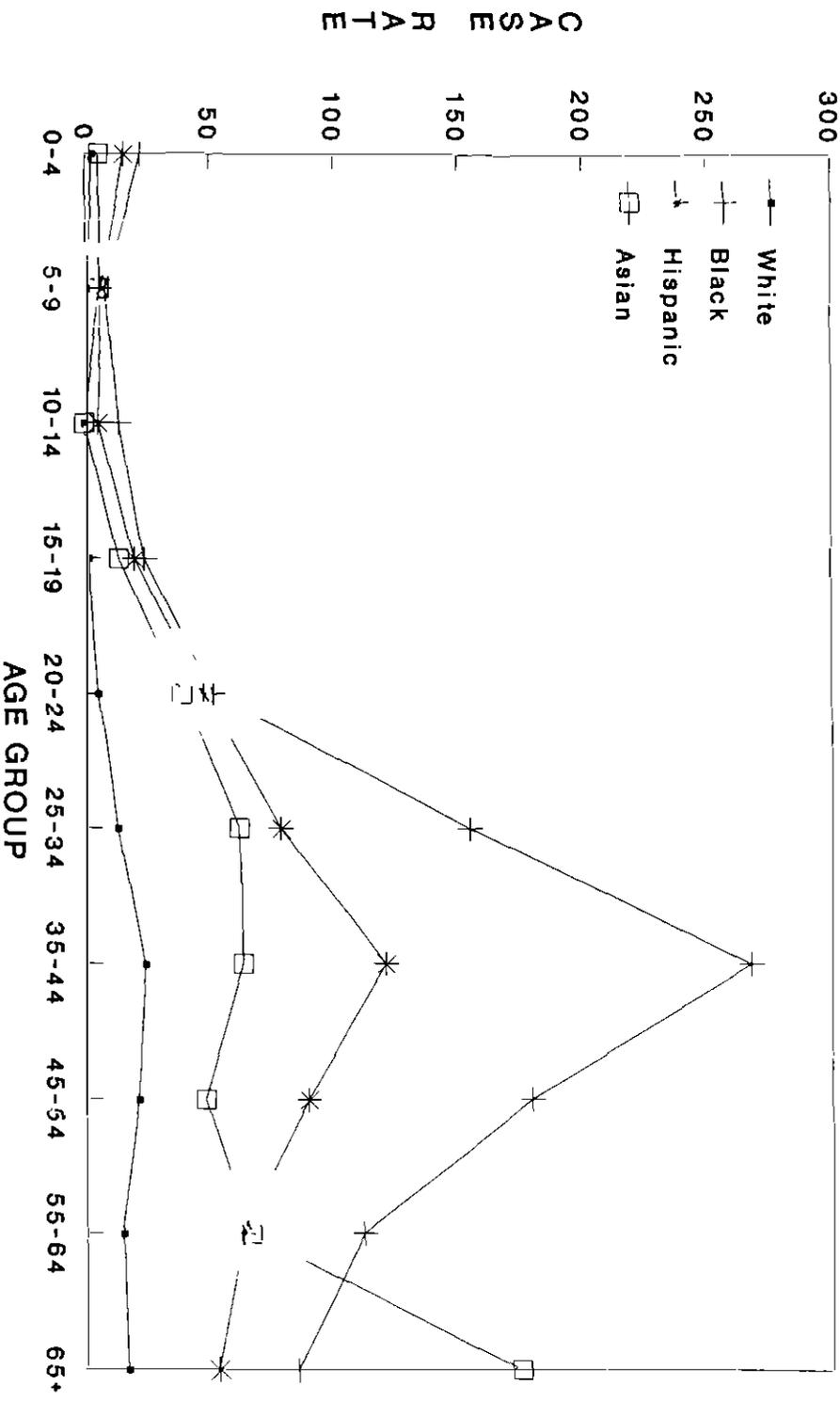


FIGURE 5

### Tuberculosis Cases in New York City by Age and Race/Ethnicity 1992



Rate per 100,000 population  
