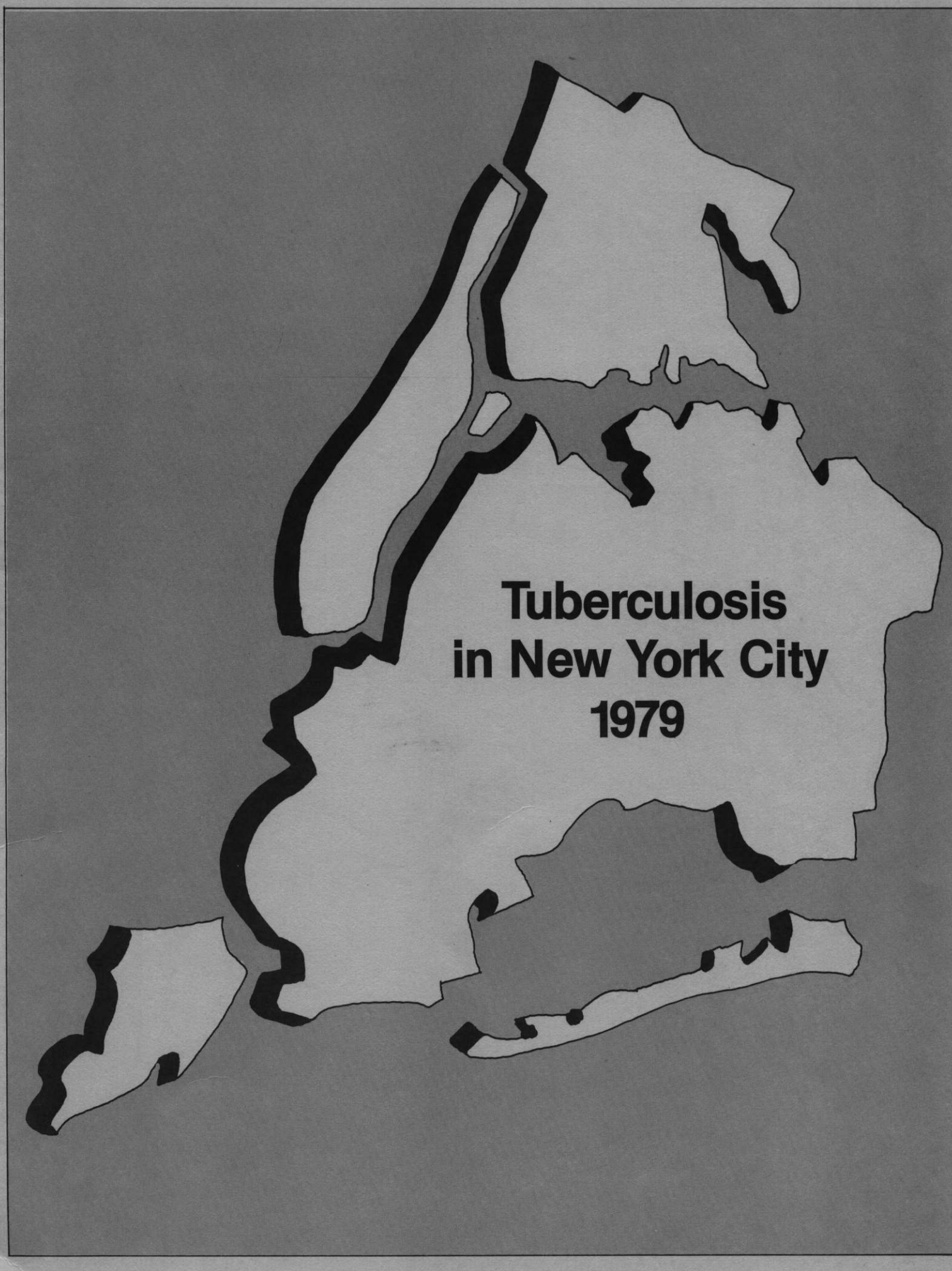

Tuberculosis in New York City 1979

The New York Lung Association is pleased to publish TUBERCULOSIS IN NEW YORK CITY 1979 from data collected by the Division of Tuberculosis of the New York City Department of Health.

At the start of the century, we took the lead in a major battle against tuberculosis which was then attacking more than 13,000 New York City residents every year. Despite remarkable success through the years, tuberculosis still exists amongst our city's population and, therefore, it continues to be a major concern of the Association.

Our efforts on behalf of tuberculosis control will continue until we attain the objective of zero new cases.

Edith Ewenstein, CAE
General Director
New York Lung Association

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The City of New York

DEPARTMENT OF HEALTH

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TO THE CITIZENS OF NEW YORK CITY:

It will become quite apparent to anyone who reads this Annual Report on the status of tuberculosis in New York City for 1979 that the disease thought by many to be disappearing is still very much with us. You will note that a 17% increase in newly reported cases has been documented for 1979. You will also observe that tuberculosis has been diagnosed among the younger population and in particular in young children under the age of four. Cases occurring among the young is evidence that tuberculosis is being actively transmitted in our city and dispels the theory that tuberculosis is disappearing as a public health problem.

The existence of extensive knowledge on tuberculosis makes it a controllable and eradicable disease, but because of funding shortages and inadequate resources tuberculosis remains a serious public health problem in our city. A new interest and dedication regarding tuberculosis has emerged during 1979. It is hoped that if a consistent and sustained control effort can be maintained through the 1980's transmission will be prevented, case rates will decrease and tuberculosis can in a practical sense be eradicated. To maintain the required tuberculosis program, resources to a very large extent will depend on the interest and concern exhibited by the citizens of this city.

If we are all truly committed to the eradication of TB in this city, it can and will be done.

Alje Vennema M.D.

Alje Vennema, M.D.
Medical Director
Division of Tuberculosis

AV:hk

Summary of Regulations and Guidelines for TB Control in New York City

I. Introduction

The advent of anti-TB chemotherapy, the rapid identification of infectious tuberculous disease, and the use of modern epidemiologic techniques have dramatically decreased the incidence of tuberculosis in New York City. However, TB still presents a serious public health problem as demonstrated in the increase of new cases in 1979. In order for the Division of Tuberculosis to ensure TB case supervision and treatment, to ensure contact investigation, examination, and prevention, to provide information about program effectiveness, and to assess the magnitude and characteristics of the TB problem in New York City, the Division needs the utmost cooperation of all the health care providers in New York City.

II. Reporting Tuberculous Disease

The reporting of all cases of tuberculosis is required by Sections 11.03(a) and 11.05(a) of the New York City Health Code. The cases must be reported on the official Tuberculosis Case Report form supplied by the Division of Tuberculosis. The form must be completed and submitted to the Division within 24 hours of the diagnosis.

