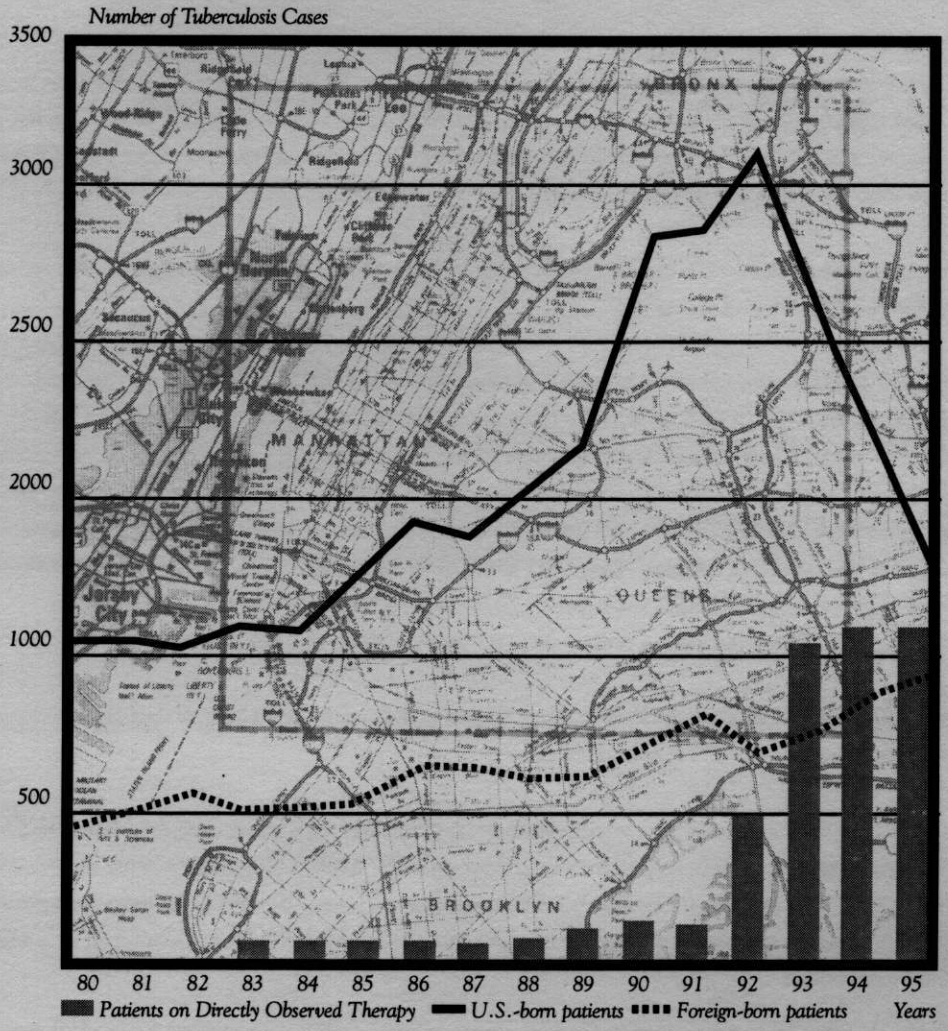
BUREAU OF TUBERCULOSIS CONTROL
NEW YORK CITY DEPARTMENT OF HEALTH



INFORMATION SUMMARY 1995

HIGHLIGHTS

1 In 1995, 2,445 new cases of tuberculosis were reported in New York City, an 18.4% decrease from the 2,995 cases reported in 1994 and a 35.8% decrease from the 3,811 cases reported in 1992 at the peak of the current epidemic. New York City's tuberculosis rate in 1995 was 33.4 cases per 100,000 persons, compared with 40.9 in 1994 and 52.0 in 1992.

2 Despite recent progress, New York City's 1995 tuberculosis rate is still nearly four times the national rate, and is the highest in the country.

3 In 1995, 109 of New York City's tuberculosis patients had strains of *Mycobacterium tuberculosis* which were multidrug-resistant, a 38.1% decrease from the 176 cases reported in 1994 and a 75.3% decrease from the 441 cases reported in 1992, at the peak of the epidemic.

4 Directly Observed Therapy (DOT) and intensive case management result in high rates of completion of therapy: of the cohort of patients diagnosed while alive in 1994(2,847), 91.7% have completed treatment. This completion index increases to 93.5% after patients with multidrug-resistant tuberculosis, who require prolonged treatment, are removed from the cohort.

5 Continued control of tuberculosis in New York City depends on a well-planned and timely response to emerging challenges:

* Between 1994 and 1995, the proportion of foreign-born tuberculosis patients increased from 32.5% to 41.8%. The number of foreign-born patients increased by 5.6% while U.S.-born patients decreased by 29.3%. Since 1992, the number of foreign-born patients has increased by 49.4%. Tuberculosis control in New York City depends on effective case finding and treatment of tuberculosis disease and infection among the foreign-born.

* Although the number of patients with multidrug-resistant strains of *Mycobacterium tuberculosis* continued to decline sharply in 1995, the proportion of such patients who have highly resistant strains has increased slightly. Continued surveillance of drug susceptibility of *Mycobacterium tuberculosis* strains, prompt diagnosis and adequate treatment of patients with MDRTB, and adherence to an initial four-drug treatment regimen remain essential.

* The proportion of tuberculosis patients with known HIV status increased between 1994 and 1995, but 36.5% of 1995 patients still had an unreported and/or unknown status. All medical providers should ensure that patients with tuberculosis are offered voluntary HIV counseling and testing.

Note: Figure on cover illustrates trends in U.S. and foreign-born cases between 1980 and 1995 as well as number of patients on Directly Observed Therapy (DOT) as of December 31, since 1983. Starting in 1991, patients born in Puerto Rico and the U.S. Virgin Islands were included as U.S.-born.

NEW YORK CITY DEPARTMENT OF HEALTH
BUREAU OF TUBERCULOSIS CONTROL

INFORMATION SUMMARY 1995

MISSION STATEMENT

The mission of the Bureau of Tuberculosis Control is to prevent the spread of tuberculosis and eliminate it as a public health problem in New York City. The goals of the tuberculosis control program are:

1 To assure identification and appropriate treatment of all individuals with suspected or confirmed tuberculosis disease, ideally on a regimen of directly observed therapy.

2 To ensure that individuals who are at high risk for progression from infection to active disease (e.g., contacts to active cases, immunocompromised persons, recent immigrants from areas where tuberculosis remains common) receive preventive treatment and do not develop disease.

The Bureau achieves its goals through direct patient care, education, surveillance and outreach. Mandated activities include:

1 Ensuring that suspected and confirmed cases of tuberculosis identified in all facilities in New York City are reported to the Bureau and documented on the computerized, confidential tuberculosis disease registry;

2 Conducting intensive case interviews and maintaining an effective outreach program so that tuberculosis cases remain under medical supervision until completion of a full course of treatment;

3 Monitoring and documenting the treatment status of all individuals with active tuberculosis;

4 Setting standards and guidelines, and providing consultation, on the prevention, diagnosis and treatment of tuberculosis infection and disease in New York City;

5 Ensuring that all identified contacts to active cases receive appropriate follow up;

6 Operating chest clinics throughout New York City to provide free state-of-the-art care to persons with suspected or confirmed tuberculosis disease and their close contacts in accordance with New York State Public Health Law 2202, Article 22, Title 1.

Errata

Figure 5, page 9: The symbols as shown in the legend for Hispanics and Asians should be reversed. Hispanics are indicated by triangles and Asians are indicated by squares.

Figure 7, page 11: The numbers underneath the bars indicate rates per 100,000 persons, not percents. The rate for Brooklyn is 36.8, the rate for the Bronx is 33.7 and the rate for Manhattan is 42.8 per 100,000.

Figure 11, page 16: The black bars indicate "Other" types of providers of DOT.

NEW YORK CITY DEPARTMENT OF HEALTH
BUREAU OF TUBERCULOSIS CONTROL
125 WORTH STREET, BOX #74, ROOM #216
NEW YORK, NY 10013

REPORTING FORMS REQUISITION

DELIVERY INFORMATION (PLEASE TYPE OR PRINT)

CONTACT PERSON: _____

AGENCY _____

ADDRESS: _____ ROOM #: _____

CITY/BORO _____ ZIP: _____

TELEPHONE# ( ) _____

FORMS REQUESTED (PLEASE CHECK BOXES BELOW)

			OTPS UNIT ONLY		
		Qty. Shipped	Date	Status	Initials
❒	TB76 (Case Report Form)				
❒	TB158 (Pathology Report Form)				
❒	TB159 (Laboratory Report Form)				
❒	TB78 (Preventive Therapy Report)				
❒	Annual Report				

_____ _____
Signature Date

Please fax or mail your request to:

Raymond McNeil, Office Manager
Bureau of TB Control
125 Worth Street, Box #74
New York, NY 10013
212-788-4187
Fax#: 212-788-9837

TB 204(6/96)

INFORMATION SUMMARY

An Overview of Activities of the Bureau of Tuberculosis Control

The Bureau of Tuberculosis Control operates a multifaceted program encompassing clinical services, outreach services, directly observed therapy, epidemiology and surveillance, and education and training.

Clinical Services

The Clinical Services Unit operates ten chest clinics located throughout the City and provided more than 175,000 patient sessions in 1995. These clinics provide specialty care, including Directly Observed Therapy, for individuals with active tuberculosis. The clinics also provide preventive therapy, especially to individuals at high risk for developing tuberculosis. Services include tuberculin skin testing, chest x-rays, sputum induction, medical and nursing care, social services, and HIV counseling and testing. All care is free and confidential.

Outreach Services

The Bureau's outreach workers monitor hospitalized patients and outpatients, evaluate contacts of individuals with tuberculosis disease, and update case information on a computerized registry. Outreach staff provide medical case management, travel throughout the city to observe individuals as they ingest their medication, locate and return patients to medical care, and test contacts of individuals with tuberculosis. Specialized outreach groups offer tuberculosis control services at the 30th Street Shelter and at Rikers Island Correctional Facility and, in partnership with the Division of AIDS Services, at single room occupancy sites in Upper Manhattan. The city operates a controlled treatment center at Goldwater Memorial Hospital for use when all other efforts have been exhausted, so that the most difficult-to-treat patients can complete a full course of treatment while the public health is safeguarded.