based on 1990 census

FIGURE 6

# DISTRIBUTION OF TB CASES - NYC 1992 by SEX and AGE GROUPS

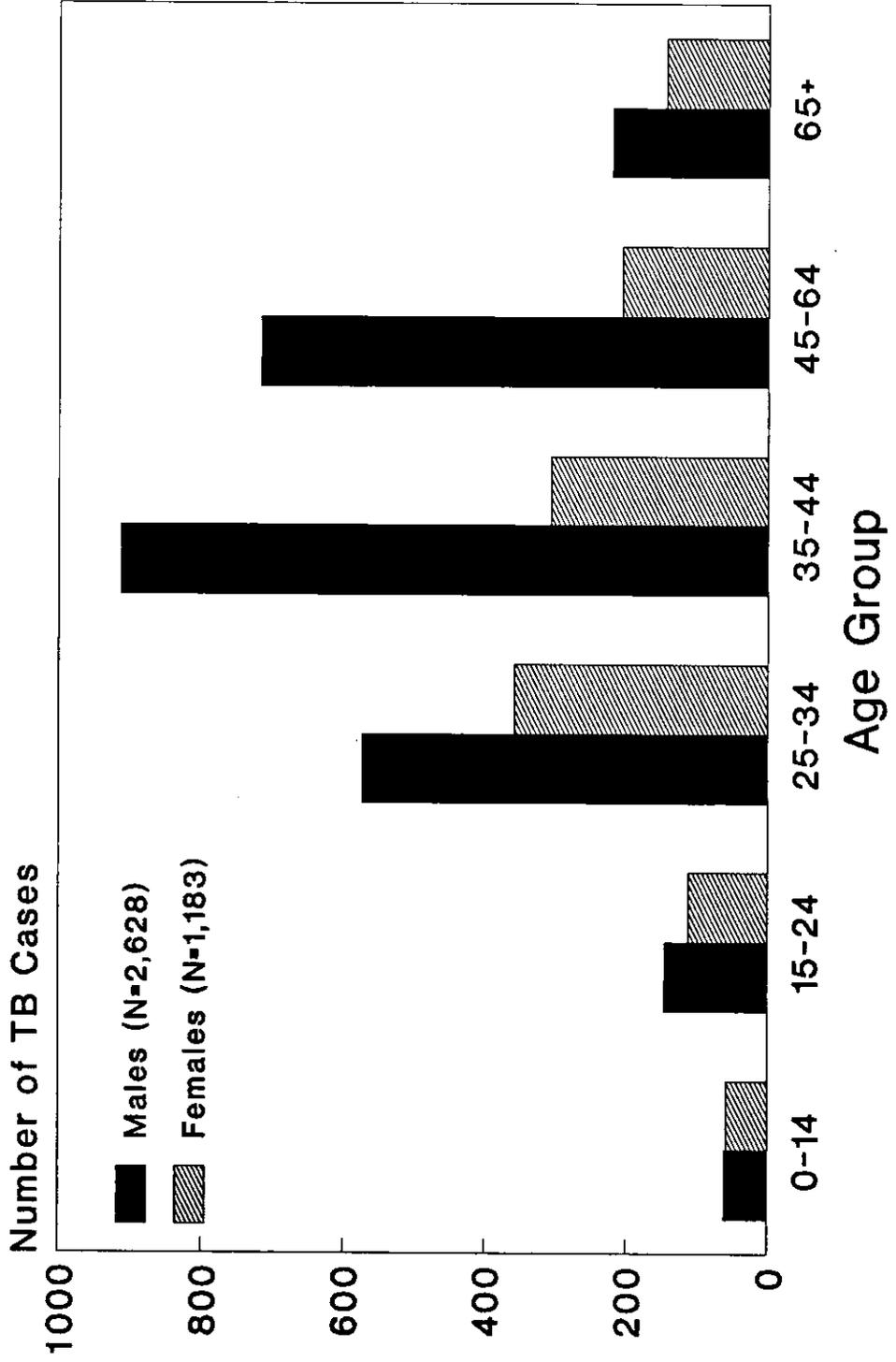