III. Reporting Suspected Cases of Tuberculosis

In order to take advantage of rapid epidemiology to ensure prevention of infection and to identify other diseased cases, please report to the Division any suspected case of TB which may be based on clinical symptoms, radiologic evidence, or the identification of acid-fast bacilli. Since the confirmatory culture for the identification of Mycobacterium tuberculosis requires six to eight weeks, it is advantageous from a public health standpoint to report the suspected case.

IV. Report of Laboratory Findings of Tuberculosis

Section 13.27 of the New York City Health Code requires all laboratories to report to the Division of Tuberculosis within seven days all findings for tuberuculosis. The findings should be reported on the Division's Laboratory Report form.

V. Reporting of Follow-Up Patient Information

Section 11.47(b) of the New York City Health Code requires treating physicians/facilities to report the current TB patient status to the Division of Tuberculosis whenever the Division requires. Physicians and facilities are required to notify the Division whenever a patient ceases to take drugs or no longer receives care at such facility.

VI. Contact Evaluation

Section 11.47(c) of the New York City Health Code requires the examination of all contacts to newly developed cases of TB. The Division is responsible to ensure the examination and follow-up of all contacts. Physicians and facilities are required to report to the Division the findings of all contact examinations.

Section I: TUBERCULOSIS MORBIDITY AND MORTALITY NEW YORK CITY, 1979

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

The 1,530 tuberculosis cases reported in 1979, compared to the 1,307 cases in 1978, represents a 17 percent increase in incidence. Case rates per 100,000 population were 20.1 in 1979, and 17.2 in 1978. Historically, the number of cases had been steadily declining with only a few insignificant increases over the past few decades. These increases that were documented did not lead to any trend in TB morbidity.

The increase in 1979, is the first significant increase in contemporary times in New York City. Prior to 1977, bacteriologic verification of Mycobacterium tuberculosis was not a major diagnostic aspect in the reporting and counting procedure for new cases. In 1977, the Division began to verify cases reported based upon bacteriologic evidence of M. tuberculosis. That change in the counting procedure had caused a decrease of 25.6% cases compared to 1976. However, only 1,190 (74%) of the 1,605 cases reported in 1977, were verified as culture positive for M. tuberculosis. Because this change was not in effect throughout the entire year, cases were counted as in the previous years based upon radiologic evidence and the starting of at least two anti-TB drugs.

In 1978, the verification procedure of relying on bacteriologic evidence was in effect for the entire year. There were 1,257 (96%) cases verified as culture positive for M. tuberculosis. The other cases counted were verified by histologic examination or positive tuberculin test, radiologic findings, clinical evidence, and recommendation for treatment with two or more anti-TB drugs. Evidence other than bacteriologic was particularly utilized on cases in children where bacteriology was negative or could not be obtained. The decline of 18.6% from 1977, was due to this verification procedure; however, comparing only those cases with positive cultures, there was an increase in incidence of 5.6%.

The uniformity in the verification procedure in 1978, and in 1979, the 1977-1978 comparison of culture positive cases, and our Laboratory Surveillance Program enabled the Division to analyze and to detect what very well may be an increasing morbidity trend in New York City. Two factors which are contributing to this significant trend of increasing morbidity are rediseased cases (cases with TB reported and counted in prior years that failed on their treatment and are verified with disease again) and new transmission of the tubercle bacilli leading to newly developed disease among the very young and leading to increases in the miliary and meningeal forms of the disease. Both of these factors can be directly related to the success or failure of a TB control program.

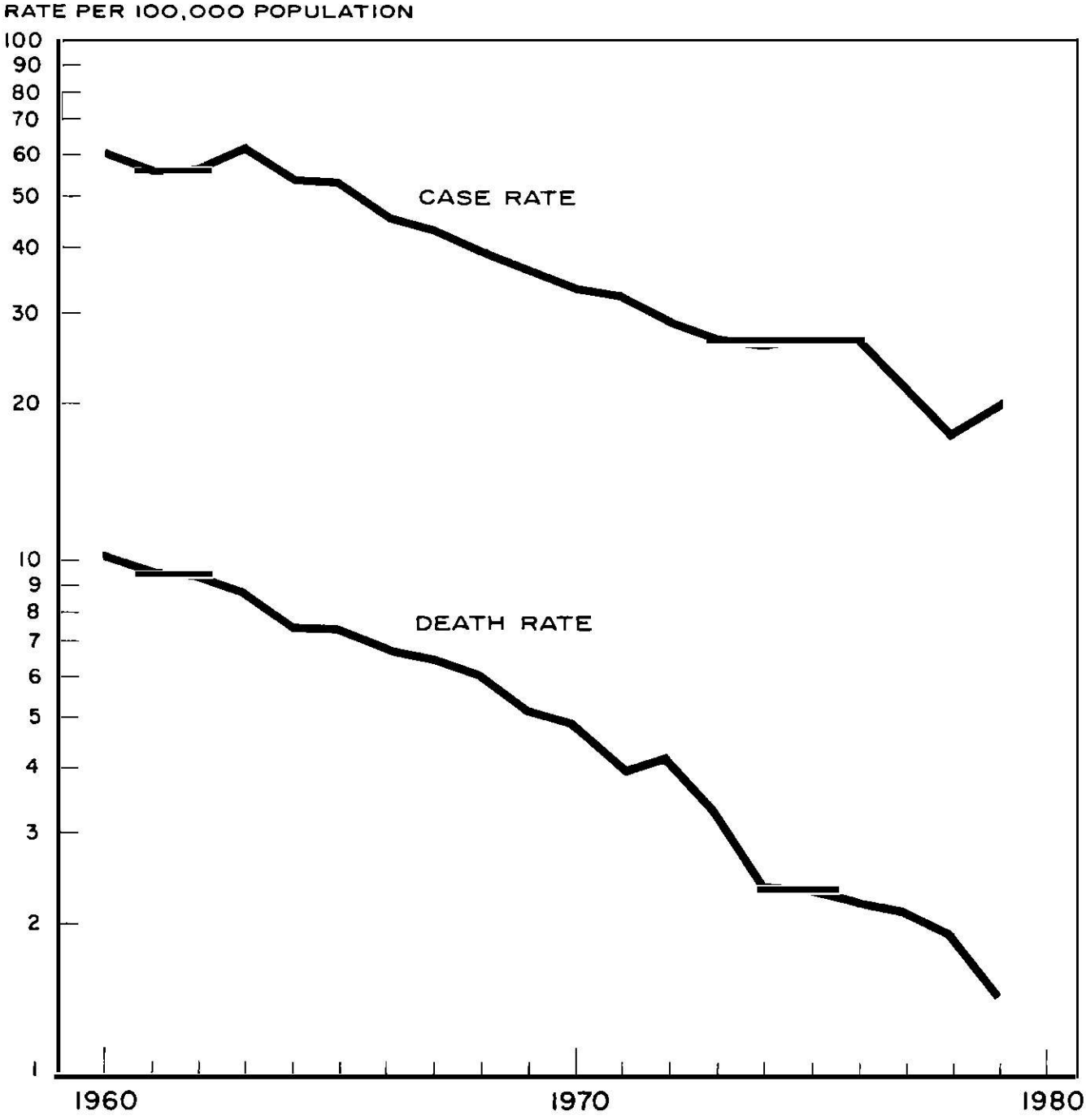
Table 1: NEWLY REPORTED TUBERCULOSIS CASES AND RATES
DEATHS AND RATES, NEW YORK CITY, 1960-1979

