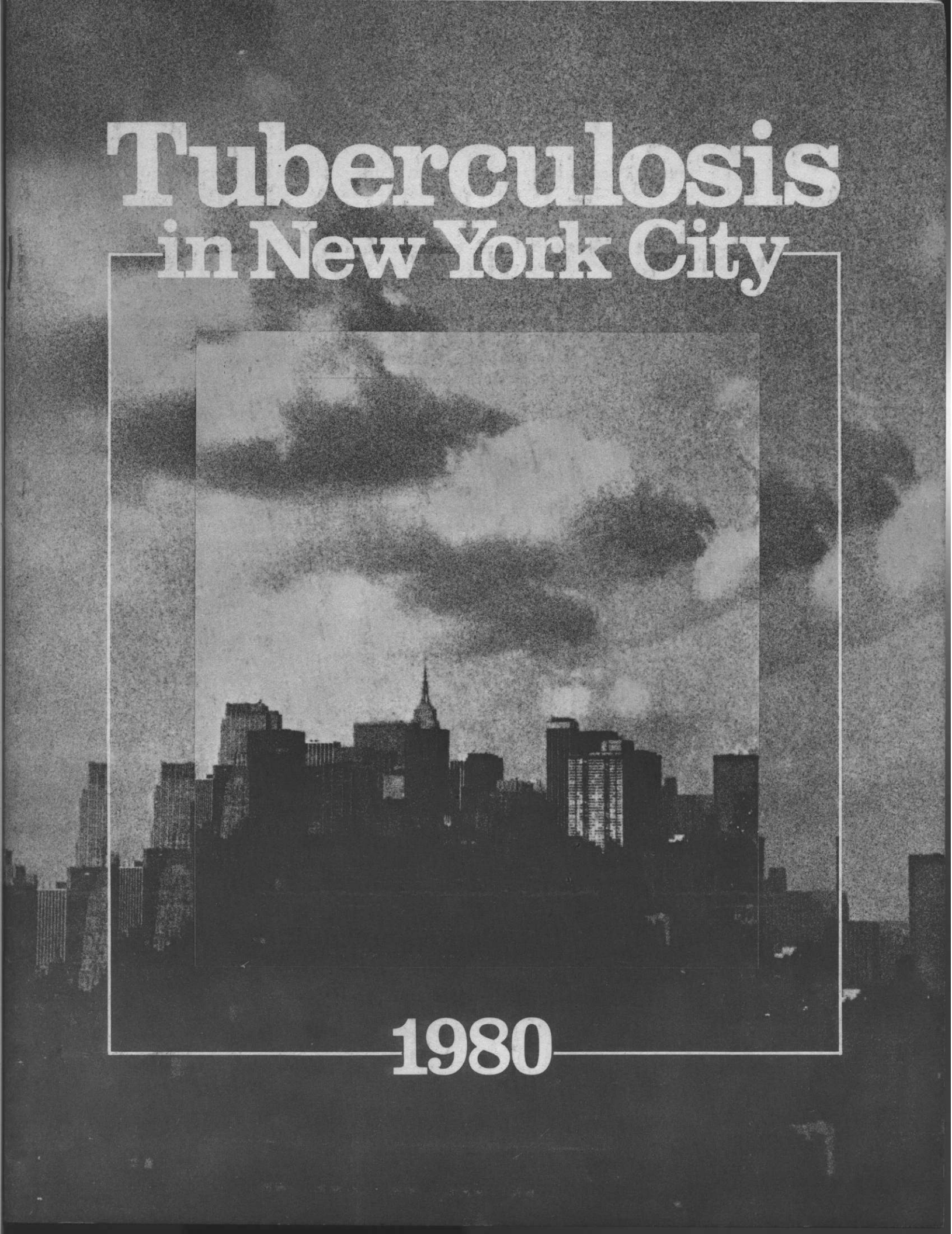
Tuberculosis in New York City



1980

The New York Lung Association is pleased to publish TUBERCULOSIS IN NEW YORK CITY 1980 as a community service.

The report was prepared by the Tuberculosis Division of the New York City Health Department which also collected the data it contains.

The recent resurgence of tuberculosis and in particular the incidence among the young population presents a threat to the health of New Yorkers. Despite this, there have been budget and personnel cutbacks, reduced state aid, and limited city funding resulting in a curtailed tuberculosis control program in New York City. These circumstances have led the New York Lung Association to renew its efforts to curb this communicable disease.

It is our hope that realistic, adequate action will be taken by those individuals and agencies who bear responsibility for the protection of the health of the public.

Edith Ewenstein, CAE
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Form—6A

The City of New York

DEPARTMENT OF HEALTH

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TO THE CITIZENS OF NEW YORK CITY

Much has appeared in the local and national press over the past year concerning tuberculosis in New York City. This report is designed to acquaint people with the present status of this disease.

The Arden House Conference held several years ago expressed the idea that tuberculosis might soon be eradicated. Eradication has unfortunately not occurred. The reader will note that although no increase in tuberculosis from 1979 to 1980 can be documented the total number of cases has practically remained the same. The lack of decrease in cases indicates that we are probably dealing with a reservoir of tuberculosis in New York City that will be with us for a long time to come. Each year new cases are added to this pool and it is particularly distressing to see that the disease is more frequently being diagnosed in the younger age groups. If tuberculosis were under control, practically no cases should be seen under the age of 20. Therefore, one can only conclude that transmission of bacilli is occurring at a rate at least equal or perhaps greater than the rate in previous years.

The Bureau of Tuberculosis has experienced many changes. Funding for tuberculosis has been scarce and it is very unlikely that any new funding will be forthcoming. Inadequate resources prevent us from increasing our field force. Field staff are essential to Tuberculosis Control because they carry out contact follow-up and return delinquent patients back to medical supervision. In addition, the Bureau has lost its Center for Disease Control assigned Public Health Advisors. The loss of the Center for Disease Control assignees has been particularly critical because these personnel provided training and supervision to our existent field staff.

The Bureau of Tuberculosis is pleased to present this report and hopes that it will contribute to a better understanding of the disease and the efforts required to control it.

The Bureau of Tuberculosis wishes to thank Mr. Ronald Burger for his tireless effort in compiling the statistics for this report and Mr. Jon Jensen for his illustrated work. The Bureau extends a special thank you to its staff who have all contributed to the accomplishments of this Bureau over the past years. Particular gratitude is extended to Greg Andrews, Glenn Acham, Ron Burger and Ken Bupp the Federal Public Health Advisors who had to leave us this year.

Alje Vennema M.D.

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AV:hk

TUBERCULOSIS IN NEW YORK CITY, 1980

A. Newly Reported Tuberculosis Cases (Table 2, Figure 1)

The number of newly reported tuberculosis cases for 1980 was 1,514. This was a decrease of only 16 cases compared to 1979. The case rate per 100,000 population was 19.9 in 1980, compared to 20.1 in 1979. Tuberculosis still presents a serious public health problem in New York City. The 1980 morbidity patterns the problems identified in 1979. Those problems continue to deal with treatment failures and with disease found among the younger age groups.

The nations's TB morbidity continues to decline as New York City's morbidity remains stable. Nationwide, TB is predominantly found in the older age groups whereas in New York City, TB is frequently being found in the younger age groups.

The reporting of newly diagnosed and suspected TB cases in 1980 by the medical care providers in New York City was improved, however, this Bureau must still maintain surveillance techniques to assure the reporting of all cases. Without appropriate case surveillance by the Bureau, many cases of TB will go unreported.

B. Tuberculosis Mortality (Table 2, Figure 1)

In 1980, 135 New York City residents died, with TB as either the primary or as one of the contributing causes of death. The death rate was 1.8 per 100,000 population and the rate has remained stable during the past years.

Tuberculosis as the primary cause of death was determined in 55 of the 135 related deaths (Table 1). The male to female ratio was 2 to 1. Whites number 22 (40%), Blacks, 31 (56%), and Asians, 2 (4%). These percentages compare closely to the sex and racial percentages of the newly reported cases for 1980. Sixty-seven percent of the deaths occurred in residents over age 54. One child under age five died of meningeal TB. There were no TB deaths among the ages from 5 to 19.