Directly Observed Therapy

Directly Observed Therapy (DOT) is a program in which individuals with active tuberculosis ingest their medication under the direct observation of a trained health care worker. This program ensures that individuals with active disease receive individual attention and optimal medical supervision through the entire course of treatment. DOT is provided through Department of Health (DOH) clinics and outreach services, and private providers funded by the New York State Department of Health, Medicaid and Ryan White Care Act Funds. Although it is labor intensive, DOT reduces hospitalizations, decreases the costs of care, and increases the number of individuals completing the full course of treatment. DOT is now the standard of care for individuals with active tuberculosis.

Epidemiology and Surveillance

Public health law mandates that health care providers report to the New York City Health Department all suspected and confirmed tuberculosis cases, as well as all children younger than five years with positive tuberculin skin tests, within 24 hours of detection. Likewise, all mycobacteriology and pathology laboratories are required to report to the health department any bacteriologic findings which suggest or confirm tuberculosis. Information about ordering forms is on the inside back cover.

The Surveillance Unit ensures that reporting is done in a timely and thorough manner by auditing laboratories throughout the City. Surveillance Unit staff also review medical records of suspected tuberculosis patients with no bacteriologic confirmation of disease to determine whether or not they should be considered tuberculosis cases. The unit also conducts outbreak investigations and operations research.

Education and Training

In addition to providing introductory and in-service training to Department of Health staff and non-DOH health professionals, the Education and Training Unit responds to public requests for information. The unit also provides multilingual educational brochures, fliers, posters, publications and technical articles. In 1995, more than 12,000 people attended educational sessions, more than 400,000 educational materials were distributed, and more than 3,000 public inquiries about tuberculosis were answered.

METHODS

Case Counting

Cases counted in 1995 were those verified during that year. Some 1995 cases were first suspected of having disease in 1994; likewise, some individuals first suspected of having tuberculosis in late 1995 will be counted in 1996 if active tuberculosis is confirmed in 1996. Individuals who submitted a specimen for mycobacteriology culture in late 1995 were included in the 1995 count if their culture was reported to be positive by February 15, 1996. A certain proportion of each year's counted cases are culture-negative for *Mycobacterium tuberculosis*. These cases never had a positive culture for *Mycobacterium tuberculosis* and were instead verified because their clinical symptoms and/or radiologic signs improved while they were on anti-tuberculosis medications. More complete verification of culture-negative cases by the Bureau of Tuberculosis Control in recent years has led to some surveillance artifact when longitudinal trends are considered, especially regarding tuberculosis cases in children, who tend to be culture-negative.

Rate Calculation

This report uses 1990 census figures for New York City to calculate case rates per 100,000 population. Case rates from years before 1991 were based on the 1980 census. Rates for racial/ethnic groups are based on numbers given in the census. According to the 1990 census, the total New York City population of 'Asians and other' is 528,879 and includes 18,924 persons of 'other' race/ethnicity; as in reports published by the Bureau of TB Control since 1991, the figure of 528,879 is used to calculate rates among Asians in New York City.

Age-adjusted case rates are provided in the section of the report on the geographic distribution of cases. Age standardization is a numerical technique that adjusts age-specific observed rates in population groups to a standard population age distribution so that different populations can be compared. Age standardization of the rates removes age differences between populations as a possible explanation for the differences in rates.

Since denominators used to calculate rates are derived from the 1990 census, rates included here do not reflect the significant numbers of immigrants who have entered New York City since 1990. Therefore, whenever possible, absolute numbers as well as crude and/or age-adjusted rates are compared. Cases from Puerto Rico, the U.S. Virgin Islands, and all U.S. territories were included in the figures for the United States. Ascertainment and reporting of place of birth have improved in the two last years, accounting for part of the increase in reported foreign-born cases since 1990.

INTRODUCTION *(Table 1, Figure 1)*

This report presents demographic and clinical characteristics of tuberculosis cases confirmed in New York City in 1995. In 1995, there was a continued downturn in New York City's recent tuberculosis epidemic. This offers reason for cautious optimism, but the ingredients for an epidemic are still present and any relaxation of control efforts will likely lead to another resurgence of tuberculosis.

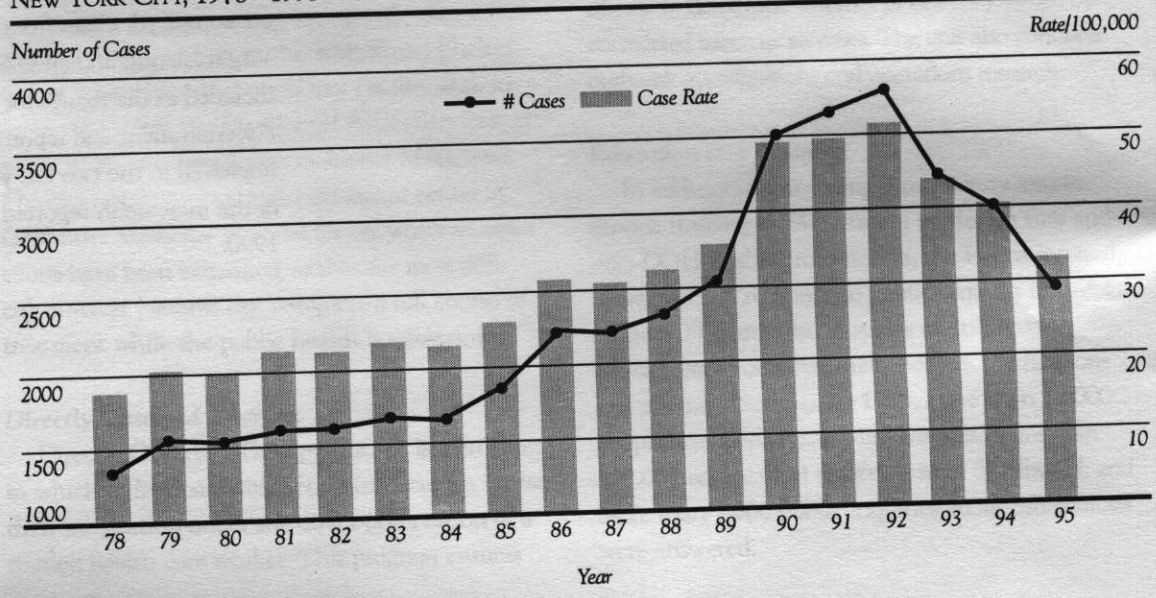
In 1995, 2,445 new cases of tuberculosis were reported in New York City. This is an 18.4% decrease compared with the 2,995 cases reported in 1994. The city's case rate is now 33.4 cases per 100,000 population.

The lowest number of tuberculosis cases in New York City was reported in 1978 (1,307). After 1978, the number of cases rose fairly steadily, to peak in 1992 at 3,811 cases and a rate of 52.0 per 100,000. The number of cases reported in 1995 is 35.8% lower than the number reported in 1992 at the peak of the epidemic. The number of culture-confirmed cases reported in 1995 (2,014) is 41.5% lower than the number reported in 1992 (3,442).

The tuberculosis epidemic in New York City heralded national trends. Nationally, the number of tuberculosis cases started to increase in 1986 and peaked at 26,673 cases in 1992, yielding a national case rate of 10.5 per 100,000 population. Between 1992 and 1995, the number of cases nationally decreased by 3,860, to 22,813 cases in 1995. With 1,366 fewer cases in 1995 than in 1992, New York City contributed 35.4% to the national decrease in tuberculosis between those years.

While New York City has made great progress in tuberculosis control over the past few years, the number of tuberculosis cases reported in New York City in 1995 is still almost twice as many as the number reported in 1978. New York City's 1995 rate of 33.4 per 100,000 is nearly four times the national rate of 8.7 per 100,000. In 1995, New York City contributed 10.7% of the nation's total 22,813 reported tuberculosis cases. In 1995, as in previous years, New York City had the highest case rate in the country with more than three times as many cases as any other city in the U.S. and more cases than the next four cities (Los Angeles, Houston, Chicago, and Philadelphia) combined.

FIGURE 1
TUBERCULOSIS CASES AND RATES
NEW YORK CITY, 1978 - 1995



As this report will illustrate, New York City has in recent years essentially experienced two tuberculosis epidemics, one among persons born in the United States, among whom infection with HIV has been an important contributing factor, and the other among foreign-born persons. The newest New Yorkers bring economic, social, and intellectual resources to our city, and also bring unique health challenges, of which tuberculosis is one.

Age Distribution *(Table 2, Figure 2)*

In 1995, people with active tuberculosis ranged in age from less than one year old to 99 years old. Tuberculosis case rates were highest in the groups aged 35 through 44 and 45 through 54 years. All age groups, except that consisting of adolescents aged 15 through 19 years, had fewer tuberculosis cases in 1995 than in 1994; the number of cases in the 15 through 19 year age group, however, increased by only 1.4%. The largest percentage decreases in tuberculosis incidence between 1994 and 1995 were seen among persons aged 5 through 9 years (24.4%, from 41 cases in 1994 to 31 in 1995) and 25 through 34 years (23.9%, from 656 in 1994 to 499 in 1995).

The 134 cases among children younger than 15 years represented 5.5% of all 1995 cases. Children younger than five years with active tuberculosis are sentinel cases in that they suggest the presence of an infectious source. Diagnosis of tuberculosis in a child this young triggers a search for active cases among the child's contacts. The number of cases among children younger than five years decreased to 76 in 1995, a 9.5% decrease from the 84 under-five cases reported in 1994.

The 202 tuberculosis cases among persons aged 15 through 24 years represent 8.3% of all cases; the incidence of tuberculosis cases in this age group was similar to the 209 cases seen in 1994. Among persons aged 25 through 34, there were 499 cases, accounting for 20.4% of total cases. The largest proportion of 1995 cases, 27.6%, occurred in the 35 through 44 year age group; there were 674 cases in this group, a 19.7% decrease from the 839 cases seen in 1994. The 634 tuberculosis cases among persons aged 45 through 64 years accounted for 25.9% of all cases; incidence of tuberculosis cases in this age group decreased by 19.6% from the 789 cases seen in 1994. Cases among individuals older than 65 years decreased 13.5%, from 349 in 1994 to 302 in 1995, and represented 12.4% of all 1995 cases.