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

(*) Per 100,000 Population

Note: TB deaths indicate both the primary and attributing cause

RATES of NEWLY REPORTED TUBERCULOSIS CASES and DEATHS NEW YORK CITY, 1960 - 1979



B. Tuberculosis Mortality (Table 1, Figure 1)

In 1979, 119 persons died with tuberculosis as either the primary or as one of the attributing causes of death compared to 168 in 1978, a 29% decline. Tuberculosis was the primary cause of death in 35 of the 119 persons in 1979, and 44 of the 168 persons in 1978, a 20% decline. The tuberculosis death rate in 1979, was 1.6 per 100,000 population. The number of persons dying with tuberculosis has been steadily declining over the years, however until the number of deaths is reduced to 0, the problem is ever present.

The persons with TB as the primary cause of death were all over the age of 22 (Table 2). Sixty-eight percent were over the age of 64. The male to female ratio was 2 to 1.

Table 2: TUBERCULOSIS AS THE PRIMARY CAUSE OF DEATH BY AGE AND SEX, NEW YORK CITY, 1979

AGE GROUP	MALE	FEMALE	TOTAL
0-4	0	0	0
5-14	0	0	0
15-24	0	1	1
25-44	6	5	11
45-64	5	4	9
65+	12	2	14
TOTAL	23	12	35

An analysis of TB mortality presents another problem. An alarming number of new cases were only discovered at the time of death on autopsy. In 1979, 29 new cases were found at death compared to 64 in 1978, a decline of 55%. Even though the decrease is significant, not knowing that 29 persons had TB prior to their death is a reason for concern. The cases found at death were all over the age of 38. The age groups of 24-44 and over 64 each had 38% of the mortality. The male to female ratio was 2 to 1 (Table 3). TB as the primary cause of death was found in 16 of those 29 cases discovered at the time of death. With TB being easily diagnosed and treated, it is difficult to believe that anyone should die with TB in 1979, but they did.

Table 3: TUBERCULOSIS CASES FOUND AT DEATH (AUTOPSY) BY AGE AND SEX, NEW YORK CITY, 1979

AGE GROUP	MALE	FEMALE	TOTAL
0-4	0	0	0
5-14	0	0	0
15-24	0	0	0
25-44	6	5	11
45-64	6	1	7
65+	9	2	11
TOTAL	21	8	29

C. Newly Reported Tuberculosis Cases by Site of Disease and by Bacteriologic Status, 1979 (Table 4, Figure 2)

Increases were seen in both the pulmonary and extrapulmonary cases in 1979. The number of cases verified with positive culture for M. tuberculosis was 1,450 in 1979, compared to 1,257 in 1978, a 15% increase. The percent of pulmonary versus extrapulmonary cases has been proportionally the same for many years. The past decreasing trend occurred among both the pulmonary and extrapulmonary cases. The increasing morbidity trend currently documented is impacting equally on both the pulmonary and extrapulmonary cases.

The number of pulmonary cases as the predominate site was 1,323 in 1979, 86% of the total morbidity. There was an increase of 196 pulmonary cases compared to 1978, a 17% increase. However, the percent of pulmonary cases as the predominate site remained at 86%. The number of pulmonary cases reported with positive culture was 1,258, 95% of the total number of pulmonary cases. There was an increase of 177 positive culture pulmonary cases in 1979, compared to 1978, a 16% increase. The number of pulmonary cases reported with positive sputum cultures was 1,234 and 732 of those had the sputum smear positive for acid-fast bacilli in 1979, an increase of 214 sputum cultures positive and 16 sputum smears positive compared to 1978.

There were 207 extrapulmonary cases reported in 1979, 14% of the total morbidity. There was an increase of 27 extrapulmonary cases compared to 1978, a 16% increase. The number of extrapulmonary cases reported with positive culture was 192, 93% of the total number of extrapulmonary cases. There was an increase of 42 culture positive cases compared to 1978, a 28% increase. Compared to 1978, there were increases in all extrapulmonary sites except the lymphatic. The percentages of the sites compared to the total number of extrapulmonary cases have been remaining about the same over the years. Miliary cases increased from 13 in 1978, to 22 in 1979, and meningeal rose from 4 to 14. The increases especially in those two sites as well as in TB overall presumably indicate an increase in recent transmission of the tubercle bacilli as well as poor surveillance and containment of TB in New York City.

D. Newly Reported Tuberculosis Cases by Age, Race, and Sex, New York City, 1979

1. Age (Table 5, Figure 3)

Although 71% of the cases reported in 1979, were over age 34, tuberculosis is still a problem in the children, adolescents, and young adults. Fifty-three cases (4%) were reported under age 15 and 440 (29%) were reported under age 35. This fact indicates that transmission still occurs and that a strong and stable control program is needed.

(continued on page number 8)