Table 1: DEATHS CAUSED PRIMARILY BY TUBERCULOSIS BY AGE, RACE, AND SEX, NEW YORK CITY, 1980

Age Groups	Total All Races	White		Black		Asian	
		M	F	M	F	M	F
0-4	1	0	0	1	0	0	0
5-9	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0
15-19	0	0	0	0	0	0	0
20-24	2	0	1	1	0	0	0
25-34	2	0	0	0	1	0	1
35-44	6	1	1	4	0	0	0
45-54	7	1	0	3	3	0	0
55-64	19	5	3	7	3	1	0
65+	18	9	1	5	3	0	0
TOTAL	55	16	6	21	10	1	1

Table 2: NEWLY REPORTED TUBERCULOSIS CASES AND RATES DEATHS AND RATES, NEW YORK CITY, 1960-1980

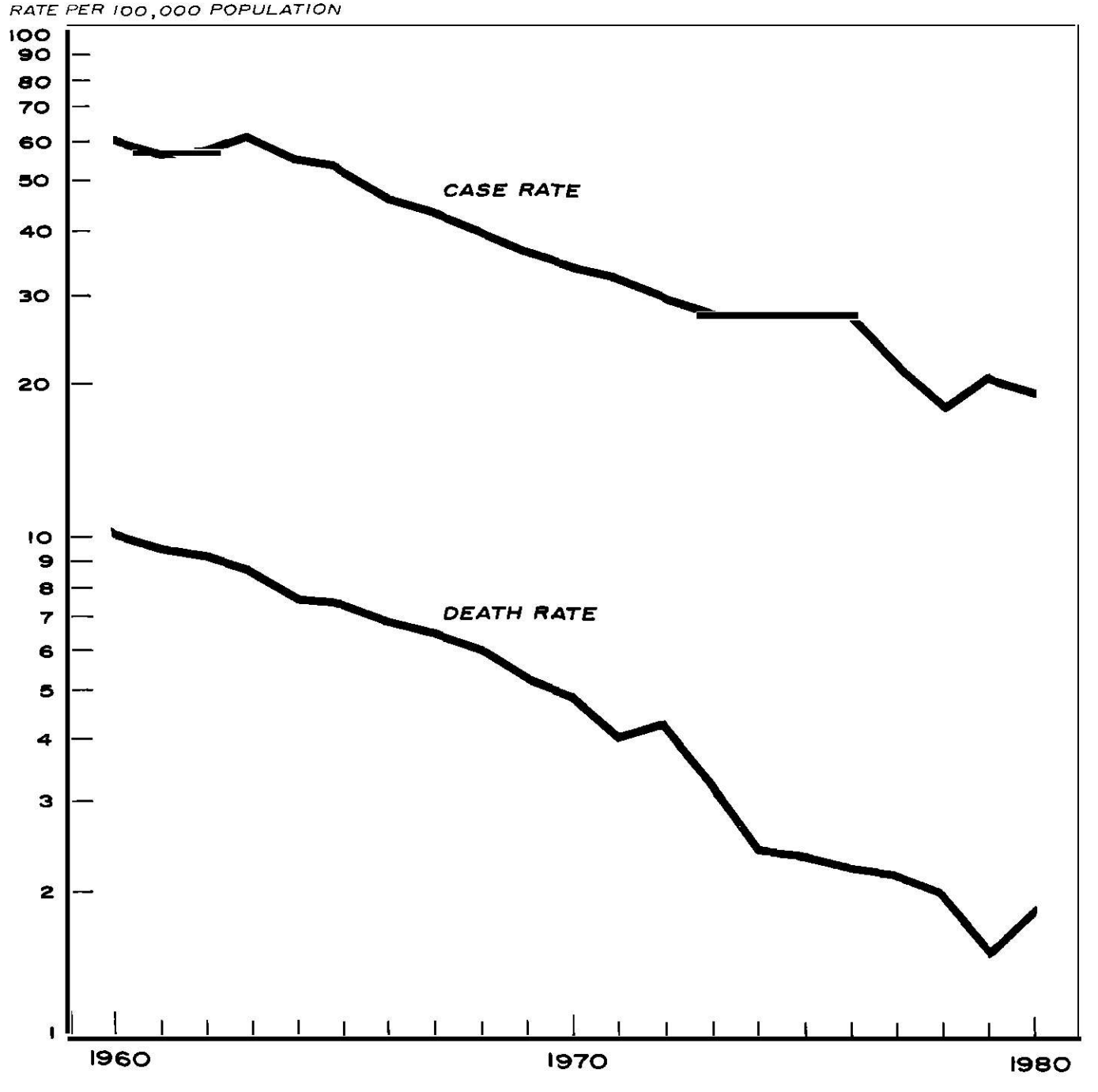
YEAR	TUBERCULOSIS CASES				TUBERCULOSIS DEATHS			
	NUMBER	RATE*	% CHANGE		NUMBER	RATE*	% CHANGE	
			NUMBER	RATE			NUMBER	RATE
1960	4,699	60.4	---	---	810	10.4	---	---
1961	4,360	56.0	-7.2	-7.3	738	9.5	-8.9	-8.7
1962	4,437	57.0	+1.8	-1.9	740	9.5	+0.3	0
1963	4,891	62.9	+10.2	+10.4	683	8.8	-7.7	-7.4
1964	4,207	53.7	-14.0	-14.6	581	7.4	-15.0	-15.9
1965	4,242	53.3	+0.8	-0.7	592	7.4	+1.9	0
1966	3,663	45.6	-13.6	-14.4	537	6.7	-9.3	-9.5
1967	3,542	43.6	-3.3	-4.4	525	6.5	-2.2	-3.0
1968	3,224	39.7	-9.0	-8.9	485	6.0	-7.6	-7.7
1969	2,951	36.4	-8.5	-8.3	418	5.2	-16.0	-13.3
1970	2,590	32.8	-12.2	-9.9	386	4.9	-7.7	-5.8
1971	2,572	32.6	-0.7	-0.6	310	3.9	-19.7	-20.4
1972	2,275	28.8	-11.5	-11.6	331	4.2	+6.8	+7.7
1973	2,101	26.6	-7.6	-7.6	262	3.3	-20.8	-27.3
1974	2,022	25.6	-3.8	-3.8	215	2.7	-17.9	-22.2
1975	2,151	27.2	+5.4	+6.3	208	2.6	-3.3	-3.8
1976	2,156	27.3	+0.2	+0.4	187	2.4	-10.1	-7.7
1977	1,605	21.1	-25.6	-23.1	175	2.3	-6.4	-4.2
1978	1,307	17.2	18.6	-18.5	168	2.2	-4.0	-4.3
1979	1,530	20.1	+17.1	+16.9	119	1.6	-29.2	-27.3
1980	1,514	19.9	-1.0	-1.0	135	1.8	+13.4	+12.3

* Per 100,000 Population

Note: Tuberculosis Deaths include both the primary and contributing cause.

Fig. 1

RATES of NEWLY REPORTED TUBERCULOSIS CASES and DEATHS NEW YORK CITY, 1960-1980



The number of cases of tuberculosis found at death by autopsy was 30 in 1980 (Table 3). Mycobacterium tuberculosis was identified by culture in 19 of the 30, and 11 were identified by positive histologic findings. All cases found at death were over age 24, and 47% over age 64. The sex and race percentages were similar to those for the newly reported 1980 cases.

Table 3: TUBERCULOSIS CASES FOUND AT TIME OF DEATH BY AGE, RACE, AND SEX, NEW YORK CITY, 1980

Age Groups	Total All Races	White		Black		Asian	
		M	F	M	F	M	F
0-4	0	0	0	0	0	0	0
5-9	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0
15-19	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0
25-34	3	0	0	1	1	0	1
35-44	4	1	1	2	0	0	0
45-54	3	0	0	1	2	0	0
55-64	6	3	1	1	1	0	0
65+	14	5	2	3	2	2	0
TOTAL	30	9	4	8	6	2	1

C. Newly Reported Tuberculosis Cases by Site of Disease and by Bacteriologic Status (Table 4; Figure 2)

In 1980 there were 1,284 pulmonary cases (85%) and 230 extrapulmonary cases (15%) reported. Pulmonary cases declined from 1979 by 39 cases (3%), but extrapulmonary cases increased from 1979 by 23 cases (11%). All of the extrapulmonary sites increased except the bone/joint, miliary, and other categories. A more than 50% increase was reported in pleural and meningeal TB.

Ninety-three percent of the pulmonary cases were positive on culture for M. tuberculosis. Three percent were diagnosed by positive histologic or smear results and the other four percent were diagnosed based upon a positive tuberculin test, radiological findings compatible with TB, clinical findings, and the decision was made to treat with at least two anti-tuberculous drugs. Eighty-five percent of the extrapulmonary cases were positive on culture for M. tuberculosis. Nine percent were diagnosed by positive histology or a positive smear result. Six percent were diagnosed on the basis of a positive tuberculin test, radiological findings, clinical findings, and the decision to treat with at least two anti-tuberculous drugs.