FIGURE 2
TUBERCULOSIS CASES BY AGE
NEW YORK CITY, 1990 - 1995

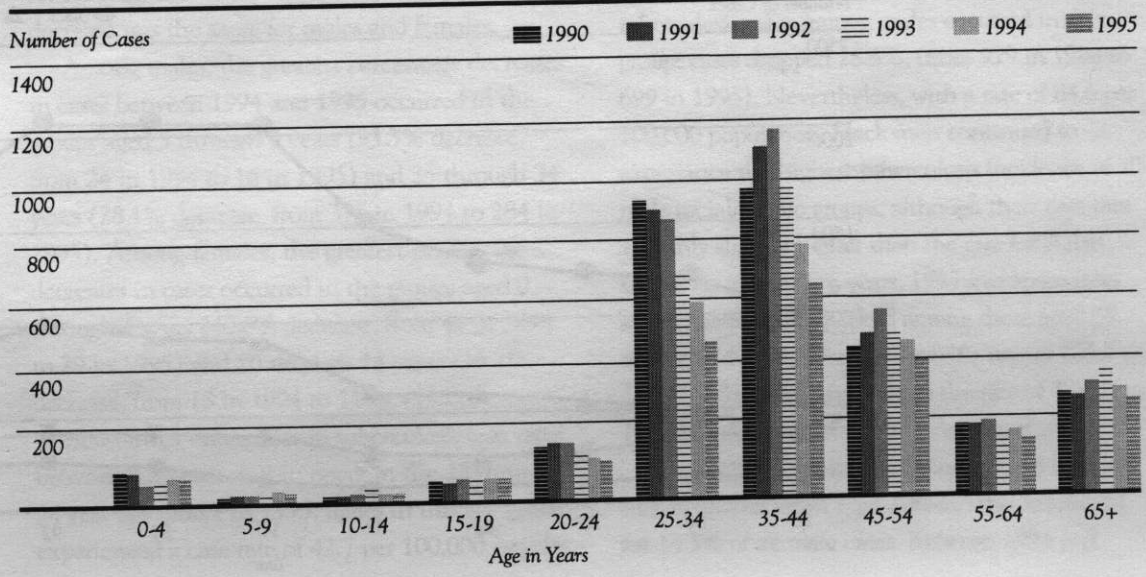
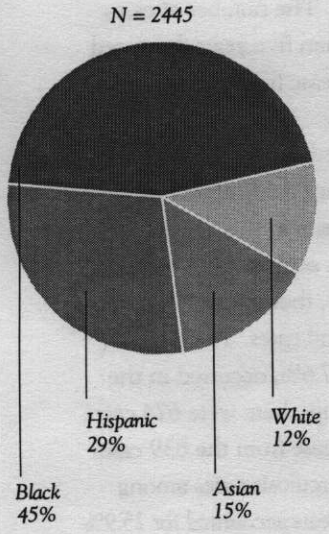


FIGURE 3
TUBERCULOSIS CASES
BY RACE/ETHNICITY
NEW YORK CITY, 1995



RACIAL/ETHNIC DISTRIBUTION
(Table 2, Figures 3 - 5)

As in previous years, the highest proportion of 1995 tuberculosis cases (45.0%) occurred among Blacks. The 1,101 cases reported among Blacks in 1995 gave this group a case rate of 59.6 per 100,000, second only to that for Asians. Between 1994 and 1995, the number of tuberculosis patients who are black decreased more sharply (by 26.8%) than the number of patients of other racial/ethnic groups. Since the peak of the epidemic in 1992, the number of tuberculosis patients who are black has decreased by 47.0%.

The 698 Hispanic cases represented 28.5% of total 1995 tuberculosis cases. Hispanics had a case rate of 39.1 per 100,000. The number of tuberculosis patients who are Hispanic decreased by 10.7% since 1994 and by 32.0% since 1992.

The 286 cases among Whites accounted for 11.7% of the 1995 total. Whites had a case rate of 9.0 per 100,000, lower than that for any other racial/ethnic group. The number of tuberculosis patients who are white decreased by 18.1% since 1994 and by 34.4% since 1992.

Asians were the only racial/ethnic group not to experience a decrease in the number of tuberculosis cases. With 360 cases in 1995, exactly the same number as in 1994, Asians accounted for 14.7% of the 1995 total, compared with 12.0% in 1994. As in 1994, they had a case rate of 68.1 per 100,000. The number of tuberculosis patients who are Asian increased by 32.4% since 1992.

Tuberculosis incidence rates by age peaked between 35 through 44 years for Blacks and Hispanics, and in the age group older than 65 years for Whites and Asians. Elderly Asians (65 years and older) had case rates higher than elderly persons in any other racial/ethnic group, and their rate exceeded that of all other racial/ethnic age groups. Elderly Asian males had the highest case rate of all other age, sex or racial groups (324.2 per 100,000).

DISTRIBUTION BY SEX *(Tables 3 - 4, Figure 6)*

As in previous years, the incidence of tuberculosis among males in 1995 was approximately twice the incidence among females: 45.3 per 100,000 among males vs. 22.9 per 100,000 among females.

FIGURE 4
TUBERCULOSIS CASES BY RACE/ETHNICITY
NEW YORK CITY, 1985 - 1995

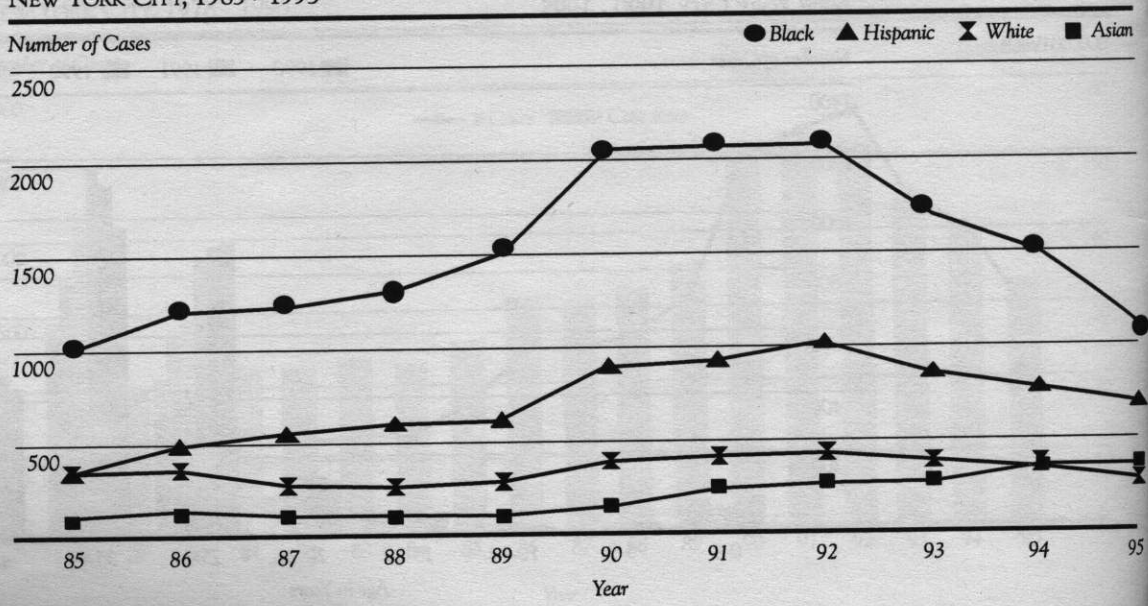
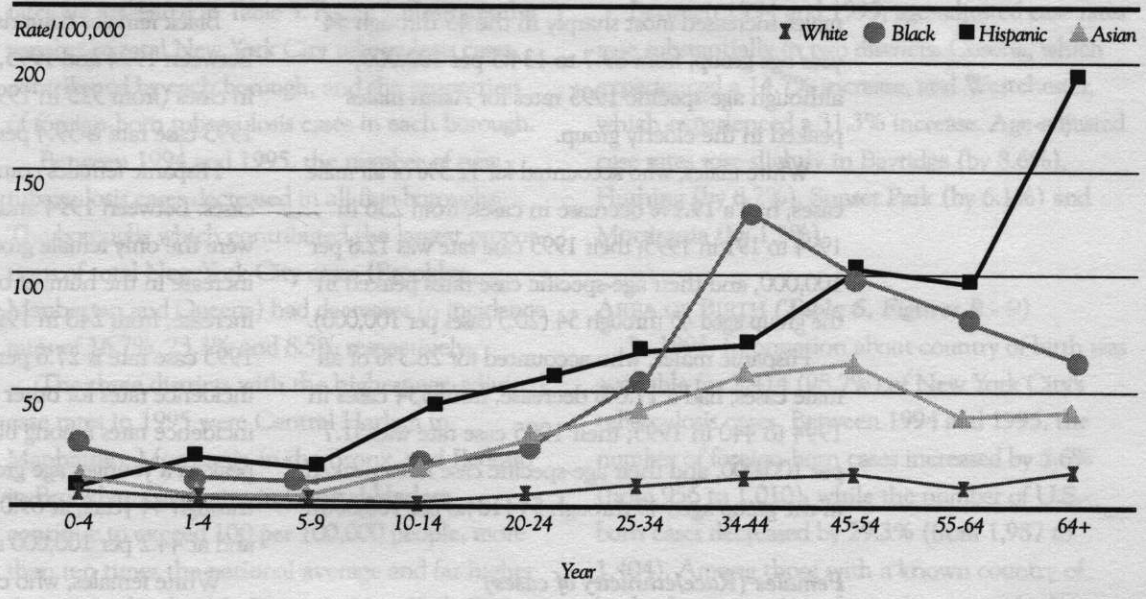


FIGURE 5
TUBERCULOSIS CASE RATES BY AGE AND RACE/ETHNICITY
NEW YORK CITY, 1995



The proportion of 1995 cases who are female (36.4%) is somewhat greater than the proportion observed in the last two years (34.6% in 1994 and 1993), and the proportion of female cases has increased slightly but steadily since the early 1990s (29.3% female in 1990, 29.9% in 1991, and 31.0% in 1992). The annual decrease in tuberculosis cases from 1994 to 1995 was 20.5% for males and 14.3% for females; between 1994 and 1993, the percent decrease was the same for males and females.