Table 4: NEWLY REPORTED TUBERCULOSIS CASES BY SITE OF DISEASE AND BY BACTERIOLOGIC STATUS, NEW YORK CITY, 1979

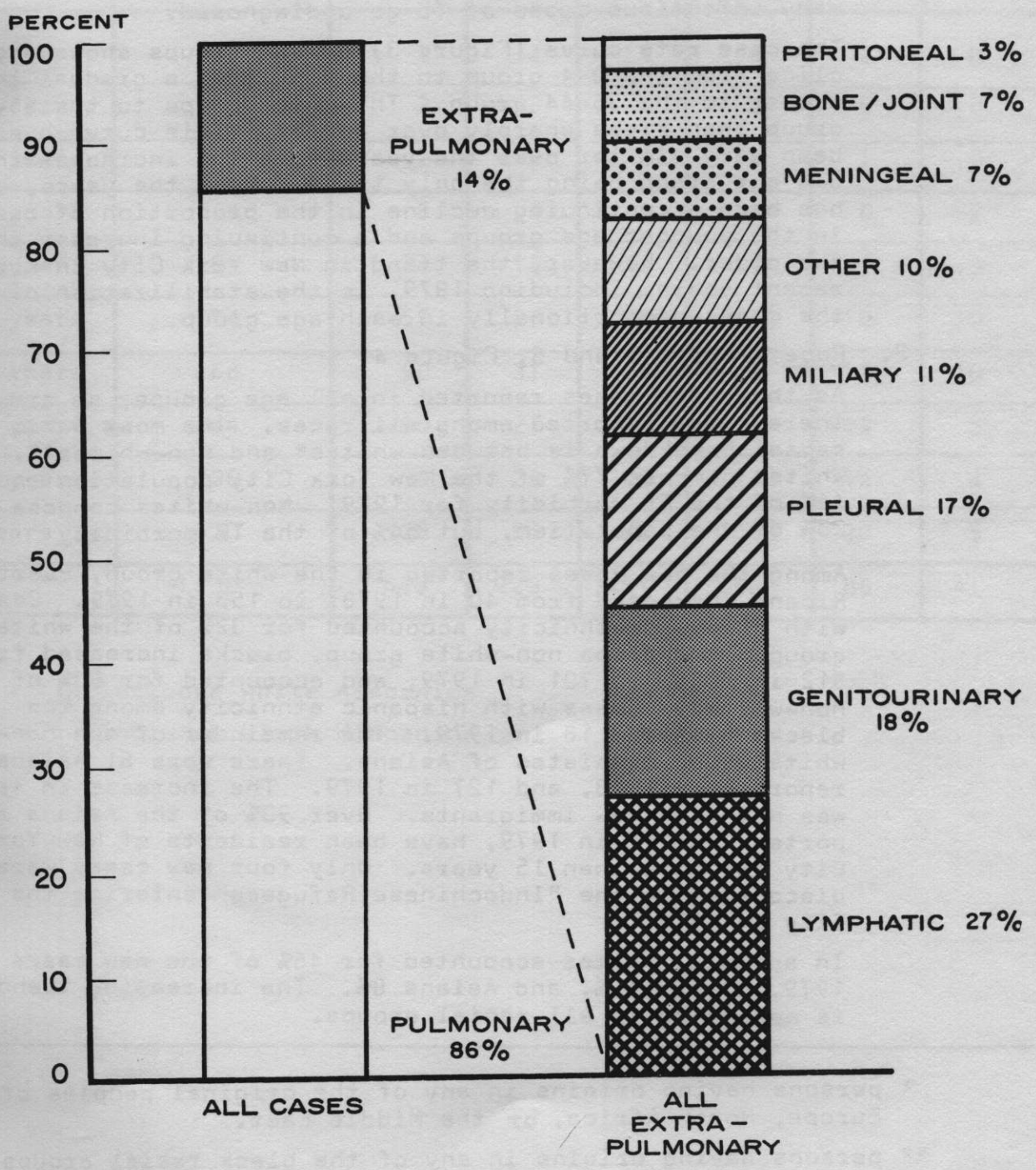
PREDOMINATE SITE	TOTAL CASES	BACTERIOLOGIC STATUS			
		POSITIVE		NEGATIVE	NOT DONE
		CULTURE (1)	SMEAR ONLY (2)	(3)	
Pulmonary	1,323	1,258	29	23	13
Extrapulmonary	207	192	9	6	0
Pleural	35	35	0	0	0
Lymphatic	56	50	4	2	0
Bone/Joint	14	12	2	0	0
Genitourinary	38	38	0	0	0
Miliary	22	19	1	2	0
Meningeal	14	14	0	0	0
Peritoneal	7	6	1	0	0
Other	21	18	1	2	0
Total All Sites	1,530	1,450	38	29	13

(1) Positive culture with positive, negative, or unknown smear.

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

(3) All cultures were negative.

NEWLY REPORTED TUBERCULOSIS CASES
BY SITE of DISEASE
NEW YORK CITY, 1979



One of the greatest TB problems is the rising number of cases under the age of 5. There were 16 new cases reported in 1977, 26 in 1978, and 32 in 1979. This represents a 100% increase in only two years. One might assume that the cases under age 5 were discovered as contacts to known cases of disease among other family members, however, most of the cases were discovered because of TB symptoms and not recent exposure. Furthermore, due to inadequate investigations surrounding each diseased case, only a small number of sources have been identified for children under age 5. This evidence supports the argument that many infectious cases of TB go undiagnosed.

The case rate curve (Figure 3) by age groups shows a decline from the 0-4 group to the 5-9, then a gradual increase to the 35-44 group. The curve drops to the 55-64 group then rises sharply over age 64. This curve has been very similar over the years with the increases in the 0-4 age group being the only trend. Over the years, there has been a continuing decline in the proportion of cases in the younger age groups and a continuing increase in the older. However, the trend in New York City in most recent years, including 1979, is the stabilization of the cases proportionally in each age group.

2. Race (Tables 5 and 6, Figure 4)

As there are cases reported in all age groups, so are there cases reported among all races. The most basic racial breakdown is between whites* and non-whites**. Whites compose 77% of the New York City population and 46% of the TB morbidity for 1979. Non-whites compose 23% of the population, but 54% of the TB morbidity

Among the new cases reported in the white group, Puerto Ricans increased from 40 in 1978, to 153 in 1979. Cases with Hispanic ethnicity accounted for 32% of the white group. Among the non-white group, blacks increased from 512 in 1978, to 701 in 1979, and accounted for 85% of the non-whites. Cases with Hispanic ethnicity among the blacks numbered 18 in 1979. The remainder of the non-white group consisted of Asians. There were 61 Asians reported in 1978, and 127 in 1979. The increase in Asians was not from new immigrants. Over 90% of the Asians reported with TB in 1979, have been residents of New York City for more than 15 years. Only four new cases were discovered in the "Indochinese Refugees" entering the City in 1979.

In summary, whites accounted for 46% of the new cases in 1979, blacks 46%, and Asians 8%. The increasing trend cited is appearing in all racial groups.

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* 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.