Table 4: NEWLY REPORTED TUBERCULOSIS CASES BY SITE OF DISEASE AND BY BACTERIOLOGIC STATUS, NEW YORK CITY, 1980

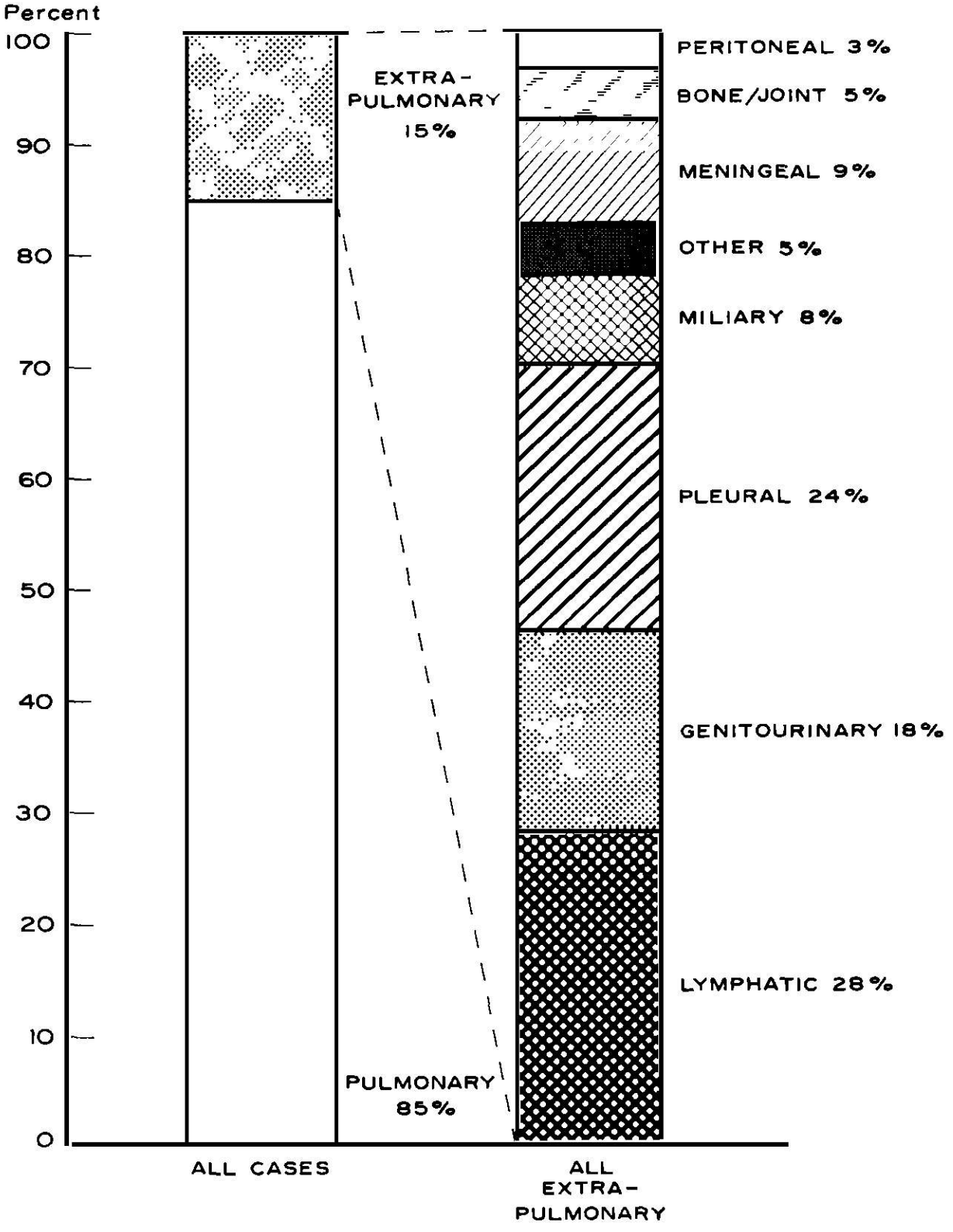
PREDOMINANT SITE	TOTAL CASES	BACTERIOLOGIC STATUS			
		POSITIVE		NEGATIVE (3)	NOT DONE
		CULTURE (1)	SMEAR ONLY (2)		
Pulmonary	1,284	1,199	37	23	25
Extrapulmonary	230	196	20	9	5
Pleural	55	43	8	4	0
Lymphatic	66	56	4	2	4
Bone/Joint	11	10	0	0	1
Genitourinary	41	39	2	0	0
Miliary	18	15	3	0	0
Meningeal	21	17	1	3	0
Peritoneal	7	6	1	0	0
Other	11	10	1	0	0
Total All Sites	1,514	1,395	57	32	30

(1) Positive culture with positive, negative, unknown or not done smear.

(2) Histology positive or smear positive and no culture.

(3) All cultures negative or smear negative and no culture.

NEWLY REPORTED TUBERCULOSIS CASES BY SITE of DISEASE NEW YORK CITY, 1980



D. Newly Reported Tuberculosis Cases by Age, Race, and Sex (Table 5)

1. Age

Although the number of newly reported TB cases declined by 16 in 1980, compared to 1979, there were increases in the number of cases in five of the ten age groups. Increases occurred in every age group under age 20. In 1979, there were 87 cases below age 20. In 1980, the number of cases below age 20 was 111, a 28% increase. This increase of cases under age 20 is the first such increase documented in New York City. Cases under age 20 accounted for 7% of the total 1980 morbidity compared to 6% in 1979. Twenty-four percent of the 1980 cases were between the ages of 20 and 34, compared to 23% in 1979. Forty-six percent of the 1980 cases were between the ages of 35 and 64 compared to 50% in 1979. Twenty-three percent of the 1980 cases were over the age of 64, compared to 21% in 1979.

The 1978 increasing trend for cases under the age of five continued. Over the past three years, children under age five reported with TB rose from 16 in 1977, to 37 in 1980. Tuberculosis found in the younger age groups indicates recent transmission of tubercle bacilli. Without rapid diagnosis and treatment, and with decreased capabilities for surveillance and containment, TB in the younger age groups will continue to present a problem.

2. Race (Table 6)

In 1980, Whites (persons having origins in any of the original peoples of Europe, North Africa, or the Middle East) accounted for 44% of the new morbidity and Non-Whites (persons having origins in any of the black racial groups of Africa and origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands) accounted for 56% of the total 1980 morbidity. Compared to 1979, there was a slight increase in Non-Whites and a slight decrease in Whites. In New York City, 77% of the population is White and 23% is Non-White. The case rate for Whites in 1980 was 11.4 per 100,000 population and 48.3 per 100,000 for Non-Whites.

Among the cases reported in the White racial group, Hispanics accounted for 35% of the total and increased from 226 cases in 1979, to 233 in 1980. Among the Hispanics with TB, Puerto Ricans accounted for 130 of the 233 cases, a 23 case decrease compared to 1979. There were only 2 Cuban refugees among the newly reported TB cases.

The Non-White racial group consists of Blacks and Asians. Blacks account for 86% of the group and increased from 701 in 1979, to 726 cases in 1980. Among the Blacks, there were 27 cases with Hispanic ethnicity, as compared to 18 cases in 1979. The remainder of the Non-White group consisted of Asians. There were 120 cases of TB among Asians reported in 1980, compared with 127 in 1979. Twelve of the 120 Asians reported in 1980 were Indochinese refugees diagnosed upon their arrival into New York City in 1980.

Table 5: NEWLY REPORTED TUBERCULOSIS CASES BY AGE, RACE, AND SEX NEW YORK CITY, 1980

AGE GROUPS	TOTAL ALL RACES	WHITE*		BLACK**		ASIAN	
		M	F	M	F	M	F
0-4 years	37	10	7	12	7	0	1
5-9 years	14	3	1	4	4	2	0
10-14 years	18	2	2	5	8	1	0
15-19 years	42	10	5	11	12	1	3
20-24 years	96	15	13	28	28	7	5
25-34 years	272	45	29	112	60	15	11
35-44 years	244	62	25	95	45	9	8
45-54 years	231	77	26	83	33	8	4
55-64 years	216	72	37	60	32	8	7
65+ years	344	149	78	48	39	17	13
TOTALS	1,514	445	223	458	268	68	52

* Includes White Hispanics.