Among males, the greatest percentage decreases in cases between 1994 and 1995 occurred in the groups aged 5 through 9 years (33.3% decrease, from 24 in 1994 to 16 in 1995) and 25 through 34 years (28.1% decrease, from 395 in 1994 to 284 in 1995). Among females, the greatest percentage decreases in cases occurred in the groups aged 0 through 4 years (40.8% decrease, from 49 in 1994 to 29 in 1995) and 10 through 14 years (26.7% decrease, from 15 in 1994 to 11 in 1995).

Substantial differences in tuberculosis case rates between the sexes start to occur in the 25 through 34 year age group. In 1995, males in this age group experienced a case rate of 42.7 per 100,000 population, whereas females experienced a case rate of 30.5 per 100,000. The greatest difference between rates for males and females occurred in the 45 through 54 year age group (85.3 per 100,000 for males vs. 25.9 for females).

Males (Race/ethnicity of cases)

Black males accounted for 44.9% of all male cases. The greatest decrease in number of tuberculosis cases among males occurred in this group: cases dropped 28.6%, (from 979 in 1994 to 699 in 1995). Nevertheless, with a rate of 84.6 per 100,000 population, black men continued to experience the highest tuberculosis incidence of all male racial/ethnic groups, although their case rate was only slightly higher than the rate for Asian males. As in previous years, 1995 incidence rates among black males peaked among those aged 35 through 44 years, to an age-specific rate of 225.5 per 100,000; this is second only to the rate of 324.2 per 100,000 among elderly (65+) Asian males.

The only male group to experience an increase in tuberculosis cases were Asians, who accounted for 14.5% of all male cases. Between 1994 and

1995, cases among Asian males increased by 8.1%, to yield a 1995 case rate of 84.4 per 100,000. Between 1994 and 1995, case rates among Asian males increased most sharply in the 45 through 54 year age group, from 89.7 to 134.5 per 100,000, although age-specific 1995 rates for Asian males peaked in the elderly group.

White males, who accounted for 12.3% of all male cases, had a 19.1% decrease in cases, from 236 in 1994 to 191 in 1995; their 1995 case rate was 12.8 per 100,000, and their age-specific case rates peaked in the group aged 45 through 54 (20.5 cases per 100,000).

Hispanic males, who accounted for 28.3% of all male cases, had a 17.6% decrease, from 534 cases in 1994 to 440 in 1995; their 1995 case rate was 51.7 per 100,000, and their age-specific case rates peaked in the group aged 45 through 54 (104.6 per 100,000).

Females (Race/ethnicity of cases)

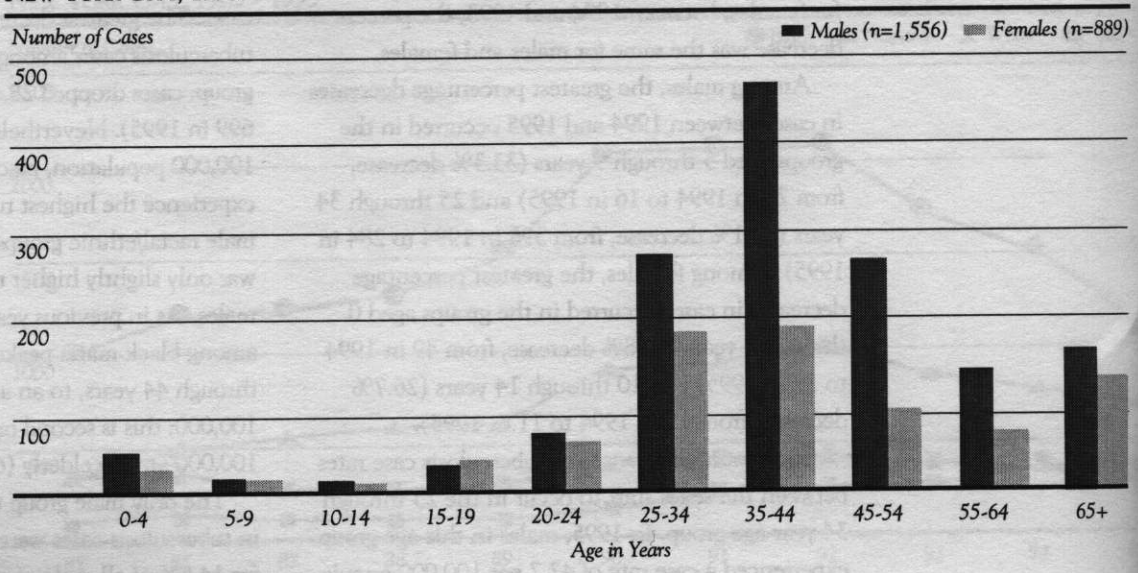
Asian females comprised 15.1% of female cases. Although Asian females experienced an 11.3% decrease in number of cases between 1994 and 1995 (from 151 to 134), their case rate of 51.3 per 100,000 is higher than for females in any other racial/ethnic group. Among Asian females, age-specific case rates peaked in the group aged 65 years and older (at 95.5 per 100,000).

Black females comprised 45.2% of female cases. Between 1994 and 1995, they had a 23.4% decrease in cases (from 525 in 1994 to 402 in 1995). Their 1995 case rate is 39.4 per 100,000.

Hispanic females comprised 29.0% of female cases. Between 1994 and 1995, Hispanic females were the only female group to experience an increase in the number of tuberculosis cases (a 4% increase, from 248 in 1994 to 258 in 1995). Their 1995 case rate is 27.6 per 100,000. Compared with incidence rates for other female racial/ethnic groups, incidence rates among black and Hispanic females peak in a younger age group (among women aged 35 through 44 years, at 69.0 per 100,000 among Blacks and at 44.2 per 100,000 among Hispanics).

White females, who comprised 10.7% of female cases, experienced a 15.9% decrease in cases (from 113 in 1994 to 95 in 1995). Their 1995 case rate is 5.7 per 100,000, and their age-specific case rates peak at 11.9 per 100,000 in the group aged 65 years and older.

FIGURE 6
DISTRIBUTION OF TUBERCULOSIS CASES BY SEX AND AGE
NEW YORK CITY, 1995



Geographic Distribution *(Table 5, Figure 7)*

Incidence rates by health district of residence were calculated for 1995; age-adjusted and crude rates are presented in Table 5. Figure 7 illustrates the number of total New York City tuberculosis cases contributed by each borough, and the proportion of foreign-born tuberculosis cases in each borough.

Between 1994 and 1995, the number of new tuberculosis cases decreased in all five boroughs. The boroughs which contributed the largest proportions of total New York City cases (Brooklyn, Manhattan and Queens) had decreases in incidence rates of 16.7%, 23.3% and 8.5% respectively.

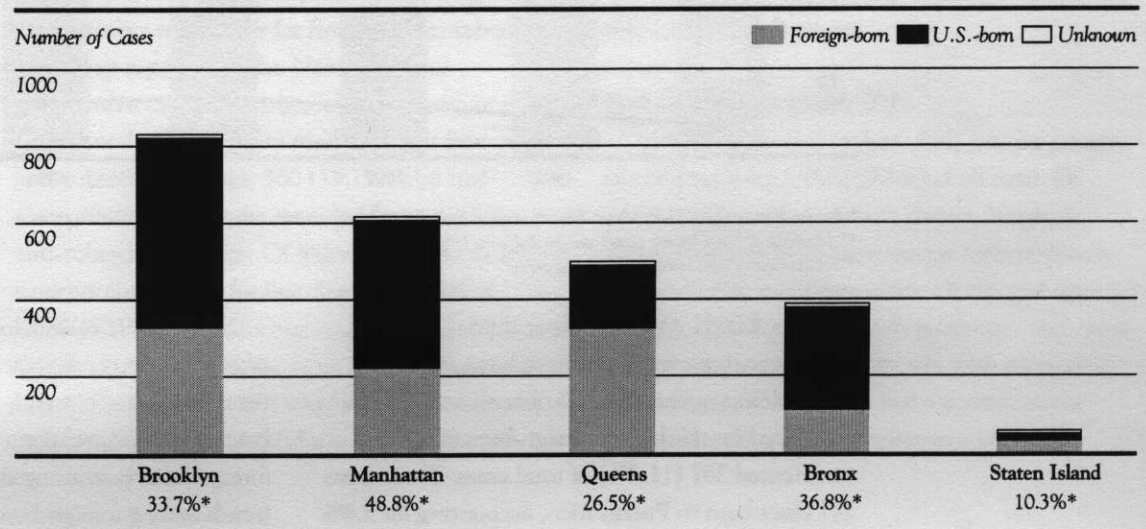
The three districts with the highest age-adjusted case rates in 1995 were Central Harlem in Manhattan, Morrisania in the Bronx, and Bedford in Brooklyn. Case rates in Central Harlem continue to exceed 100 per 100,000 people, more than ten times the national average and far higher than any other health district in New York City. Nevertheless, in two of the three districts with the highest rates (Central Harlem and Bedford), age-adjusted case rates decreased between 1994 and 1995, by 5.2% and 16.9% respectively. Since the peak of the epidemic in 1992, age-adjusted case rates decreased in all three districts: by 52.0% in Central Harlem, by 21.9% in Morrisania, and by 36.3% in Bedford.

Between 1994 and 1995, age-adjusted case rates rose substantially in two districts: Corona, which experienced a 14.7% increase, and Westchester, which experienced a 31.3% increase. Age-adjusted case rates rose slightly in Bayridge (by 8.6%), Flushing (by 8.2%), Sunset Park (by 6.1%) and Morrisania (by 1.3%).