Table 5: NEWLY REPORTED CASES BY AGE, SEX, AND RACE
NEW YORK CITY, 1979

AGE GROUPS	TOTAL ALL RACES	WHITE[1]		BLACK[2]		ASIAN	
		M	F	M	F	M	F
0-4 years	32	8	4	14	4	2	0
5-9 years	8	2	3	1	2	0	0
10-14 years	13	2	2	3	5	1	0
15-19 years	34	8	4	8	12	0	2
20-24 years	99	24	18	26	19	7	5
25-34 years	254	59	26	78	63	18	10
35-44 years	266	60	31	107	47	11	10
45-54 years	264	90	27	93	36	13	5
55-64 years	230	88	28	69	27	14	4
65+ years	330	138	80	52	35	20	5
TOTAL	1530	479	223	451	250	86	41

1: Includes white Hispanics

2: Includes black Hispanics

NEWLY REPORTED TUBERCULOSIS CASE RATE
NEW YORK CITY, 1979

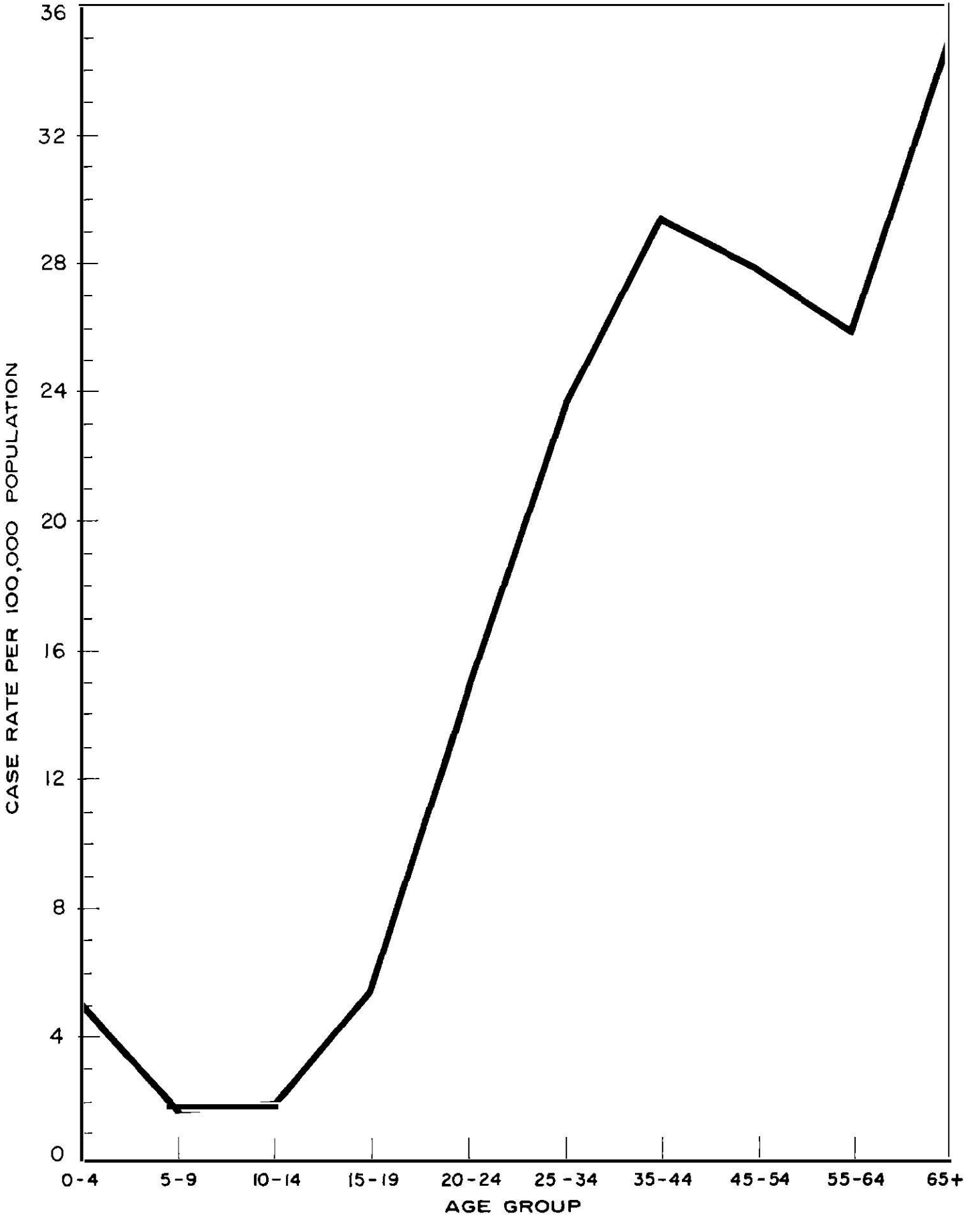
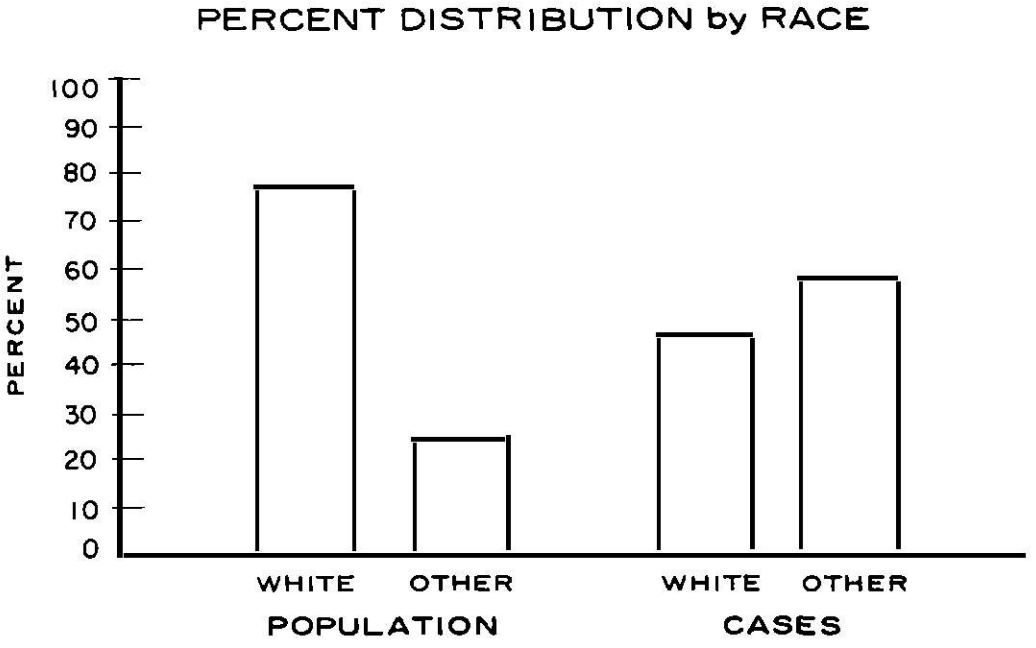
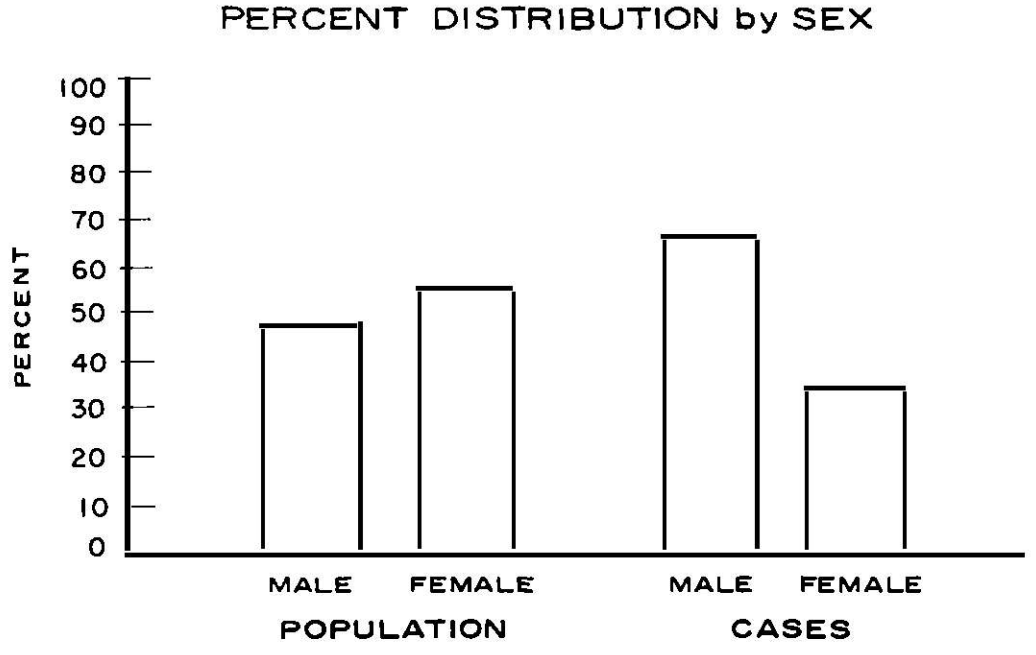