** Includes Black Hispanics.

Table 6: NEWLY REPORTED TUBERCULOSIS CASES, WHITE vs. NON-WHITE RACIAL GROUPS, 1960-1980, NEW YORK CITY

YEAR	TOTAL CASES	WHITE*	NON-WHITE**
1960	4,699	2,896	1,803
1961	4,360	2,588	1,772
1962	4,437	2,578	1,859
1963	4,891	2,705	2,186
1964	4,207	2,283	1,924
1965	4,242	2,211	2,031
1966	3,663	1,853	1,810
1967	3,542	1,802	1,740
1968	3,224	1,614	1,610
1969	2,951	1,354	1,597
1970	2,590	1,130	1,460
1971	2,572	879	1,693
1972	2,275	925	1,350
1973	2,101	831	1,270
1974	2,022	843	1,179
1975	2,151	872	1,279
1976	2,156	840	1,316
1977	1,605	771	834
1978	1,307	641	666
1979	1,530	702	828
1980	1,514	668	846

* Persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.

** Persons having origins in any of the black racial groups of Africa and origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

3. Sex

Again in 1980 males outnumbered females 2 to 1. Below age 25, tuberculosis occurs with almost equal frequency between males and females. Beginning at age 25, however, the disparity in cases between males and females was true for all racial groups.

E. Newly reported Tuberculosis Cases with Disease Again (Reactivations) (Table 7)

Patients with tuberculosis will be cured provided they are on therapy and complete their recommended course of treatment of at least two or more anti-tuberculous drugs without interruption. However, if the regimen is not maintained, the patient will not be cured and may very well become infectious once again or even worse, may never become non-infectious.

New cases with TB again are defined as cases that were reported and counted in prior years having not been under TB medical supervision for 12 or more months. If it is verified that they did not receive treatment, they are counted again. Cases with TB again are an indicator of poor disease containment on the part of the control program. Drug continuity and completion indices (explained in Section III) are far below program goals, hence several patients are added to the reservoir of TB again. Patients with TB again add greatly to transmittors of tubercle bacilli.

In 1980, there were 135 cases with TB again, compared to 177 in 1979. One hundred twenty-seven (94%) were diagnosed with pulmonary TB and 6% involved an extrapulmonary site. The diagnosis for all TB again cases was based upon bacteriologic/histologic evidence of disease with 126 (93%) found to have M. tuberculosis on culture. All cases were over the age of 20. However, 40% of the cases were under the age of 45, compared to 25% in 1979. This is another indication of the increasing problem among the younger age groups. The percentages of these cases by race and sex were similar to the overall percentages of the newly reported cases in 1980.

The percentages of TB again cases residing in each county is about the same as the percentages by county of residence for all of the newly reported cases in 1980.

Fifty-nine percent of the TB again cases were first diagnosed and counted 5 or more years ago; sixteen percent were diagnosed the first time 3 to 4 years ago while 25% were first diagnosed and counted only 1 to 2 years ago. At the time of this writing, 10 (7%) of the cases with TB again have been lost to supervision and 19 (14%) have died. Tuberculosis was the cause of death in 9 of the 19 cases.

Table 7: NEWLY REPORTED TUBERCULOSIS CASES WITH DISEASE AGAIN (REACTIVATIONS) BY AGE, RACE, AND SEX
NEW YORK CITY, 1980

AGE GROUPS	TOTAL CASES	WHITE		BLACK		ASIAN	
		M	F	M	F	M	F
0-4 years	0	0	0	0	0	0	0
5-9 years	0	0	0	0	0	0	0
10-14 years	0	0	0	0	0	0	0
15-19 years	0	0	0	0	0	0	0
20-24 years	3	1	0	1	1	0	0
25-34 years	20	1	0	10	9	0	0
35-44 years	32	5	5	13	8	0	1
45-54 years	31	13	1	13	3	1	0
55-64 years	25	6	6	9	4	0	0
65+ years	24	12	6	3	2	1	0
Totals	135	38	18	49	27	2	1

Table 8: NEWLY REPORTED TUBERCULOSIS CASES WITH DISEASE AGAIN BY COUNTY OF RESIDENCE, NEW YORK CITY, 1980

COUNTY OF RESIDENCE	NUMBER OF TB AGAIN CASES	PERCENT OF TOTAL TB AGAIN CASES
NEW YORK	53	39%
KINGS	46	34%
QUEENS	17	13%
BRONX	17	13%
RICHMOND	2	1%
TOTAL NEW YORK CITY	135	100%

F. Newly Reported Tuberculosis Cases with Place of Birth Outside the United States

Of the newly reported cases 395 (26% of total morbidity) were born outside of the United States. Fifty-one of 395 foreign born cases arrived in the United States during 1979 or 1980.

COUNTY OF RESIDENCE OF FOREIGN BORN

County of Residence	# of Foreign Born Cases	Percent
New York	120	30%
Kings	132	33%
Queens	89	23%
Bronx	50	13%
Richmond	4	1%

CASES BY COUNTRY OF BIRTH

Country	# of Cases
China	40
Dominican Republic	12
Ecuador	11
Haiti	35
India	13
Italy	16
Korea	10
Phillipines	13
Puerto Rico*	81
Soviet Union	14
Viet Nam	16

*Although not a country, counted as foreign born.

Forty-four other countries were listed as the place of birth, each reported less than 10 new cases. Eighty-seven percent of the foreign born cases had been residing in New York City for more than 2 years and most were residents of the City for more than 15 years.

G. Geographic Distribution of Newly Reported Tuberculosis Cases and Deaths, New York City, 1980 (Tables 8, 9, 10, 11)

The number of newly reported tuberculosis cases ranged from a low of 18 (6.3 per 100,000) in Queen's Maspeth/Forest Hills health district to a high of 166 (69.7 per 100,000) in Manhattan's Lower East Side health district.

Table 9: NEWLY REPORTED TUBERCULOSIS CASES BY COUNTY AND HEALTH DISTRICT OF RESIDENCE, NEW YORK CITY, 1980, AND NEWLY REPORTED CASE RATES, 1978-1980

COUNTY	HEALTH DISTRICT	1980 CASES	1980 RATE*	1979 RATE*	1978 RATE*
New York		554	38.1	40.4	32.7
	Central Harlem	97	61.0	50.9	52.2
	East Harlem	34	25.6	26.3	14.2
	Kips Bay/Yorkville	27	11.9	11.5	12.3
	Lower East Side	166	69.7	79.0	45.8
	Lower West Side	105	42.5	47.8	36.0
	Riverside	62	29.1	34.3	31.5
	Washington Heights	63	26.6	27.9	33.8
Bronx		196	14.1	14.6	13.0
	Fordham/Riverdale	44	17.8	12.2	14.2
	Morrisania	32	15.2	19.0	19.0
	Mott Haven	29	17.0	18.7	12.9
	Pelham Bay	22	9.7	11.5	7.5
	Tremont	42	17.5	20.8	19.2
	Westchester	27	9.3	8.3	6.9
Kings		500	20.2	20.1	16.3
	Bay Ridge	23	8.7	9.5	5.3
	Bedford	86	33.5	33.9	30.4
	Brownsville	51	16.9	18.2	25.5
	Bushwick	52	25.2	25.2	15.5
	Flatbush	84	17.4	13.9	11.4
	Fort Greene	74	40.9	39.2	43.1
	Gravesend	42	13.4	14.7	5.7
	Red Hook/Gowanus	28	21.1	25.6	13.5
	Sunset Park	26	14.7	11.9	10.7
	Williamsburg/Grnpt	34	20.7	24.4	9.8
Queens		241	12.3	11.3	11.6
	Astoria/LIC	43	17.8	14.9	15.3
	Corona	47	18.4	14.1	20.4
	Flushing	50	10.4	8.5	5.6
	Jamaica East	52	15.7	18.1	15.4
	Jamaica West	31	8.4	6.7	8.9
	Maspeth/Forest Hills	18	6.3	8.7	9.8
Richmond	Richmond	23	7.0	6.1	5.8
Total	New York City	1,514	19.9	20.1	17.2

* Rate is per 100,000 population based on July, 1976 estimate.