Area of Birth *(Table 6, Figures 8 - 9)*

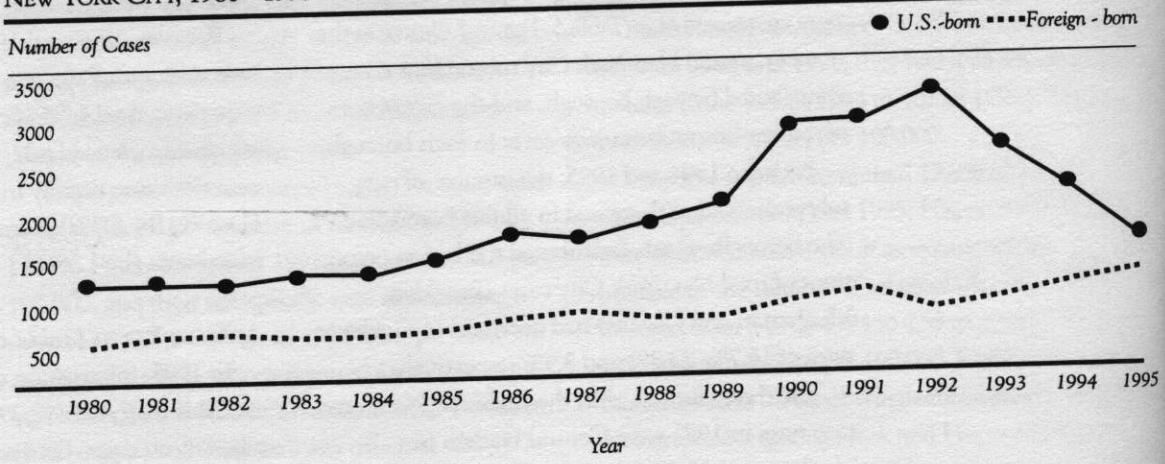
In 1995, information about country of birth was available for 2,414 (98.7%) of New York City's tuberculosis cases. Between 1994 and 1995, the number of foreign-born cases increased by 5.6% (from 956 to 1,010), while the number of U.S.-born cases decreased by 29.3% (from 1,987 to 1,404). Among those with a known country of birth, the proportion of cases born outside the United States increased to 41.8%, from 32.5% in 1994. Figure 8 illustrates trends in numbers of foreign-born cases since 1980: between 1980 and 1995, the number of foreign-born tuberculosis patients more than doubled.

FIGURE 7
TUBERCULOSIS CASES BY PLACE OF BIRTH AND BOROUGH
NEW YORK CITY, 1995



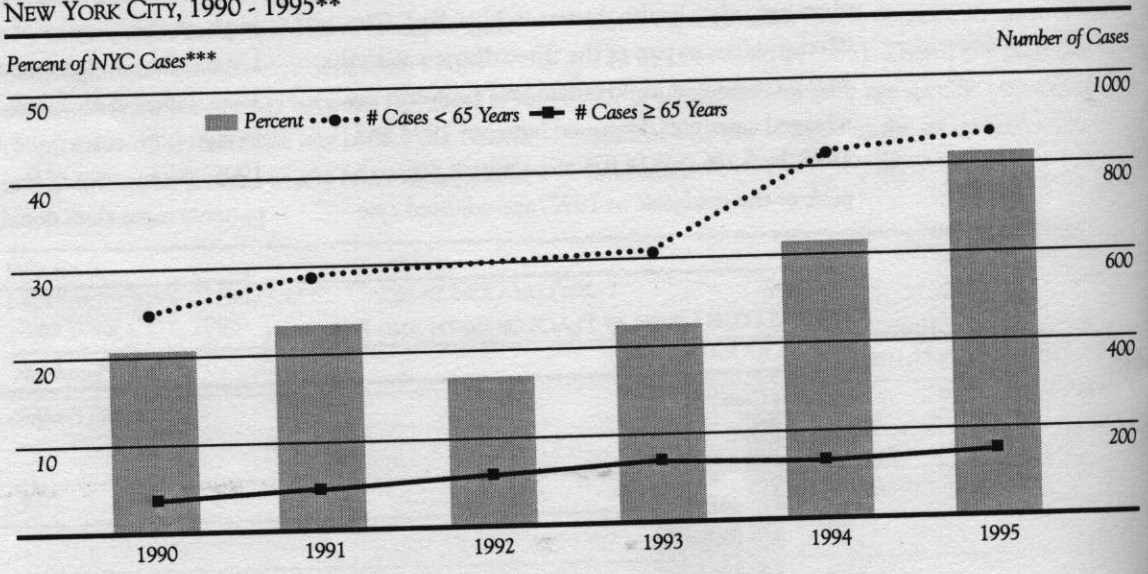
* *Rate per 100,000 population*

FIGURE 8
FOREIGN-BORN CASES*
NEW YORK CITY, 1980 - 1995



* Starting in 1991, Puerto Rico and U.S. Virgin Islands included as U.S.-born.

FIGURE 9
FOREIGN-BORN CASES* BY AGE GROUP
NEW YORK CITY, 1990 - 1995**



* Puerto Rico and the U.S. Virgin Islands are not included as foreign born.
** Number of cases by age group not available in 1992.
*** NYC cases with known country of birth.

A total of 91 countries other than the United States were reported as places of birth for 1995 tuberculosis patients. The Caribbean area, which accounted for the largest foreign-born group, contributed 287 (11.9%) of total cases. There were 141 cases born in Puerto Rico, accounting for 5.8% of total cases.

Incidence of tuberculosis among the elderly often represents reactivation of latent disease. Figure 9 illustrates trends in numbers of all foreign-born cases, and compares trends in numbers among foreign-born persons aged 65 years and older to trends among foreign-born persons aged younger than 65 years. The number of cases occurring

among persons 65 years and older has remained relatively constant suggesting a steady level of reactivation. There has been a steady rise, however, in numbers of cases occurring among persons younger than 65 years.

History of Prior Tuberculosis

Of the 2,445 1995 tuberculosis cases, 100 (4.1%) had a previous history of tuberculosis documented on their current records in the New York City Department of Health tuberculosis registry. In addition, in 1995, 21 cases had previously been designated as either confirmed or suspected tuberculosis cases, but did not have a history of tuberculosis documented on their current registry records. Thus, a total of 121 cases (4.9% of total 1995 cases) had some indication of confirmed or suspected past tuberculosis disease. History of previous tuberculosis disease is of interest because incomplete or inadequate treatment for an earlier episode of tuberculosis increases the risk that the *Mycobacterium tuberculosis* organisms harbored in a patient will develop drug resistance.

Drug Resistance

During 1995, 2,014 (82.4%) of the city's tuberculosis cases had cultures positive for *Mycobacterium tuberculosis*. Of these 2,014 culture-positive individuals, 1,889 (93.8%) had drug susceptibility test results for first-line anti-tuberculosis drugs reported in the New York City Department of Health tuberculosis registry; of individuals with susceptibility results for first line anti-tuberculosis drugs, 360 (19.1%) also had susceptibility test results recorded for second-line anti-tuberculosis drugs. Of individuals with drug susceptibility results for first-line drugs, 109 of 1,889 (5.8%) had multidrug-resistant strains (i.e., they had isolates resistant to at least isoniazid and rifampin). Between 1994 and 1995, the number of multidrug-resistant tuberculosis (MDRTB) cases decreased by 38.1%, from 176 cases in 1994 to 109 in 1995. The number of MDRTB cases reported in 1995 decreased by 75.3% from the 441 cases reported in 1992, at the peak of the epidemic. In addition to the 109 MDRTB cases which were confirmed in 1995, four patients with tuberculosis confirmed in earlier years and who had previously had fully susceptible *Mycobacterium tuberculosis* on culture were found to have multidrug-resistant cultures in 1995.

Of those individuals with multidrug-resistant strains of tuberculosis, 33 (30.3%) had isolates which were resistant to only isoniazid and rifampin; 11 (10.1%) had isolates resistant to isoniazid, rifampin and one other first-line drug; 27 (24.8%) had isolates resistant to isoniazid, rifampin and two other first-line drugs; and 10 (9.2%) had isolates resistant to isoniazid, rifampin and three other first-line drugs. The remaining 28 (25.7%) had isolates resistant to most first line drugs plus kanamycin; the proportion of patients with MDRTB and such highly resistant strains has increased slightly since 1994, when 20% of patients with MDR strains of TB had isolates resistant to most first line drugs plus kanamycin.

Of the 109 patients with MDRTB, 24 (22.0%) were foreign-born, 83 (76.1%) were U.S.-born and 2 (1.8%) had an unknown country of birth. Nine (8.3%) MDRTB cases had previously received anti-tuberculosis medications.

Site of Disease *(Table 7)*

In 1995, pulmonary tuberculosis was the primary site of disease for 1,939 (79.3%) of all cases. Of persons with extrapulmonary disease, lymphatic tuberculosis was the most common form of disease, followed by pleural tuberculosis. Of all cases reported in 1995, 200 (8.2%) had both pulmonary and extra-pulmonary disease. Of 1,939 cases with pulmonary involvement, 962 (49.6%) had a positive smear from either sputum or a respiratory specimen.

Sociomedical Factors (*Table 8*)

Information about such social factors as use of injection and non-injection drugs and alcohol, incarceration, homelessness and occupation is important for effective tuberculosis control. The presence of these factors may predict poor adherence and increased likelihood of adverse reactions to prescribed anti-TB drug regimens or suggest high risk for infection with the human immunodeficiency virus. A history of homelessness or work in certain fields (e.g., health care) may predict difficulties in assuring patient adherence or suggest possible sources of infection.

It is frequently difficult to elicit information about substance abuse and occupation from patients. Information about these variables is missing for a large proportion (35 to 38%) of 1995 cases. Among patients for whom information about substance abuse in the 12 months before diagnosis was available, 6.4% had used illegal injectable drugs, 11.8% had used illegal non-injectable drugs, and 13.0% had abused alcohol. Because the accurate recording of information about social variables was specifically emphasized in 1995, comparison of these data between 1994 and 1995 is subject to surveillance artifact. It seems, however, that the proportion of tuberculosis patients with a history of substance abuse in the 12 months before diagnosis was lower in 1995 than in 1994: in 1994, among patients for whom information about substance abuse was available, 10.5% had used illegal injectable drugs, 16.4% had used illegal non-injectable drugs, and 15.4% had abused alcohol.