Table 6: NEWLY REPORTED CASES, WHITE VS. NON-WHITE, 1960-1979

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

PERCENTAGE DISTRIBUTION of NEWLY REPORTED CASES OF TUBERCULOSIS, and of POPULATION by RACE and SEX NEW YORK CITY, 1979





3. Sex (Table 5, Figure 5)

As in the past, males outnumbered females at a 2 to 1 ratio. Below age 25, tuberculosis occurs with almost equal frequency between males and females. Beginning at age 25, however, the disparity in cases between sexes becomes pronounced, and after age 44, cases for men are about three times those for women.

The male population in New York City is 47%, but 67% of the 1979, new TB cases were men. The greatest number of males was reported in the white over age 64 group and the greatest number of females was also reported in the same category.

E. Newly Reported Tuberculosis Cases with Disease Again, Reactivations

Patients with tuberculosis will be cured provided they are continuous on therapy and complete their recommended course of at least two or more anti-TB drugs. 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 noninfectious.

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 that are verified and counted again. Cases with TB again are an indicator of poor disease containment on the part of the control program. Also drug continuity and completion indices (explained in Section III of this report) are far below program goals, thus adding many more patients to the reservoir of possible TB again cases. They are also possible transmittors of the tubercle bacilli.

In 1979, there were 177 cases with TB again compared to 67 in 1978. These cases with TB again accounted for 12% of the total morbidity. There were 93% pulmonary cases and 96% of the total new cases with TB again were culture positive. Seventy-five percent were over age 44, 58% were nonwhite, and 76% were male.

F. Geographic Distribution of Newly Reported Tuberculosis Cases, New York City, 1979 (Tables 7 and 8)

New York City is composed of five counties or boroughs. Each county is divided into health districts. There were residents of every county and every health district found with tuberculosis in 1979. The case rate for each health district is proportional to its population density as well as to its socio-economical status. The case rates ranged from 6.1 in Richmond County to 79.0 in the Lower East Side health district of New York County (Manhattan).

(continued on page number 15)

Table 7: NEWLY REPORTED TUBERCULOSIS CASES BY COUNTY AND HEALTH DISTRICT OF RESIDENCE, NEW YORK CITY, 1979, AND NEWLY REPORTED CASE RATES, 1977-1979

COUNTY	HEALTH DISTRICT	CASES 1979	RATE* 1979	RATE* 1978	RATE* 1977
New York		587	40.4	32.7	34.6
	Central Harlem	81	50.9	52.2	64.2
	East Harlem	35	26.3	14.2	32.3
	Kips Bay/Yorkville	26	11.5	12.3	9.7
	Lower East Side	188	79.0	45.8	43.9
	Lower West Side	118	47.8	36.0	36.0
	Riverside	73	34.3	31.5	35.2
	Washington Heights	66	27.9	33.8	28.7
Bronx		202	14.6	13.0	18.8
	Fordham/Riverdale	30	12.2	14.2	9.3
	Morrisania	40	19.0	19.0	24.6
	Mott Haven	32	18.7	12.9	33.3
	Pelham Bay	26	11.5	7.5	11.9
	Tremont	50	20.8	19.2	23.8
	Westchester	24	8.3	6.9	15.2
Kings		498	20.1	16.3	24.2
	Bay Ridge	25	9.5	5.3	10.6
	Bedford	87	33.9	30.4	42.8
	Brownsville	55	18.2	25.5	30.5
	Bushwick	52	25.2	15.5	26.7
	Flatbush	67	13.9	11.4	15.8
	Fort Greene	71	39.2	43.1	53.6
	Gravesend	46	14.7	5.7	9.6
	Red Hook/Gowanus	34	25.6	13.5	24.8
	Sunset Park	21	11.9	10.7	20.3
	Williamsburg/Greenp't	40	24.4	9.8	25.6
Queens		223	11.3	11.6	11.2
	Astoria/LIC	36	14.9	15.3	15.7
	Corona	36	14.1	20.4	17.5
	Flushing	41	8.5	5.6	6.6
	Jamaica East	60	18.1	15.4	17.2
	Jamaica West	25	6.7	8.9	9.4
	Maspeth/Forest Hills	25	8.7	9.8	4.5
Richmond		20	6.1	5.8	7.0
	Richmond	20	6.1	5.8	7.0
TOTAL	NEW YORK CITY	1,530	20.1	17.2	21.1

* Rate is per 100,000 population.

Six out of the 7 health districts in New York County (Manhattan) had greater case rates in 1979, than the provisional case rate for the United States in 1979, which was 12.6. Kings County (Brooklyn) had 8 districts out of 10 greater than the national rate, Bronx and Queens Counties each had 3 out of 6, and Richmond County (Staten Island) having only one district had well below the national rate. Three of New York City's five counties and 20 out of the 30 health districts reported rates greater than the national rate.

New York County (Manhattan) with 587 new cases led the way with a case rate of 40.4 in 1979. With the exception of the Kips Bay/Yorkville district, all areas of Manhattan have severe TB problems with the more serious occurring in the Lower East, Lower West, and Upper West Sides, and in the Central Harlem districts. Most of the case rates in Manhattan as well as in the other boroughs remained relatively unchanged with the exception of a sharp increase in the Lower East Side of Manhattan. The number of cases in the older age groups are much higher in Manhattan with 60% over the age of 45 and 24% over the age of 64. Most of those cases reside in the Southern areas of Manhattan.