Table 10: TUBERCULOSIS DEATHS AND DEATH RATES BY COUNTY AND HEALTH DISTRICT OF RESIDENCE, NEW YORK CITY, 1979 and 1980

County	Health District	1980		1979	
		*Deaths	Rate**	*Deaths	Rate**
New York		45	3.1	38	2.6
	Central Harlem	13	8.2	12	7.5
	East Harlem	5	3.6	3	2.2
	Kips Bay-Yorkville	3	1.3	0	0.0
	Lower East Side	3	1.3	5	2.1
	Lower West Side	8	3.2	4	1.6
	Riverside	9	4.2	6	2.8
	Washington Heights	4	1.7	8	3.4
Bronx		18	1.3	18	1.3
	Fordham-Riverdale	5	2.0	0	0.0
	Morrisania	7	3.3	2	0.9
	Mott Haven	1	0.6	5	2.9
	Pelham Bay	1	0.4	3	1.3
	Tremont	1	0.4	4	1.7
	Westchester	3	1.0	2	0.7
Kings		52	2.1	38	1.5
	Bay Ridge	3	1.1	0	0.0
	Bedford	8	3.3	4	1.6
	Brownsville	1	0.3	2	0.7
	Bushwick	13	6.3	2	1.0
	Flatbush	7	1.5	7	1.5
	Fort Greene	10	5.5	8	4.4
	Gravesend	3	1.0	4	1.3
	Red Hook-Gowanus	3	2.2	6	4.5
	Sunset Park	2	1.1	4	2.3
	Williamsburg-Greenpt	2	1.2	1	0.6
Queens		16	0.8	19	1.0
	Astoria-Long Is. City	2	0.8	2	0.8
	Corona	2	0.8	1	0.4
	Flushing	3	0.6	4	0.8
	Jamaica East	6	1.8	4	1.2
	Jamaica West	3	0.8	5	1.3
	Maspeth-Forest Hills	0	0.0	2	0.7
Richmond		4	1.2	1	0.3
	Richmond	4	1.2	1	0.3
New York City Total		135	1.8	119	1.6

* TB deaths include both primary and contributing cause of death.

** Rate per 100,000 population based on July, 1976 population.

Table 11: NEWLY REPORTED TUBERCULOSIS CASES BY AGE, RACE, AND SEX BY COUNTY OF RESIDENCE, NEW YORK CITY, 1980

NEW YORK COUNTY (Manhattan)

AGE GROUPS	TOTAL ALL RACES	WHITE		BLACK		ASIAN	
		M	F	M	F	M	F
0-4 years	3	2	0	1	0	0	0
5-9 years	5	1	0	2	2	0	0
10-14 years	7	1	0	3	2	1	0
15-19 years	10	2	2	1	3	0	2
20-24 years	18	4	2	8	2	1	1
25-34 years	99	22	7	46	13	7	4
35-44 years	94	31	13	34	14	1	1
45-54 years	98	46	4	31	11	5	1
55-64 years	96	39	11	25	13	4	4
65+ years	124	57	24	16	15	9	3
TOTAL	554	205	63	167	75	28	16

KINGS COUNTY (Brooklyn)

AGE GROUPS	TOTAL ALL RACES	WHITE		BLACK		ASIAN	
		M	F	M	F	M	F
0-4 years	21	5	2	8	5	0	1
5-9 years	7	1	0	2	2	2	0
10-14 years	6	0	0	1	5	0	0
15-19 years	16	3	0	7	4	1	1
20-24 years	40	5	5	15	15	0	0
25-34 years	100	10	10	46	29	1	4
35-44 years	83	12	2	42	22	3	2
45-54 years	62	12	7	28	11	2	2
55-64 years	55	13	10	22	9	1	0
65+ years	110	44	24	22	13	3	4
TOTAL	500	105	60	193	115	13	14

Table 11: NEWLY REPORTED TUBERCULOSIS CASES BY AGE, RACE, AND SEX BY COUNTY AND HEALTH DISTRICT OF RESIDENCE, NEW YORK CITY, 1980

QUEENS COUNTY

AGE GROUPS	TOTAL ALL RACES	WHITE		BLACK		ASIAN	
		M	F	M	F	M	F
0-4 years	6	2	2	2	0	0	0
5-9 years	2	1	1	0	0	0	0
10-14 years	1	0	1	0	0	0	0
15-19 years	9	3	2	2	2	0	0
20-24 years	25	4	3	2	8	6	2
25-34 years	38	9	6	9	7	4	3
35-44 years	33	8	5	8	4	5	3
45-54 years	31	6	9	10	4	1	1
55-64 years	38	15	9	3	5	3	3
65+ years	58	27	10	3	7	5	6
TOTAL	241	75	48	39	37	24	18

BRONX COUNTY

AGE GROUPS	TOTAL ALL RACES	WHITE		BLACK		ASIAN	
		M	F	M	F	M	F
0-4 years	7	1	3	1	2	0	0
5-9 years	0	0	0	0	0	0	0
10-14 years	4	1	1	1	1	0	0
15-19 years	6	2	0	1	3	0	0
20-24 years	13	2	3	3	3	0	2
25-34 years	32	4	5	11	10	2	0
35-44 years	27	7	4	10	4	0	2
45-54 years	37	11	6	13	7	0	0
55-64 years	26	5	7	10	4	0	0
65+ years	44	17	17	6	4	0	0
TOTAL	196	50	46	56	38	2	4

Table 11: NEWLY REPORTED TUBERCULOSIS CASES BY AGE, RACE, AND SEX BY COUNTY AND HEALTH DISTRICT, NEW YORK CITY, 1980

RICHMOND COUNTY

AGE GROUPS	TOTAL ALL RACES	WHITE		BLACK		ASIAN	
		M	F	M	F	M	F
0-4 years	0	0	0	0	0	0	0
5-9 years	0	0	0	0	0	0	0
10-14 years	0	0	0	0	0	0	0
15-19 years	1	0	1	0	0	0	0
20-24 years	0	0	0	0	0	0	0
25-34 years	3	0	1	0	1	0	0
35-44 years	7	4	1	1	1	1	0
45-54 years	3	2	0	1	0	0	0
55-64 years	1	0	0	0	1	0	0
65+ years	8	4	3	1	0	0	0
TOTAL	23	10	6	3	3	1	0

NEWLY REPORTED TUBERCULOSIS CASES BY AGE BY COUNTY OF RESIDENCE, NEW YORK CITY, 1980

AGE GROUPS	TOTAL	NEW YORK COUNTY	KINGS COUNTY	QUEENS COUNTY	BRONX COUNTY	RICHMOND COUNTY
0-4 years	37	3	21	6	7	0
5-9 years	14	5	7	2	0	0
10-14 years	18	7	6	1	4	0
15-19 years	42	10	16	9	6	1
20-24 years	96	18	40	25	13	0
25-34 years	272	99	100	38	32	3
35-44 years	244	94	83	33	27	7
45-54 years	231	98	62	31	37	3
55-64 years	216	96	55	38	26	1
65+ years	344	124	110	58	44	8
TOTAL	1,514	554	500	241	196	23

Five of Manhattan's (New York County) seven health districts had decreases in the number of newly reported TB cases compared to 1979. Manhattan had an overall decrease of 33 cases compared to 1979. However, Manhattan still had the greatest number of residents with newly diagnosed TB, 554 with a case rate of 38.1 per 100,000. The health district of Central Harlem experienced an increase compared to 1979, recording 16 additional cases. Six of the seven health districts in Manhattan had case rates greater than the overall New York City case rate of 19.9 per 100,000.

Brooklyn (Kings County) had the second greatest number of residents with newly diagnosed TB in 1980, 500 with a case rate of 20.2 per 100,000. The number of cases increased by 2 compared to 1979. Six of the 10 health districts had decreases in the number of new cases compared to 1979. One (Bushwick) remained the same. Increases compared to 1979 were experienced in the Flatbush (17 more), Fort Greene (3 more), and Sunset Park (5 more) health districts in Brooklyn. Five of the 10 health districts had case rates greater than the overall New York City rate.

Queens County increased from 223 cases in 1979, to 241 cases in 1980 Four of the 6 health districts had increases compared to 1979; however, all health districts had case rates below the overall New York City rate. Increases were experienced in Astoria/LIC (7 more), Corona (11 more), Flushing (9 more), and Jamaica West (6 more).

The Bronx went from 202 cases in 1979, to 196 in 1980. Only 2 of the 6 health districts had increases - Fordham/Riverdale (14 more) and Westchester (3 more). The case rates in all health districts were below the overall City's rate.

Richmond increased to 23 cases in 1980, from 20 in 1979. This slight increase raised the case rate to 7.0 per 100,000 which placed Richmond next to the lowest district by case rate.