Overall, 7.1% of 1995 cases had been homeless at diagnosis or at some point during their treatment; 3.2% of cases with known information about incarceration had been incarcerated at the time of diagnosis; and 3.5% of cases with known information about occupation had worked in the health care field or as correctional employees.

Mortality (*Table 9*)

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 1995, there were 94 deaths in New York City with tuberculosis listed as the underlying cause of death on the death certificate. The crude tuberculosis mortality rate for 1995 was 1.3 per 100,000. There were an additional 212 deaths for which tuberculosis was listed as a secondary cause. Of these deaths, 172 (81.1%) listed AIDS or HIV infection as the underlying cause of death.

Tuberculosis and HIV Infection (*Table 10*)

Since 1990, the Department of Health has collected information on the HIV-serostatus of individuals 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 10 presents the reported HIV-serostatus of individuals with active tuberculosis by age and sex. Since not all individuals 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-seropositive cases reported in this table is a minimum estimate of the actual proportion of tuberculosis cases who are HIV-infected.

In 1995, 63.5% of New York City tuberculosis cases had a known and reported HIV status. HIV status was more likely to be known for U.S.-born cases than for foreign-born cases: 70.2% of U.S.-born cases had a known HIV status vs. 55.0% of foreign-born cases.

Of 1995 tuberculosis cases, 32.8% were reported as HIV-seropositive, 30.8% were reported as HIV-seronegative, and 36.5% had an unreported and/or unknown HIV status. The total percentage of cases with unreported and/or unknown HIV status has decreased from 44.3% in 1994. In all but the youngest age groups, HIV status was more likely to be known for male cases than for female cases. Of the 1,556 male tuberculosis cases, 37.0% were reported as HIV-seropositive, 29.8% were reported as HIV-seronegative,

and 33.2% had an unknown HIV status. Of the 889 female tuberculosis cases, 25.4% were reported as HIV-seropositive, 32.4% were reported as HIV-seronegative, and 42.2% had an unknown HIV status. For both males and females, cases 35 to 44 years of age had the highest proportion of known and reported HIV infection (57.6% for males and 51.5% for females).

Directly Observed Therapy (DOT) and Completion of Therapy

(Table 11, Figures 10 - 11)

Of New York City's total 2,445 tuberculosis patients, 2,027 were diagnosed while alive and had the opportunity to receive some or all of their therapy as outpatients. Of these, 1,225 (60.4%) were on DOT for some or all of their care. Proportions receiving DOT were higher for those who were culture-positive (901 out of 1,372 patients, 65.7%) and for those who had pulmonary tuberculosis with positive respiratory smears (577 out of 770 patients, 74.9%). The proportion of patients with MDRTB who received DOT was 80.9% compared with 59.5% of patients with drug susceptible TB. Sixty-seven percent of U.S.-born patients received DOT compared with 52.5% of foreign-born patients.

The number of individuals on DOT as of December 31, 1995 decreased 5.6%, from 1,289 in 1994 to 1,217 in 1995, reflecting the declining prevalence of patients with active tuberculosis disease. Figure 11 shows the distribution of patients on DOT by type of provider as of December 31, 1995. Non-Department of Health facilities, which are funded by the New York State Department of Health, Medicaid, and Ryan White Care Act Funds, provided DOT to 481 (39.5%) of the 1,217 cases who were receiving DOT at that point. Department of Health Clinics and Outreach provided DOT to 268(22.0%) cases and 362 (29.7%) cases respectively.

The effectiveness of DOT and intensive case

Figure 10
Tuberculosis Cases on Directly Observed Therapy
New York City, 1978 - 1995

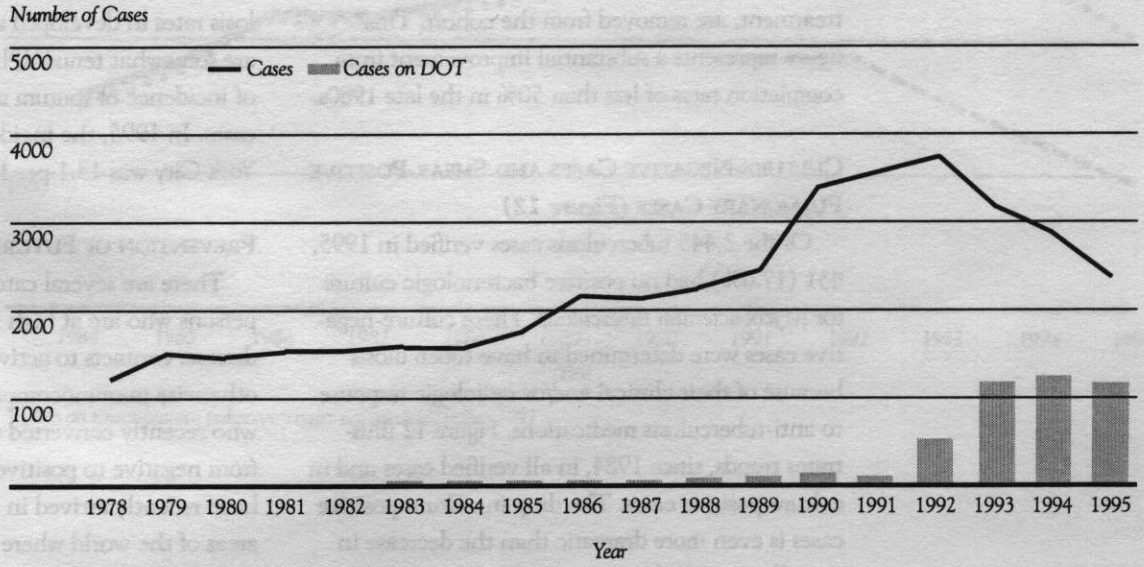
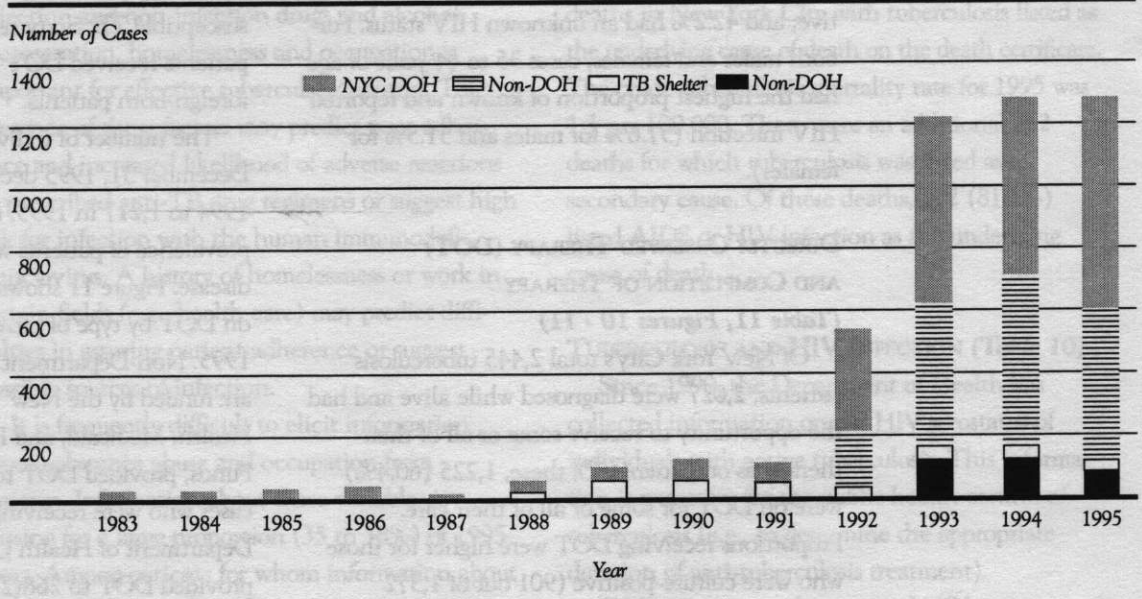


FIGURE 11
TUBERCULOSIS PATIENTS ON DIRECTLY OBSERVED THERAPY BY TYPE OF PROVIDER
NEW YORK CITY, 1983 - 1995



management in increasing completion of therapy is illustrated in Table 11. Of the cohort of patients diagnosed while alive in 1994 (2,847), 91.7% completed treatment. The completion index increases to 93.5% after patients with multidrug-resistant tuberculosis, who require prolonged treatment, are removed from the cohort. This figure represents a substantial improvement from completion rates of less than 50% in the late 1980s.

CULTURE-NEGATIVE CASES AND SMEAR-POSITIVE PULMONARY CASES *(Figure 12)*

Of the 2,445 tuberculosis cases verified in 1995, 431 (17.6%) had no positive bacteriologic culture for *Mycobacterium tuberculosis*. These culture-negative cases were determined to have tuberculosis because of their clinical and/or radiologic response to anti-tuberculosis medications. Figure 12 illustrates trends, since 1984, in all verified cases and in culture-positive cases. The drop in culture-positive cases is even more dramatic than the decrease in overall cases (41.5% since 1992).

Figure 12 also shows trends in the number of patients with tuberculosis disease at pulmonary or other respiratory sites and with positive sputum smears. In developing countries, where facilities to grow tuberculosis cultures are frequently lacking, tuberculosis is often diagnosed only through sputum microscopy. Comparisons between tuberculosis rates in developed and developing countries are somewhat tenuous, but are best made in terms of incidence of sputum smear positive pulmonary cases. In 1995, the incidence of such cases in New York City was 13.1 per 100,000.