New transmission of the tubercle bacilli and greater numbers of cases in the younger age groups were seen in every borough except Richmond. The health districts of particular concern are Central Harlem, East Harlem, Riverside, and Washington Heights in Manhattan; Bedford, Bushwick, Brownsville, and Fort Greene in Brooklyn; Astoria and Corona in Queens; and Tremont and Morrisania in the Bronx.

Table 8: NEWLY REPORTED TUBERCULOSIS CASES BY AGE AND COUNTY NEW YORK CITY, 1979

AGE GROUPS	NEW YORK	KINGS	BRONX	QUEENS	RICHMOND
0-4	9	10	6	6	1
5-9	1	6	0	1	0
10-14	2	6	4	1	0
15-19	7	15	3	9	0
20-24	29	33	16	20	1
25-34	87	93	44	30	0
35-44	99	94	38	45	0
45-54	104	92	31	30	7
55-64	105	72	18	30	5
65+	144	87	42	51	6
TOTAL	587	498	202	223	20

G. Newly Reported Tuberculosis Cases by Source of Report, 1979 (Table 9)

In 1979, 53% 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 Hospital Corporation (public sector). Prior to 1978, the public sector has always diagnosed and reported more cases than the private sector. The private sector is now not only identifing more cases, but also treating and supervising increasing numbers of diseased cases.

New York County (Manhattan) reporting sources accounted for 49% of the 1979 morbidity. Kings County (Brooklyn) sources reported 29% and Queens reported 10%, Bronx 10%, and Richmond 1%. Twenty-one percent of the cases reported from New York County sources resided in one of the other counties within New York City.

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

Table 9: NEWLY REPORTED TUBERCULOSIS CASES BY SOURCE OF REPORT BY COUNTY, NEW YORK CITY, 1979

SOURCE OF REPORT	NEW YORK CITY		COUNTIES									
			NEW YORK		KINGS		QUEENS		BRONX		RICHMOND	
	CASES	PERCENT	CASES	PERCENT	CASES	PERCENT	CASES	PERCENT	CASES	PERCENT	CASES	PERCENT
DEPARTMENT OF HEALTH CHEST CLINICS	72	5	11	2	43	10	11	7	7	5	0	0
MUNICIPAL HOSPITALS	633	42	281	37	200	45	76	52	76	49	0	0
VOLUNTARY HOSPITALS	708	46	401	54	176	40	46	31	67	44	18	100
PRIVATE PHYSICIANS	82	5	44	6	21	5	14	10	3	2	0	0
OTHERS*	35	2	7	1	0	0	0	0	0	0	0	0
TOTALS	1,530	100	744	100	440	100	147	100	153	100	18	100

(*) 28 cases were reported by sources outside of New York City

Section II: PREVALENCE OF TUBERCULOUS DISEASE AND INFECTION NEW YORK CITY, December 31, 1979

A. Tuberculous Disease Prevalence (Table 10, Figure 6)

The prevalence of tuberculous disease patients under supervision as of December 31, 1979, was 2,702. The patients under supervision on an ambulatory basis was 2,393.

During 1979, 1,633 patients were added to the disease prevalence under supervision and 2,243 patients were closed to supervision. Of the patients closed from the Case Register, 57% had completed supervision, 28% were lost to supervision, 10% died, and 5% 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 hospital, clinic, or private physician). As of December 31, 1979, of the 2,393 patients that were under supervision, the Health Department clinics supervised 22% and the Municipal hospital clinics 46% giving the public sector 68% of the total disease prevalence under supervision on an ambulatory basis.

Although the private sector diagnosed and reported 53% of the 1979 morbidity, it is providing medical supervision to 32% of the disease prevalence. Many cases diagnosed by the private sector are supervised by the public sector because patients who cannot pay are transferred to the public facilities or because they failed to keep clinic appointments and were returned to supervision at a public facility by one of the Division's field staff.

Only 64% of the total disease prevalence under supervision were seen by their medical supervisor for the evaluation and chemotherapy during the period October 1, 1979, through December 31, 1979. The 798 patients recommended for treatment with two or more anti-TB drugs that were not taking their drugs during that period of time and the 625 patients that were lost to supervision during 1979, add up to 1,423 TB patients that were not on drugs. Those patients are now candidates to "reactivate", transmit tubercle bacilli, and develop drug resistance.

Of the 2,220 cases recommended for two or more anti-TB drugs, only 63% had their bacteriology status evaluated during the report period. The 342 patients that should have been bacteriologically evaluated were sputum positive prior to October 1, 1979. Because they have not been evaluated, the Division can not determine their infectiousness.

Since December 31, 1974, the disease prevalence under supervision has declined about 50%. With the recommended length of treatment being 18 to 24 months, the total disease prevalence under supervision should be about 1.5 to 2 times the annual incidence of cases reported.

(continued on page number 21)

Table 10: TUBERCULOSIS PROGRAM MANAGEMENT REPORT - CASE REGISTER

TUBERCULOUS DISEASE PREVALENCE, NEW YORK CITY

JANUARY 1, 1979, TO DECEMBER 31, 1979

A. Patients Under Supervision at Start of Period.....3,312
B. Patients Added During Period.....1,633
C. Patients Closed to Supervision During Period.....2,243
   1. Supervision Completed.....1,271
   2. Moved Out of Jurisdiction..... 123
   3. Lost to Supervision..... 625
   4. Died..... 224
D. Patients Under Supervision at End of Period.....2,702
   1. Patients in a general hospital (inpatient).... 309
   2. Patients at home (ambulatory care).....2,393