Forty-five percent of the cases under age 20 resided in Brooklyn (Kings County) and 57% of the children under age 5 also resided in Brooklyn. The health districts with the most cases under age 20 in Brooklyn were Bedford (12), Flatbush (11), and Bushwick (9). Each health district in Brooklyn had 3 cases under the age of 5 except Williamsburg (2), Bay Ridge (1), Brownsville (1), Sunset Park (1), and Red Hook (1). Manhattan (New York County) had 23% of the total number of cases under age 20, Queens, 16%, the Bronx, 15% and Richmond, 1%.

Of the total number of White cases reported, 40% resided in Manhattan, 25% in Brooklyn, 18% in Queens, 14% in the Bronx, and 3% in Richmond. The greatest percentage of the Black cases resided in Brooklyn, 43%; Manhattan had 33%, the Bronx, 10%, Queens, 10%, and Richmond 1%. Thirty-seven percent of the Asians resided in Manhattan, 35% in Queens, 23% in Brooklyn, 4% in the Bronx, and 1% in Richmond.

In Manhattan, 72% of the cases were male while in Brooklyn, 62% Richmond, 61%, Queens, 57% and the Bronx, 55%.

2. TB Deaths

All health districts except Maspeth/Forest Hills in Queens had residents with tuberculosis as the primary contributing cause of death. The death rate has remained very stable through the years. The county with the greatest death rate was New York - 3.1 per 100,000 and the health district with the greatest death rate was Central Harlem - 8.2. Only 10 of the 30 health districts had death rates greater than the overall New York City death rate of 1.8.

H. Newly Reported Tuberculosis Cases by Source of Report, 1980 (Table 12)

In 1980, 58% of the newly reported tuberculosis cases were diagnosed and reported by the private sector which is defined as those hospitals, physicians, and clinics that are not part of the Department of Health or the Health and Hospitals Corporation (public sector). Prior to 1978, the public sector had always diagnosed and reported more cases than the private sector. The private sector is now not only identifying more cases, but also treating and supervising increasingly more cases of TB.

New York County reporting sources accounted for 46% of the 1980 morbidity. Kings County sources reported 32%, Queens 10%, the Bronx 10%, and Richmond, 2%. Twenty percent of the cases reported by New York County sources resided in one of the other counties within New York.

Since a greater proportion of the City's residents seek medical care in the private sector of medicine, the Bureau of Tuberculosis must have the utmost cooperation of those medical care providers if the control program is going to be able to evaluate the TB problem and contain and control the spread of TB in New York City.

Tuberculosis in Refugees: It has been alluded that tuberculosis is the most serious public health problem of refugees. The data on refugees from Indochina, Russia and other countries are conflicting. Some areas in the United States of America report high percentages for infection and disease amongst refugees. New York City's Bureau of Tuberculosis participates in the screening of all newcomers. Two clinics are held each week for the screening of patients who have been classified as Class A or B prior to coming to the United States. Class A refugees are those considered active or suspected to be active. A Class A refugee may enter the United States after 2 negative sputum smears. Class B are those considered non-infectious for travel purposes. In 1980, 170 Class A and 210 Class B refugees arrived In New York City. Amongst all these Class A and Class B refugees only 6 cases of tuberculosis were identified.

Table 12 NEWLY REPORTED TUBERCULOSIS CASES BY SOURCE OF REPORT BY COUNTY, NEW YORK CITY, 1980

SOURCE OF REPORT	NEW YORK CITY TOTALS		NEW YORK		KINGS		QUEENS		BRONX		RICHMOND	
	CASES	%	CASES	%	CASES	%	CASES	%	CASES	%	CASES	%
DEPARTMENT OF HEALTH CHEST CLINICS	59	4%	7	2%	31	7%	16	10%	5	3%	0	0%
MUNICIPAL HOSPITALS	571	38%	267	39%	191	40%	63	42%	50	32%	0	0%
VOLUNTARY* HOSPITALS	791	52%	388	56%	235	50%	58	39%	93	60%	17	85%
PRIVATE PHYSICIANS	51	3%	17	2%	11	2%	13	9%	7	5%	3	15%
OTHERS**	42	3%	12	1%	4	1%	0	0%	0	0%	0	0%
TOTALS	1,514	100%	691	100%	472	100%	150	100%	155	100%	20	100%

* Includes private, voluntary, and federal hospital facilities.

** Includes 26 cases reported by sources outside of New York City.

Primary Drug Resistance: Primary drug resistance is a subject of great importance. Table 13 illustrates the percentage obtained from 297 randomly selected cultures in 1980. At this moment 281 sensitivity patterns are known, 16 cultures are still pending. Primary drug resistance for all drugs combined in New York City for 1980 was 7.5%. The nationwide resistance rate from selected centers shows a mean of 6.9% and a range of 3.7% to 14.4%. Primary resistance to INH is the most important at 4.9%. Equally important is primary resistance to streptomycin 4.9%. Next is resistance to PAS 1.5% and ethambutol 1.5%. Resistance to rifampin for New York City is 0.8%. The rates for rifampin, ethambutol and other drugs listed in the table remain less than 1%. The rate for cultures obtained from Asians and Hispanics show greater resistance. The rates for Asians is approximate 15% and for Hispanics is approximately 10%. The national rates for Asians and Hispanics are both 12%. The latter rates are significantly higher than the rates for whites and blacks in this city which are 5% for both groups. The Bureau does not advocate sensitivity testing as the start of treatment. Sensitivity testing should only then be done when the patient does not convert his or her sputum after 3 months. Care should be exercised in reviewing patients' histories that they did not acquire primary resistance from their source case. In the latter instance sensitivity studies are advocated from the beginning of treatment.

Table 13: Percentage of Primary Resistance

Drugs Resistant to:	New York City		U.S.A. Percent
	Number	Percent	
Isoniazid	13	4.9	4.1
Rifampin	2	0.8	0.2
Ethambutol	0	0.0	0.3
Streptomycin	13	4.9	3.8
PAS	4	1.5	0.8
Ethionamide	4	1.5	0.8
Kanamycin	0	0.0	0.1
Capreomycin	1	0.4	0.1
Cycloserine	0	0.0	0.1

Supervised Therapy Program (Pilot Project): Every Tuberculosis Control Program has a percentage of non-compliant patients. If this patient population cannot be successfully treated, they will form a reservoir and contribute to the transmission of bacilli. If non-treatment of this population is unacceptable and voluntary outpatient care does not work there are but two choices left: institutional care, or directly administered supervised therapy. While holding a patient in an institution provides good control it is unacceptable from both a humane and cost effectiveness point of view.

In order to prove that the other alternative i.e. directly administered therapy through daily or intermittent supervision can effectively decrease the non-compliant patient problem, the New York City TB Program in cooperation with CDC instituted a pilot program in September of 1980. The objective of this program is to identify, locate and enroll TB patients that have a history of non-cooperation with previous treatment programs or have a documented potential for non-compliance. The patients in the project are assigned to specific case workers whose responsibility it is to insure that the patient receives and takes his/her medication as prescribed. Pill taking is witnessed and documented. Bacteriologic specimens as well as physical evaluations on all patients are performed by Bureau of TB clinicians in the field. All activities regarding project patients are documented in comprehensive files and thorough case surveillance is maintained.

The project utilizing three outreach workers has a patient population under current supervision of 60 patients. The most recent analysis of the program shows that of the 68 patients enrolled to date: two have been lost, five have returned to treatment at an outpatient clinic, four have been rehospitalized because of acute illness and sixty are current and continuous for drug therapy.

This project which has its one year anniversary on September 15, 1981 has an additional 12 months of funding beyond this date. It is expected that another 50 patients will be added before closing out the first year. If this approach to treating non-compliant patients becomes a documented success, its continuation beyond the contract period is highly advisable.

New York City Prevalence of Infection Amongst School Children

In view of the sharp increase in the number of tuberculosis cases in New York City in the last few years and in light of the fact that the number of children developing tuberculosis has been on the increase, the Bureau of Tuberculosis felt an urgent need to conduct a systematic randomized tuberculin survey to determine the prevalence of infection as well as the risk of infection in the school age population. In the spring of 1980 selected classes of kindergarten, elementary and junior high school children in New York City were tested.

In order for the survey to be meaningful an original sample size of 60,000 children with an anticipated yield of 23,000 was estimated to be required. This relatively high figure was arrived at after taking into consideration the size of the school age population and that a large percentage of the sample probably would not consent to the test or would not show up for the reading after the test was administered. Preliminary results from the survey revealed that the initial estimates fell far short of the anticipated outcome, hence the sample size had to be revised upward while the expected yield was revised downward. The sample size was increased to 90,000 children in order to obtain a yield of 15,000 skin tests.