PREVENTION OF FUTURE TUBERCULOSIS DISEASE

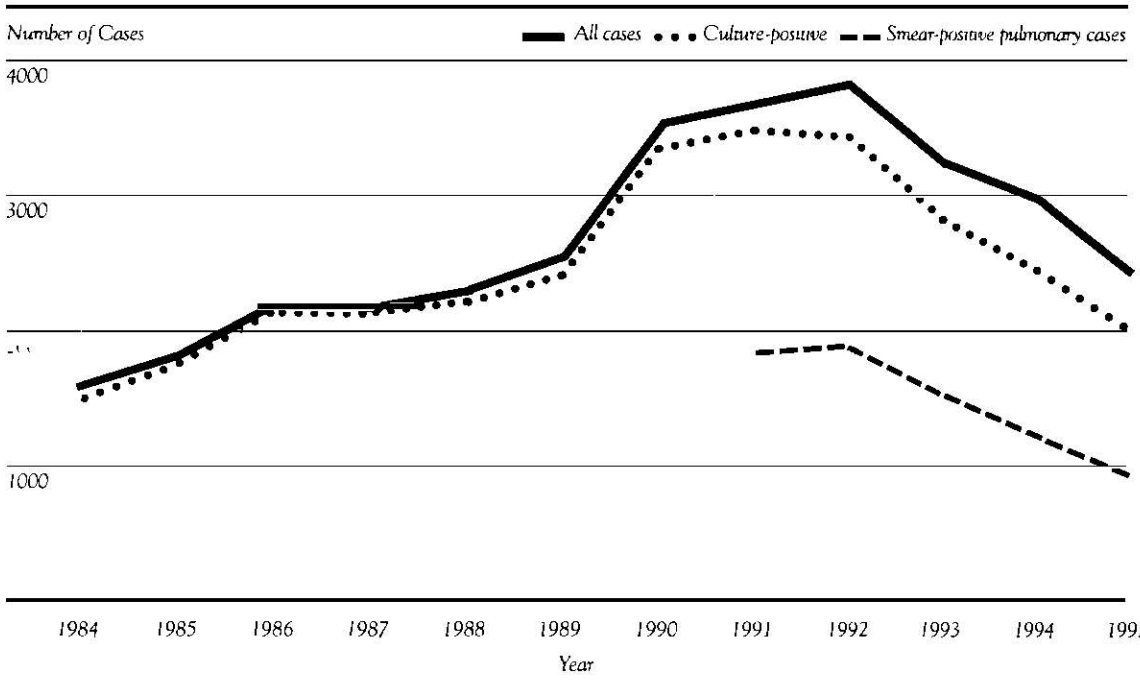
There are several categories of TB-infected persons who are at high risk for progression of disease: contacts to active cases, HIV-infected or otherwise immunocompromised persons, persons who recently converted their tuberculin skin test from negative to positive, and some persons who have recently arrived in the United States from areas of the world where tuberculosis remains endemic.

In 1995, the Bureau of TB Control expanded its

efforts to ensure that all contacts of patients with pulmonary or laryngeal disease and of all pediatric TB cases were evaluated, and that contacts found eligible for preventive therapy received it. In 1995, 9,379 contacts were elicited from 1,993 cases. Of the 9,379 contacts, 7,528 (80.3%) were evaluated. Of the 7,528 contacts who were evaluated, 2,459 (32.7%) were found to be infected, 2,288 (93.0%) of whom were without disease. As of April, 1996, 1,202 (52.5%) of the infected contacts without disease were started on preventive therapy. An additional 102 contacts not determined to be infected were started on 'window period' preventive therapy because they were evaluated during the first three months after exposure, too early to determine if transmission took place.

In 1995, more than 8,500 patients started preventive treatment for tuberculosis in New York City Department of Health Chest Clinics. Future annual summaries will report the number of patients who complete preventive therapy each year. Through continued emphasis on complete treatment of patients with active tuberculosis and with additional emphasis on preventive therapy, the New York City Department of Health, in cooperation with providers throughout New York City, hopes to continue to reduce the city's burden of tuberculosis.

FIGURE 12
TREND OF TUBERCULOSIS CASES
NEW YORK CITY, 1984 - 1995*



* *Data on smear-positive pulmonary cases not available before 1991*

TABLES

TABLE 1
TUBERCULOSIS INCIDENCE
NEW YORK CITY, 1920 - 1995

Year	Number*	Rate Per 100,000**	Culture-Positive Cases	Smear-Positive Pulmonary	Multidrug-Resistant Cases+
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	1,527		
1985	1,843	26.0	1,785		
1986	2,223	31.4	2,181		
1987	2,197	31.1	2,157		
1988	2,317	32.8	2,241		
1989	2,545	36.0	2,405		
1990	3,520	49.8	3,372		
1991	3,673	50.2	3,484	1,747	366
1992	3,811	52.0	3,442	1,791‡	441
1993	3,235	44.2	2,854	1,506	296
1994	2,995	40.9	2,479	1,242	176
1995	2,445	33.4	2,014	962	109

* For "phthisis," or pulmonary cases, 1920-1940; thereafter all forms of tuberculosis.
** Population based on census data for each decade.
\+ Drug susceptibility made mandatorily reportable during 1991; figure from that year is not complete. Number for 1995 is preliminary because drug susceptibility tests have not yet been performed and results reported on some patients' isolates.
++ 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.
‡ This information was estimated for 1992, exact figures not available.

TABLE 2
TUBERCULOSIS INCIDENCE (RATES PER 100,000) BY RACE/ETHNICITY AND AGE IN YEARS
NEW YORK CITY, 1995

	Age Group N (Rate)										
Race	*0-4*	*5-9*	*10-14*	*15-19*	*20-24*	*25-34*	*35-44*	*45-54*	*55-64*	*65+*	***Total***
White	4	2	1	3	8	39	54	46	32	97	**286**
	2.6	1.5	0.8	2.1	3.8	6.8	11.1	13.4	9.3	14.9	**9.0**
Black	32	15	7	25	43	218	372	196	105	88	**1101**
	21.0	10.5	4.8	17.1	28.0	65.5	136.4	98.4	73.7	55.2	**59.6**
Hispanic	38	8	14	28	54	160	184	114	49	49	**698**
	22.8	5.4	9.6	19.2	32.4	46.3	70.6	65.2	40.6	45.1	**39.1**
Asian	2	6	5	16	25	82	64	57	35	68	**360**
	5.3	18.3	15.1	43.1	56.9	68.3	67.2	101.0	92.5	198.4	**68.1**
Total	**76**	**31**	**27**	**72**	**130**	**499**	**674**	**413**	**221**	**302**	**2445**
	14.9	**6.8**	**6.0**	**15.3**	**22.5**	**36.4**	**60.4**	**53.4**	**34.3**	**31.7**	**33.4**

TABLE 3
TUBERCULOSIS INCIDENCE (RATES PER 100,000) IN MALES BY RACE/ETHNICITY AND AGE IN YEARS
NEW YORK CITY, 1995

	Age Group N (Rate)										
Race	*0-4*	*5-9*	*10-14*	*15-19*	*20-24*	*25-34*	*35-44*	*45-54*	*55-64*	*65+*	***Total***
White	3	2	0	1	5	29	44	34	24	49	**191**
	3.8	2.9	0.0	1.4	4.8	10.1	18.0	20.5	15.0	19.8	**12.8**
Black	17	9	5	8	17	115	265	149	71	43	**699**
	22.1	12.4	7.0	11.1	23.9	77.4	225.5	178.4	122.7	78.2	**84.6**
Hispanic	26	4	8	15	31	95	122	83	32	24	**440**
	30.7	5.3	10.8	20.2	37.1	56.8	101.3	104.6	61.6	60.8	**51.7**
Asian	1	1	3	9	16	45	43	39	19	50	**226**
	5.1	5.9	17.7	47.4	73.4	73.3	87.3	134.5	103.8	324.2	**84.4**
Total	**47**	**16**	**16**	**33**	**69**	**284**	**474**	**305**	**146**	**166**	**1556**
	18.1	**6.9**	**7.0**	**13.9**	**24.6**	**42.7**	**89.1**	**85.3**	**50.7**	**46.5**	**45.3**

TABLE 4
TUBERCULOSIS INCIDENCE (RATES PER 100,000) IN FEMALES BY RACE/ETHNICITY AND AGE IN YEARS
NEW YORK CITY, 1995

	Age Group *N* *(Rate)*										
Race	*0-4*	*5-9*	*10-14*	*15-19*	*20-24*	*25-34*	*35-44*	*45-54*	*55-64*	*65+*	***Total***
White	1	0	1	2	3	10	10	12	8	48	**95**
	1.3	0.0	1.6	2.9	2.8	3.5	4.1	6.7	4.4	11.9	**5.7**
Black	15	6	2	17	26	103	107	47	34	45	**402**
	19.9	8.5	2.7	22.9	31.5	56.0	69.0	40.7	40.2	43.1	**39.4**
Hispanic	12	4	6	13	23	65	62	31	17	25	**258**
	14.7	5.4	8.4	18.3	27.7	36.4	44.2	32.5	24.8	36.1	**27.6**
Asian	1	5	2	7	9	37	21	18	16	18	**134**
	5.5	31.7	12.3	38.6	40.6	63.0	45.7	65.6	81.9	95.5	**51.3**
Total	**29**	**15**	**11**	**39**	**61**	**215**	**200**	**108**	**75**	**136**	**889**
	11.6	**6.7**	**4.9**	**16.7**	**20.6**	**30.5**	**34.2**	**25.9**	**21.0**	**22.8**	**22.9**