FIGURE 7

# Tuberculosis in NYC by borough 1992

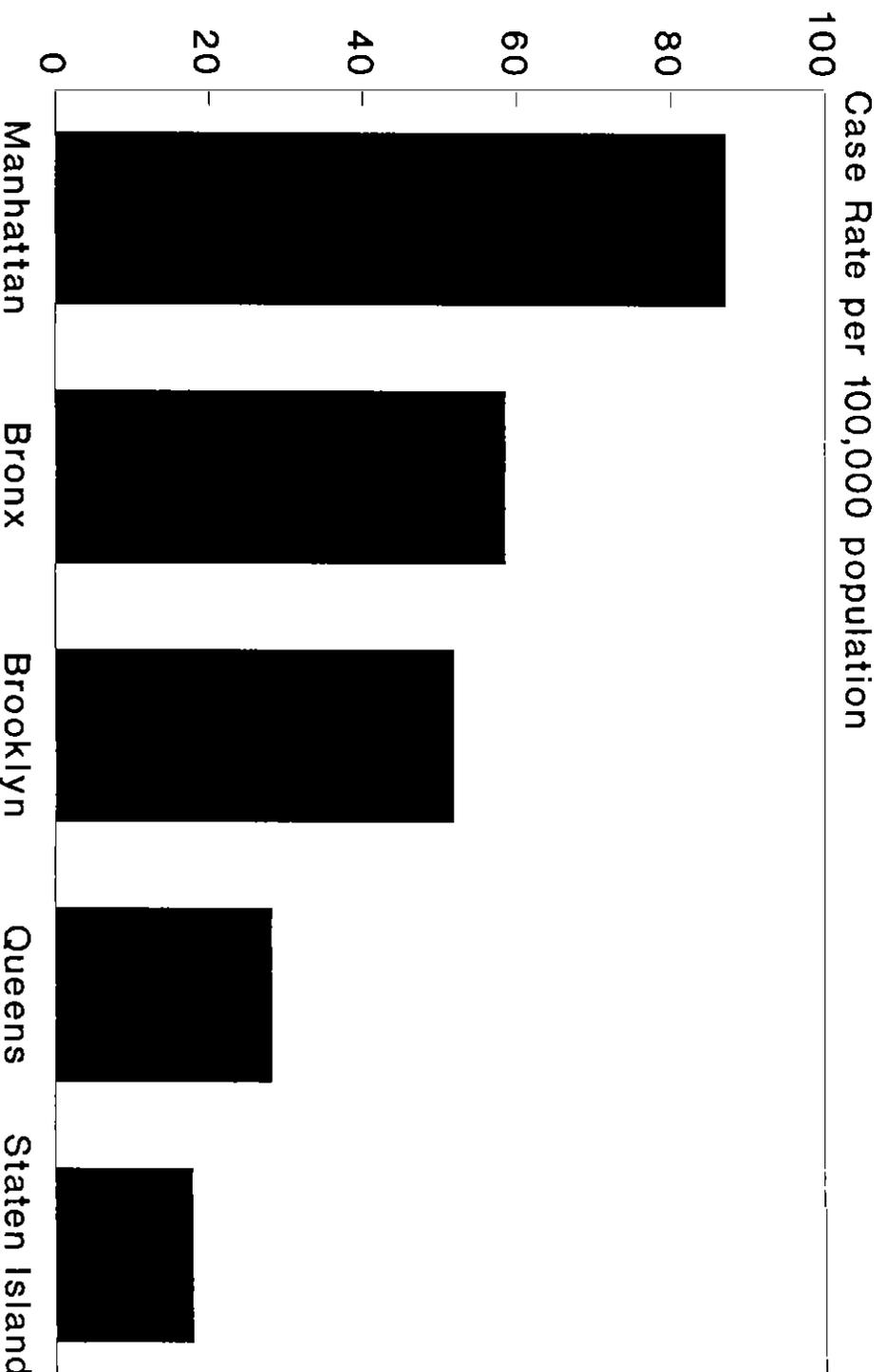
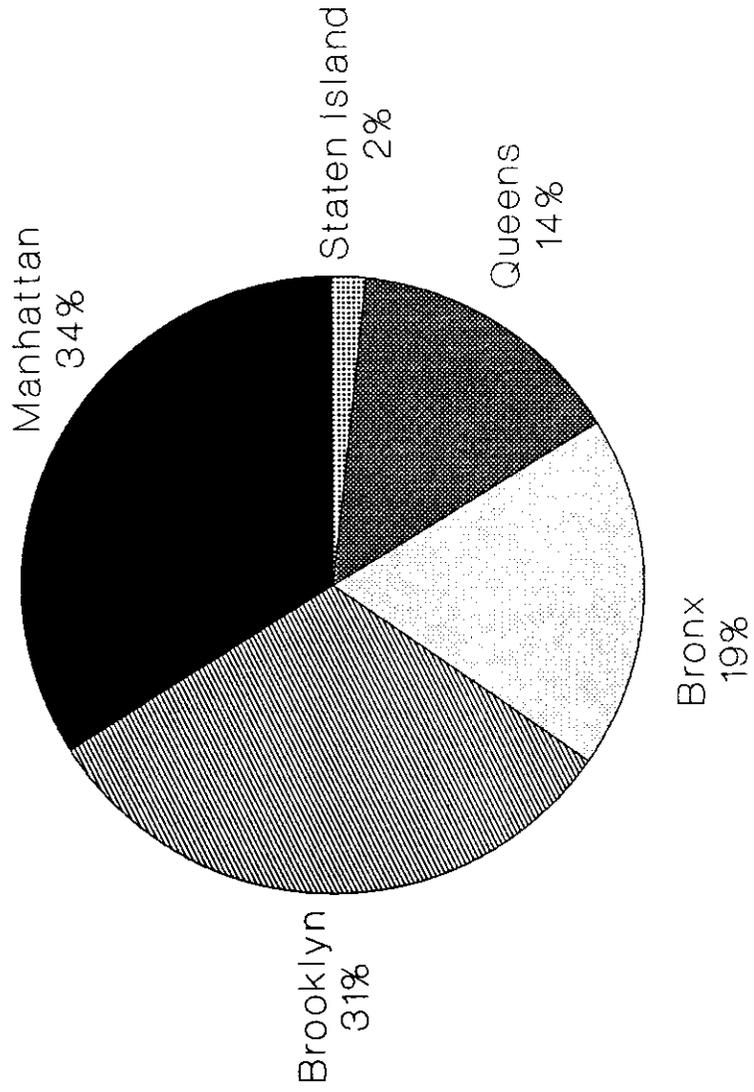