In order to minimize bias and to encompass all ethnic groups throughout New York City four schools from each of the City's 30 health districts were selected. This selection consisted of 3 public schools and one parochial school from each district. A total of 120 schools with grades from kindergarten through junior high school would be tested in 1980 and 1981.

The Bureau received training assistance from the International Tuberculosis Surveillance Center (I.U.A.T.), The Hague, Netherlands. The survey was divided into 3 time phases. The first phase began in March 1980 and ended in June 1980. During this time approximately 6,000 students were tested in 30 parochial and 24 public schools. The second phase which began in October 1980 tested approximately 5,600 students from 36 public schools. The third phase which began in March 1981 is currently in progress and nearing completion.

Provisional data from the first and second phase of the survey reveal that out of 11,596 tests performed 11,170 (93.6%) were read as negative and 426 (3.7%) were read as positive with 10 mm or greater of induration. Students with a history of BCG and a subsequent induration of 18 mm or less were excluded from the positive findings.

Table 14 indicates that the rate for each age group is considerably higher than the national average of those in most western countries. If these figures hold out to be true after closer scrutiny of the data, periodic selective screening of New York City school children may be required.

Table 14: P.P.D. Results of a Randomized Sample of School Children, New York City, 1980

Age	Total Number Tested and Read	Indurations Number	10 mm %
5	285	6	2.1
6	854	17	2.0
7	1,247	27	2.16
8	1,352	30	2.22
9	1,447	57	3.94
10	1,571	49	3.12
11	1,563	68	4.35
12	1,328	59	4.44
13	1,089	62	5.69
14	683	39	5.71
15	177	12	6.78
TOTAL	11,596	426	3.67

Section II. PREVALENCE OF TUBERCULOSIS DISEASE, NEW YORK CITY, DECEMBER 31, 1980 (Table 15)

A. The prevalence of tuberculosis disease patients under supervision as of December 31, 1980, was 2,686, of these 2,432 were under ambulatory supervision.

During 1980, 1,815 patients were added to the disease prevalence under supervision and 1,831 patients were closed to supervision. Of the patients removed from the Case Register, 60% had completed supervision, 21% were lost to supervision, 12% had died, and 7% had moved to another jurisdiction.

Patients under supervision at home are medically supervised by either the public sector (Health Department or Municipal Hospital clinic) or the private sector (voluntary or federal hospital clinic, or private physician). As of December 31, 1980, of the 2,432 patients that were under supervision, the Health Department clinics supervised 17% and the municipal hospitals 44%;hence the public sector supervised 61% of the total disease prevalence. There was a 7% decrease in the public sector supervision compared to December 31, 1979. The private sector in 1979 provided care for 32% of the diseased prevalence compared to 32% in 1980.

Although the private sector diagnosed and reported 58% of the 1980 morbidity, it is providing medical supervison to 39% of the diseased prevalence. Many cases diagnosed by the private sector are supervised by the public sector because patients who cannot pay for their medical care are transferred to the public facilities or because they failed to keep out-patient follow-up appointments and were returned to supervision at a public facility by Bureau field staff. This accounts for the Health Department clinics reporting 4% of the new morbidity, but supervising 17% of the prevalence and the municipal hospitals reporting 38% of the new morbidity and supervising 44% of the prevalence of disease.

Only 60% of the total disease prevalence under supervision were seen by their medical supervisor for medical evaluation and chemotherapy during the period October 1, 1980, through December 31, 1980. The 897 patients recommended for treatment with two or more anti-TB drugs that were not taking their drugs during that period of time, the 71 patients that were on no TB drugs, and the 379 patients that were lost to supervision during 1980, add up to 1,347 TB patients that were not under treatment. These patients are now candidates for "reactivation," transmission of tubercle bacilli, and for developing drug resistance.

Of the 2,250 patients recommended for two or more anti-TB drugs, only 51% had their bacteriological status evaluated during the report period; 548 patients that should have been bacteriologically evaluated were sputum positive prior to October 1, 1980. Because they were not evaluated the Bureau does not know their infectiousness.

Table 15: TUBERCULOSIS PROGRAM MANAGEMENT REPORT - CASE REGISTER

TUBERCULOUS DISEASE PREVALENCE, NEW YORK CITY

January 1, 1980, to December 31, 1980

A. Patients Under Supervision at Start of Period..... 2,702

B. Patients Added During Period 1,815

C. Patients Closed to Supervision During Period 1,831

1. Supervision Completed 1,104
2. Moved Out of Jurisdiction 136
3. Lost to Supervision 379
4. Died 212

D. Patients Under Supervision at End of Period 2,686

1. Patients in a general hospital (inpatient) 254
2. Patients at home (ambulatory care) 2,432

STATUS OF PATIENT AT HOME AS OF DECEMBER 31, 1980 (same as D - 2)

	TOTAL CASES	TWO or MORE TB DRUGS	ONE TB DRUG	NO TB DRUGS
CHEMOTHERAPY				
Recommended	2,432	2,250 (i)	111	71
On Drugs	1,420	1,353 (ii)	67	0
Not on Drugs	1,012	897	44	71
BACTERIOLOGY				
Positive within past 3 months	145	141 (iii)	0	4
Negative within past 3 months	455	427 (iv)	28	0
Not Recommended	1,181	1,134 (v)	47	0
Recommended, but not done	651	548	36	67

Chemotherapy Index $\frac{(ii)}{(i)} \times 100 = 60\%$

Bacteriology Index $\frac{(iii) + (iv)}{(i) - (v)} = 51\%$

Section III: CONTROL OF TUBERCULOSIS

A. Introduction

Control of tuberculosis is defined as those mandated activities which involve the protection of public health. The responsible agent for meeting public health obligations is the Bureau of Tuberculosis. These responsibilities concern personal health through the elimination of death, disability, illness, emotional trauma, family disruption, and social stigma. The responsibilities concern public health by the interruption of and prevention of transmission of the tubercle bacilli to the members of the population. The program's ultimate goal is to eliminate tuberculosis as a personal and public health problem. Existing prevalence and an increasing morbidity trend indicate that tuberculosis is a disease of significant volume and consequence in New York City.

B. New York City TB Control Program General Responsibilities

1. To ensure that all cases of tuberculosis that are suspected or diagnosed in New York City's medical facilities are reported to the Bureau of Tuberculosis; to take measures to ensure that such reporting is done in a timely and thorough manner; and to take corrective action when less than required results occur.

2. To ensure that epidemiologic follow-up is performed on all reported cases of infectious tuberculosis, i.e. contacts to such cases are identified and brought to examination and treatment.

3. To ensure that diseased patients are on effective treatment; to monitor the care of such patients; and to take corrective action to return delinquent/non-compliant patients to medical supervision and treatment.

4. To develop and disseminate Departmental policies, procedures, and guidelines for the proper management and treatment of tuberculosis.

5. To maintain documents and records, compile data, and information for the purpose of analyzing and assessing the scope and magnitude of the TB problem in New York City.

C. Basic TB Objectives

In order for tuberculosis to be controlled, the following must occur:

1. Persons with disease able to infect others must be rendered noninfectious.

2. Persons with disease who are not able to infect others must remain noninfectious.

D. Methodology to Achieve Basic Objectives

1. All TB cases and suspected cases must receive a rapid diagnosis and more importantly, be placed on an effective TB drug regimen.

2. All TB cases must be continuous in taking drugs and complete the prescribed course of treatment.

3. All TB cases with positive sputum must convert to negative in the shortest possible time.

4. Contacts to infectious tuberculosis must be rapidly identified and brought to examination and treatment.

5. Persons on preventive treatment must be continuous in taking their drug and complete the prescribed course.

E. Performance Indicators

1. Continuity and Completion of Drug Therapy

Cases of tuberculosis started on chemotherapy are evaluated for their continuity of drug therapy during the initial 12 months of treatment and for completion of their prescribed course of drug therapy. Cases are evaluated on a quarterly basis using cohorts of cases reported January-March, April-June, July-September, and October-December of the incidence year.

A high level of achievement in this indicator assures the Bureau that infectious cases will become non-infectious and that non-infectious cases will not become infectious. Provided the case has been recommended to be treated with effective anti-TB drugs and takes the drugs with minimal interruption to completion of the prescribed course, the patient will become non-infectious within a short period of time and will be cured.

The Bureau's optimal objective is to have at least 95% of the cases started on drugs maintain continuity without interruption for 12 consecutive months and have 90% complete the prescribed course of therapy. Table 16 presents the current results of this performance indicator.