TABLE 5
CRUDE AND AGE-ADJUSTED TUBERCULOSIS RATES
NEW YORK CITY, 1992, 1993, 1994, 1995

Borough	*Health District*	*Cases*	*Rate per 100,000 population*				
			1995 Crude+	*1995 Age-Adjusted**	*1994 Age-Adjusted**	*1993 Age-Adjusted**	*1992 Age-Adjusted**
Manhattan	Central Harlem	124	107.4	115.3	121.6	181.7	240.2
	East Harlem	76	59.7	60.3	71.5	73.1	95.8
	Kips Bay-Yorkville	33	14.0	10.9	14.8	14.4	19.1
	Lower East Side	132	55.1	51.3	74.8	69.5	101.5
	Lower West Side	103	35.0	29.9	45.9	44.8	77.9
	Riverside	74	35.4	32.0	41.1	59.0	72.1
	Washington Heights	94	35.3	36.6	49.1	52.9	60.9
	Total Manhattan	**636**	**42.8**				
Bronx	Fordham-Riverdale	59	24.1	24.5	34.6	27.5	37.8
	Morrisania	90	62.2	75.4	74.4	109.3	96.5
	Mott Haven	67	51.6	61.3	87.7	107.8	168.2
	Pelham Bay	30	13.8	13.3	21.1	20.1	20.3
	Tremont	91	47.8	56.7	88.5	76.0	105.8
	Westchester	69	25.1	26.0	19.8	34.0	35.8
	Total Bronx	**406**	**33.7**				
Brooklyn	Bay Ridge	50	21.0	20.2	18.6	20.1	15.9
	Bedford	149	64.0	68.4	82.3	89.1	107.5
	Brownsville	131	47.0	51.8	58.9	54.2	71.6
	Bushwick	96	52.6	61.1	72.8	83.3	83.1
	Flatbush	159	31.7	32.1	36.0	39.2	36.6
	Fort Greene	84	55.9	57.9	88.5	110.3	120.1
	Gravesend	57	20.1	20.2	23.6	21.9	20.4
	Red Hook-Gowanus	28	26.5	25.7	34.3	49.6	48.7
	Sunset Park	50	29.4	31.1	29.3	29.8	27.7
	W'burg-Gnpt.	43	27.6	30.3	45.6	52.2	59.3
	Total Brooklyn	**847**	**36.8**				
Queens	Astoria-L.I.C.	79	33.4	32.8	38.7	29.5	35.3
	Corona	134	46.0	45.3	39.5	44.5	56.3
	Flushing	95	20.8	19.9	18.4	17.3	14.6
	Jamaica East	95	28.2	28.7	35.9	33.7	34.0
	Jamaica West	84	23.3	23.5	26.2	25.2	21.5
	Maspeth-Forest Hills	30	11.1	10.6	20.4	18.5	12.3
	Total Queens	**517**	**26.5**				
Staten Island	Richmond	39	10.3	10.4	17.7	15.3	17.8
TOTAL NYC		**2445**	**33.4**	**40.9**	**40.9**	**44.2**	**52.0**

+1995 crude rates are based on the 1990 Census for New York City.
*1992 - 1995 age-adjusted rates are based on the New York City 1990 Census by the method of direct adjustment.

TABLE 6
TUBERCULOSIS CASES BY AGE IN YEARS AND AREA OF BIRTH
NEW YORK CITY, 1995

	Age Groups										
Area of Birth	*0–4*	*5-9*	*10–14*	*15-19*	*20–24*	*25–34*	*35–44*	*45–54*	*55-64*	*65+*	*Total*
Africa [1]	0	0	0	2	6	22	15	6	1	1	53
Asia [2]	0	1	1	6	8	38	25	28	20	52	179
Canada	0	0	0	0	0	0	0	0	0	1	1
Caribbean [3]	3	4	8	13	22	67	75	36	26	33	287
Central/S.America [4]	1	4	7	18	34	71	47	37	11	13	243
Europe [5]	1	1	0	1	2	8	13	9	6	33	74
Indo/Pakistan [6]	0	3	4	3	10	28	24	12	7	6	97
Middle East [7]	1	0	0	1	1	1	4	3	0	2	13
Oceana [8]	0	0	0	0	0	0	1	0	0	0	1
Southeast Asia [9]	0	1	0	3	7	13	10	12	7	9	62
Total Non USA	**6**	**14**	**20**	**47**	**90**	**248**	**214**	**143**	**78**	**150**	**1010**
USA*	69	17	6	25	35	231	414	216	116	134	1263
Puerto Rico	1	0	0	0	4	14	38	48	22	14	141
Total USA	**70**	**17**	**6**	**25**	**39**	**245**	**452**	**264**	**138**	**148**	**1404**
Unknown	**0**	**0**	**1**	**0**	**1**	**6**	**8**	**6**	**5**	**4**	**31**
Total	**76**	**31**	**27**	**72**	**130**	**499**	**674**	**413**	**221**	**302**	**2445**

* Includes the U.S. Virgin Islands (3)

[1] Senegal (11), The Gambia (6), Guinea (5), Nigeria (5), Ghana (4), Ivory Coast (4), Somalia (4), Other (14)
[2] China (120), Korea (38), Hong Kong (8), Taiwan (8), Japan (4), Other (1)
[3] Dominican Republic (124), Haiti (103), Jamaica (19), Cuba (14), Trinidad & Tobago (13), Barbados (6), Other (8)
[4] Ecuador (60), Mexico (53), Guyana (25), Honduras (22), Columbia (18), Peru (16), Guatemala (12), Panama (12), El Salvador (9), Bolivia (4), Brazil (4), Other (11)
[5] Russia (32), Poland (9), Italy (5), Spain (5), Yugoslavia (5), France (3), Germany (3), Other (12)
[6] India (39), Pakistan (28), Bangladesh (20), Afghanistan (6), Nepal (4)
[7] Yemen (5), Turkey (3), Israel (2), Iran (1), Jordan (1), Saudi Arabia (1)
[8] Australia (1)
[9] Philippines (35), Vietnam (12), Burma (6), Indonesia (6), Other (3)

TABLE 7
TUBERCULOSIS CASES BY PRIMARY SITE OF DISEASE
NEW YORK CITY, 1995

	Number of Cases	*(%)*
Pulmonary	1,939	(79.3)
Lymphatic	164	(6.7)
Pleural	101	(4.1)
Bone/Joint	89	(3.6)
Genitourinary	28	(1.1)
Meningeal	25	(1.0)
Miliary	16	(0.7)
Peritoneal	12	(0.5)
Other	71	(2.9)
Total	**2,445**	**(100.0)**
Both Pulmonary and Extrapulmonary	200	(8.2)

TABLE 8
SOCIAL CHARACTERISTICS OF TUBERCULOSIS CASES
NEW YORK CITY, 1995

Social Characteristic	*Number of total cases for whom information is available (%)*	*Number of cases with characteristic (% of cases for whom information is available)*
Injection drug use in 12 months before diagnosis	1,597 (65.3)	102 (6.4)
Non-injection drug use in 12 months before diagnosis	1,512 (61.8)	178 (11.8)
Alcohol abuse in 12 months before diagnosis	1,595 (65.2)	208 (13.0)
Homeless at diagnosis or any time during treatment	2,445 (100.0)	173 (7.1)
Resident of correctional facility at time of diagnosis	2,442 (99.9)	77 (3.2)
Resident of long-term care facility at time of diagnosis	1,586 (64.9)	39 (2.5)

TABLE 9
TUBERCULOSIS DEATHS AND RATE (PER 100,000)
NEW YORK CITY, 1910 - 1995

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
1992	199	2.7
1993	166	2.3
1994	129	1.8
1995	94	1.3

TABLE 10
HIV STATUS OF TUBERCULOSIS CASES BY SEX
NEW YORK CITY, 1995

Number (%)

	Females			*Males*			*Total*		
AGE	*HIV(+)*	*HIV(–)*	*NA**	*HIV(+)*	*HIV(–)*	*NA*	*HIV(+)*	*HIV(–)*	*NA*
0–4	1	6	22	0	11	36	1	17	58
	(3.4)	(20.7)	(75.9)	(0.0)	(23.4)	(76.6)	(1.3)	(22.4)	(76.3)
5–9	1	5	9	0	3	13	1	8	22
	(6.7)	(33.3)	(60.0)	(0.0)	(18.8)	(81.3)	(3.2)	(25.8)	(71.0)
10–14	0	3	8	0	5	11	0	8	19
	(0.0)	(27.3)	(72.7)	(0.0)	(31.3)	(68.8)	(0.0)	(29.6)	(70.4)
15–19	0	15	24	1	17	15	1	32	39
	(0.0)	(38.5)	(61.5)	(3.0)	(51.5)	(45.5)	(1.4)	(44.4)	(54.2)
20–24	6	33	22	7	41	21	13	74	43
	(9.8)	(54.1)	(36.1)	(10.1)	(59.4)	(30.4)	(10.0)	(56.9)	(33.1)
25–34	70	87	58	115	105	64	185	192	122
	(32.6)	(40.5)	(27.0)	(40.5)	(37.0)	(22.5)	(37.1)	(38.5)	(24.4)
35–44	103	54	43	273	101	100	376	155	143
	(51.5)	(27.0)	(21.5)	(57.6)	(21.3)	(21.1)	(55.8)	(23.0)	(21.2)
45–54	32	36	40	134	84	87	166	120	127
	(29.6)	(33.3)	(37.0)	(43.9)	(27.5)	(28.5)	(40.2)	(29.1)	(30.8)
55–64	10	22	43	34	54	58	44	76	101
	(13.3)	(29.3)	(57.3)	(23.3)	(37.0)	(39.7)	(19.9)	(34.4)	(45.7)
65+	3	27	106	11	43	112	14	70	218
	(2.2)	(19.9)	(77.9)	(6.6)	(25.9)	(67.5)	(4.6)	(23.2)	(72.2)
TOTAL	**226**	**288**	**375**	**575**	**464**	**517**	**801**	**752**	**892**
	(25.4)	**(32.4)**	**(42.2)**	**(37.0)**	**(29.8)**	**(33.2)**	**(32.8)**	**(30.8)**	**(36.5)**

* Not available

TABLE 11
COMPLETION INDEX FOR ACTIVE CASES
DIAGNOSED IN 1994

*N = 2,847**

Outcome	*Number of Cases*	*Percent*	*Completion Index***	*Completion Index Without MDR Cases*
Completed Therapy	2078	73.0	91.7	93.5
Died	489	17.2		
Prolonged Therapy	114	4.0		
Refused/Stopped Therapy	17	0.6		
Lost	57	2.0		
Moved+	92	3.2		

* Excludes patients found not to have TB and those who were reported at death.
** Completion Index = Number Completed/(Total Number – Number Moved – Number Died)
\+ Patients are categorized as moved only if their transfer to another jurisdiction is confirmed.

To order copies of the TB76 or laboratory/pathology report forms, please call or write:

Raymond McNeil
Bureau of TB Control
125 Worth St., Box 74
New York, NY 10013
(212) 788-4187

Rudolph W. Giuliani
Mayor
Margaret A. Hamburg, MD
Commissioner of Health