FIGURE 8

# TUBERCULOSIS IN NYC BY BOROUGH 1992



Number of Cases = 3,811

FIGURE 9

# HIV Serostatus Among Tuberculosis Patients Age 35-44, by Race/Ethnicity and Sex, 1992

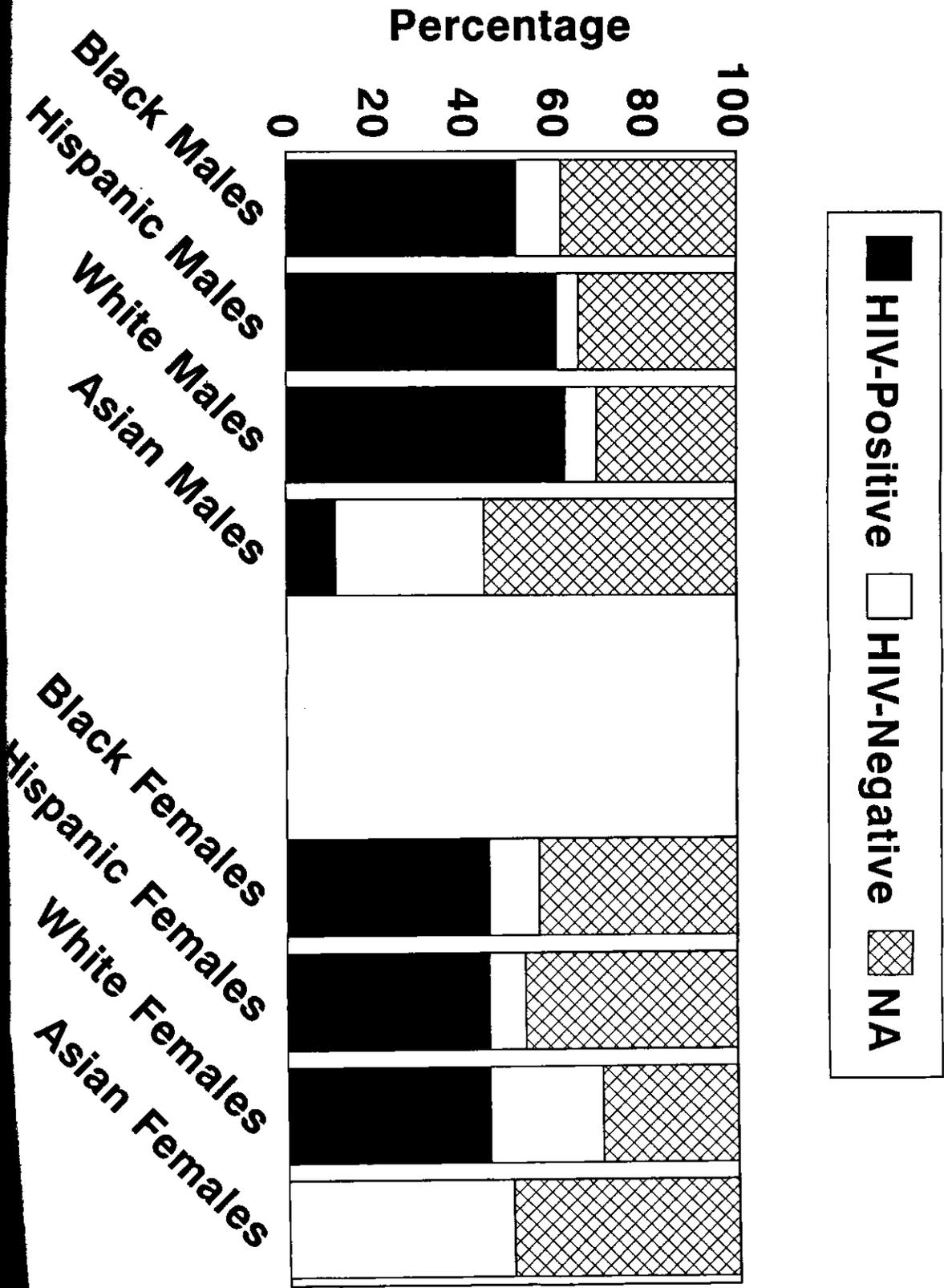
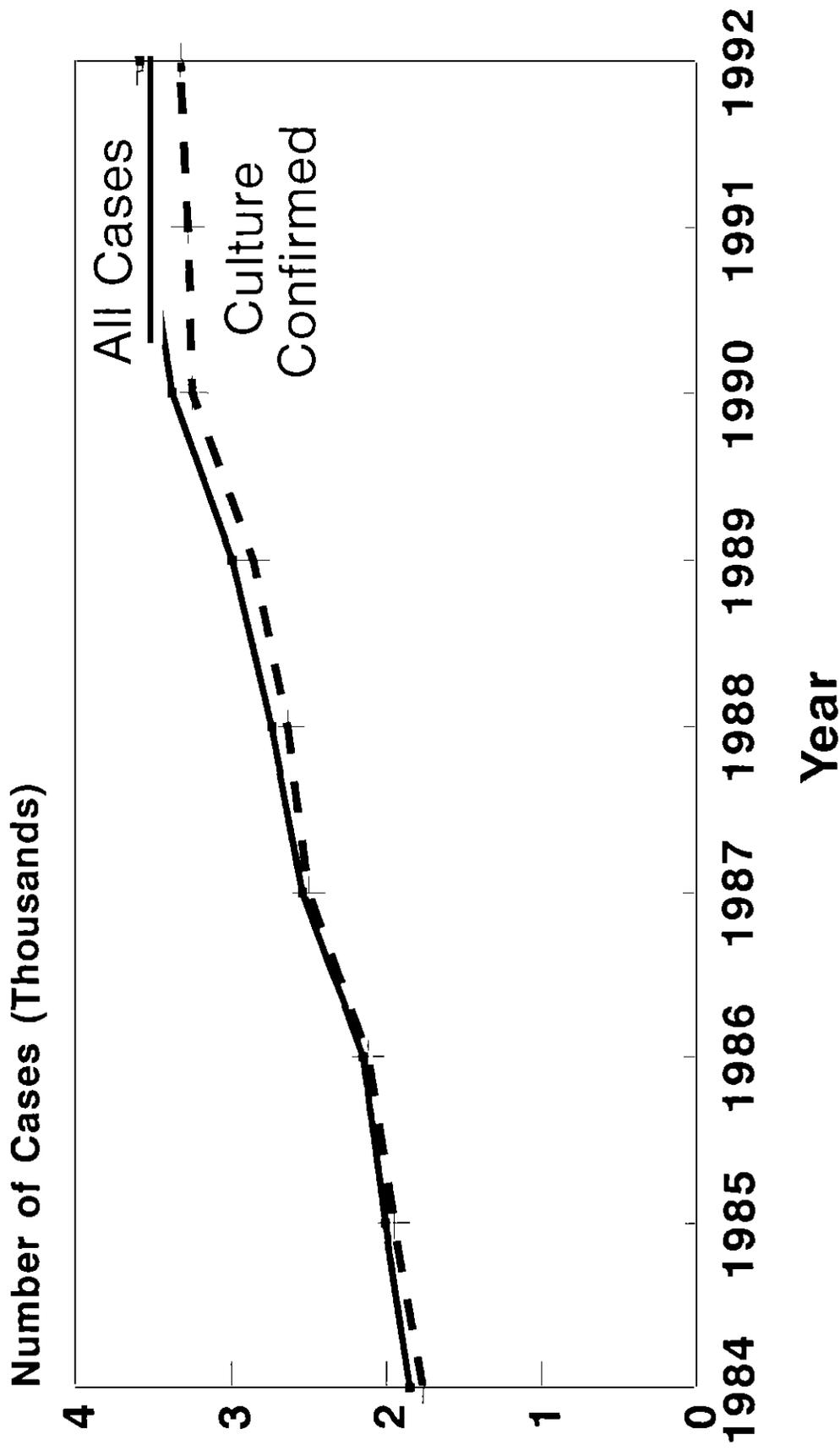


FIGURE 10

# Trend of Tuberculosis Cases New York City 1984 - 1992



RETURN TO  
MIAMI DORSIVILLE