Table 16: Twelve Month Continuity of Drug Therapy Percentages for Cases Reported January-March, 1977, to January-March, 1979; and Completion of Drug Therapy Percentages for Cases Reported January-March, 1977, to January-March, 1980, New York City

Cohorts of Cases	% of Cases Continuous on Therapy for 12 Months	% of Cases Completing Therapy
Jan-Mar, 1977	59	48
Apr-Jun, 1977	59	66
Jul-Sep, 1977	58	52
Oct-Dec, 1977	52	64
Jan-Mar, 1978	42	45
Apr-Jun, 1978	78	61
Jul-Sep, 1978	58	46
Oct-Dec, 1978	50	56
Jan-Mar, 1979	57	63
Apr-Jun, 1979	58	
Jul-Sep, 1979	58	
Oct-Dec, 1979	52	
Jan-Mar, 1980	68	

Table 16 indicates that there are still several problems with tuberculosis control. A continuity of drug therapy of 68% is still below the desired percentage of 95%. The same is true for the completion of treatment percentages. There are many reasons for these poor performance percentages. Patients are not aware of their disease nor the seriousness of the disease, patients are not seen every month , or they refuse to come or forget to keep their appointments. In some instances they refuse to take therapy.

2. Bacteriologic Conversion of Sputum

Cases of tuberculosis reported with positive sputum culture are evaluated for conversion of their culture to negative after three months and after six months of supervision and treatment. The cases are evaluated on a quarterly basis using the same cohorts as for the drug continuity and completion of therapy report. This is a companion performance indicator to the drug continuity in that it enables the Bureau to measure the success of rendering the infectious persons non-infectious. Provided the person has been recommended to be treated with effective anti-TB drugs and provided the person is managed properly in order to maintain continuity of his drug ingestion to completion, 75% of the cases reported with positive sputum culture can be expected to convert to negative within 3 months, and 95% within 6 months. Table 17 presents the current results of this performance indicator.

Table 17: Conversion of Positive Sputum Culture Cases of TB at Three and Six Months for Cases Reported January-March, 1978, to July-September, 1980 in Percent, New York City.

Cohort of Cases	% of Cases Converting Sputum Culture to Negative	
	Within 3 Months	Within 6 Months
Jan-Mar, 1978	30	42
Apr-Jun, 1978	33	54
Jul-Sep, 1978	32	48
Oct-Dec, 1978	34	54
Jan-Mar, 1979	32	41
Apr-Jun, 1979	35	44
Jul-Sep, 1979	41	51
Oct-Dec, 1979	41	53
Jan-Mar, 1980	26	41
Apr-Jun, 1980	28	41
Jul-Sep, 1980	22	49

The low percentages documented for this performance indicator demonstrate similar problems as those stated for drug continuity and completion of treatment. Other factors that contribute to sub-standard achievement include the failure of supervising facilities to obtain follow-up sputa on patients because the patient is clinically and radiologically improved and/or the fact that the patient may not be able to produce subsequent sputum. A less frequent but more severe problem is medical mismanagement such as prescribing ineffective drug regimens which not only prevent conversion, but also cause drug resistance problems.

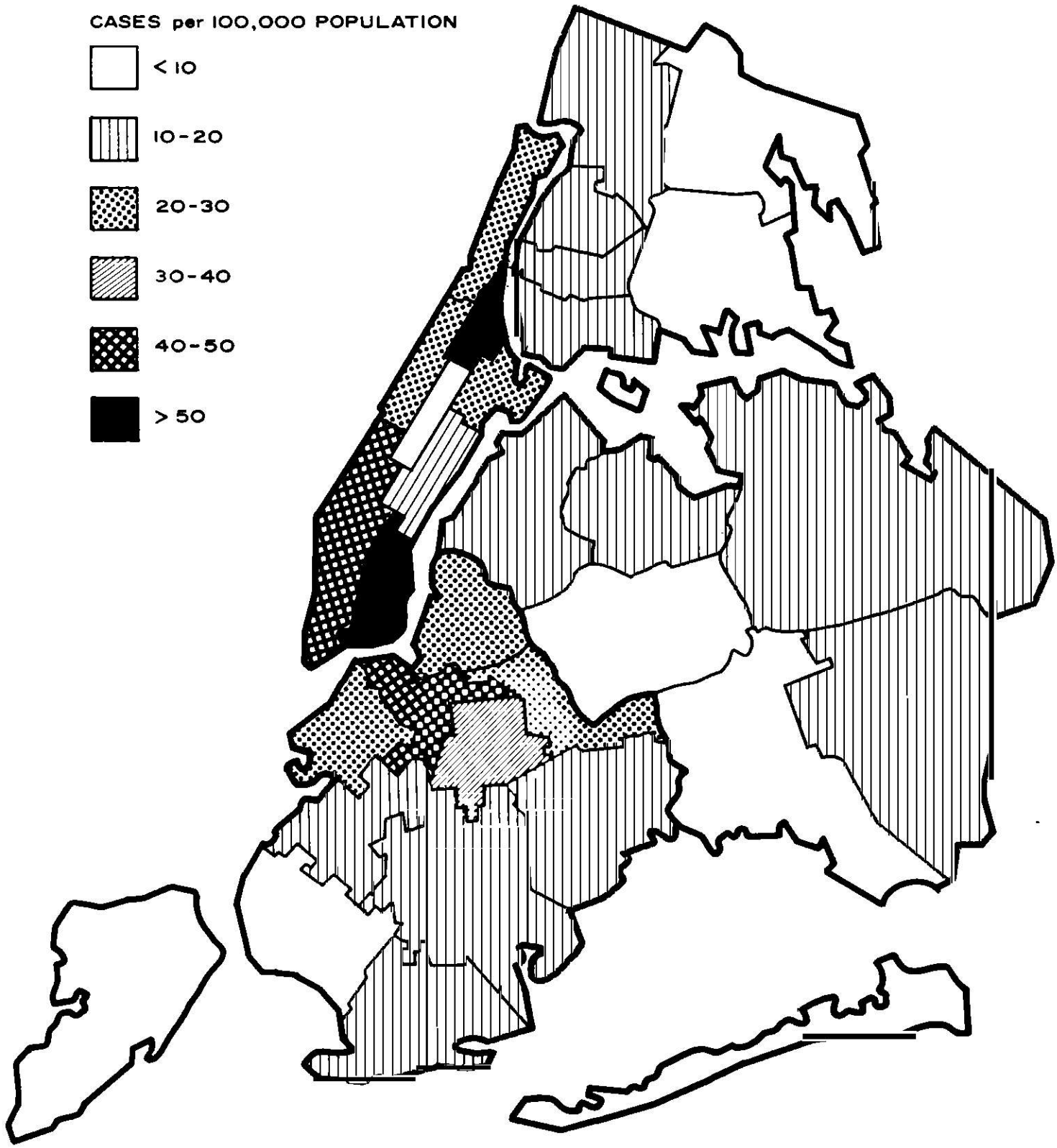
F. Contact Summary

Cases reported that are considered capable of transmitting tubercle bacilli are interviewed for the purpose of eliciting the names of all persons surrounding the case who were at risk of becoming infected. The contacts identified are designated as close or casual. This determination is based upon the infectiousness of the source case, the environmental factors of exposure, and the duration of the exposure. Contacts are examined and placed on preventive chemotherapy. Indicators involving contact follow-up enable the Bureau to measure the success of preventing infection and disease. All of the infectious cases should be interviewed and have contacts identified. At least 95% of the close contacts identified should be examined and started on preventive chemotherapy and 90% should complete the prescribed course of therapy. Table 18 provided a statistical account of the contact follow-up program (see below). It illustrates that the number of contacts identified (2.3 per case) continues to be low. Of those identified, 82% were brought to examination, and of these infected 87% decided to take treatment.

Table 18: Summary of Close Contacts Identified and examined - 1977, 1978, and January-September, 1979, New York City

	1977	1978	1979
# Identified	2,177 (2.7/case)	1,416 (2.4/case)	1,679 (2.3/case)
# Examined	1,734 (80%)	1,205 (82%)	1,384 (82%)
# Not Infected	1,117 (64.5%)	731 (61%)	923 (67%)
# Not Infected On Treatment	254 (23%)	153 (21%)	165 (18%)
# Infected	574 (33%)	454 (37.5%)	428 (31%)
# Infected on Treatment	492 (86%)	382 (84%)	371 (87%)
# With Disease	43 (2.5%)	20 (1.5%)	23 (27%)

1980 TUBERCULOSIS INCIDENCE
NEW YORK CITY by HEALTH DISTRICTS



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