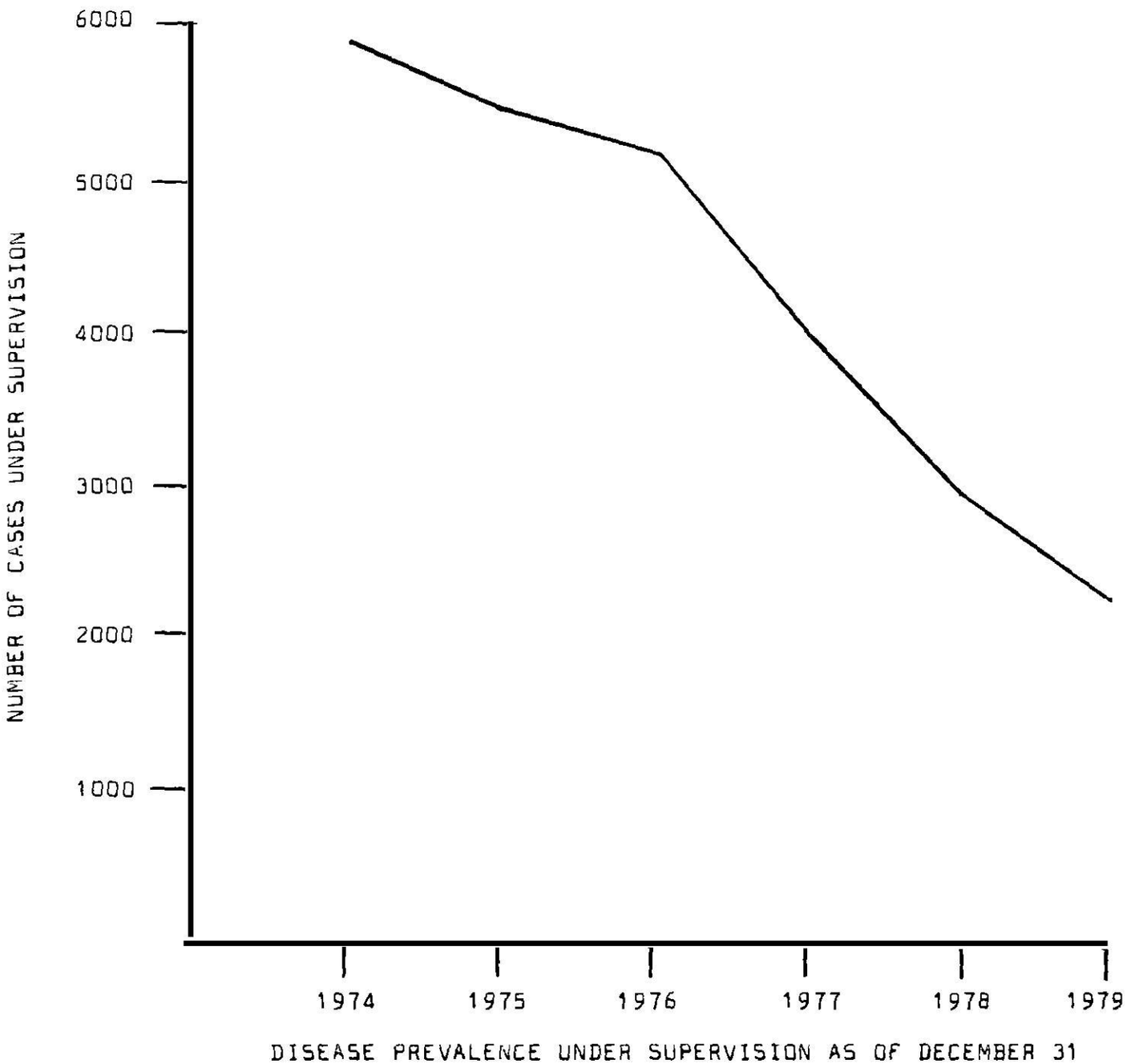
STATUS OF PATIENTS AT HOME AS OF DECEMBER 31, 1979 (same as D-2)

	TOTAL CASES	TWO or MORE TB DRUGS	ONE TB DRUG
CHEMOTHERAPY			
Recommended	2,393	2,220 (i)	173
On Drugs	1,534	1,422 (ii)	112
Not on Drugs	859	798	61
BACTERIOLOGY			
Positive within past 3 months	134	133 (iii)	1
Negative within past 3 months	502	439 (iv)	63
Not Recommended	1,408	1,306 (v)	102
Recommended, but not done	349	342	7

Chemotherapy Index $\frac{(ii)}{(i)} \times 100 = 64\%$

Bacteriology Index $\frac{(iii)+(iv)}{(i)-(v)} \times 100 = 63\%$

Figure 6: TUBERCULOUS DISEASE PREVALENCE UNDER SUPERVISION DECEMBER 31, 1974-79, NEW YORK CITY



The prevalence had been reduced by discharging the cases that had completed therapy but were being periodically evaluated. Hopefully, once the control program can provide an adequate field staff who can help in maintaining patients on treatment, the prevalence under supervision should be approximately 3,000 for the next several years.

B. Tuberculous Infection Prevalence

The prevalence of New York City residents with tuberculous infection has been estimated to be 2 million or about 25% of the total population. Each year about 1,800 residents become infected and are added to the reservoir of infection.

Without an effective Tuberculosis Control Program to interrupt transmission and to prevent infection and disease, the reservoir of infection will continue to grow thus assuring future disease in New York City. Approximately 80% of the annual incidence of TB reported in New York City comes from this reservoir of infection. Because the risk of developing disease is very low (about 6 per 1,000) among the persons in the reservoir of infection, mass screening programs are not cost effective. However, the intensive interviewing of known cases and the examination and preventive management of their contacts is extremely effective and should reduce both the number of new persons added to the reservoir of infection by about 90% and the number of new cases of disease by about 10%.

In 1979, 3,200 persons were placed on preventive chemotherapy. There were 2,176 persons* placed on preventive chemotherapy from the reservoir of infection. Of the recently exposed contacts found with infection, only 352 were placed on preventive therapy, and 240 of the contacts initially not infected were placed on preventive therapy. The other 432 persons placed on preventive therapy were found to have converted their tuberculin test.

The "Indochinese Refugees" relocating in New York City are adding to the reservoir of infection. It has been estimated that about 2,250 of these "boatpeople" with tuberculous infection entered and now reside in the City. Presently, the Indochinese Refugees and the other new immigrants both legal and illegal are not causing the City's current TB problems, however, since these people are entering the City with tuberculous infection, they could possibly become the TB incidence of the future.

* vounteers requesting tuberculin skin test personally or because of a school or employment requirement

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 Division 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. Fiscal crises at the Federal, State, and City levels have eroded resources that could cause the New York City's Control Program to cease to function. Every effort is being made so that this possibility does not occur.

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 Division 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.
3. Infected persons without disease must be prevented from developing disease.
4. Noninfected persons must remain free from infection.

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 durgs 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 the 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 Division that infectious cases will become noninfectious and that noninfectious 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 noninfectious within a short period of time and will be cured.

   The Division's optimal objective is to have at least 95% of the cases started on drugs maintain continuity without interrruption for 12 consecutive months, and have 90% complete the prescribed course of therapy. Table 11 presents the current results of this performance indicator.

Table 11: 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, 1978, 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	
Jul-Sep, 1978	58	
Oct-Dec, 1978	50	
Jan-Mar, 1979	57	

An analysis of the results of this indicator demonstrates the existence of severe control problems. The low continuity and completion percentages are caused by the following factors:

a. Diagnosing/Treating Facility Factors
   1. Failure to sufficiently motivate the patient regarding the seriousness of the disease and the need for chemotherapy.
   2. Lack of an effective transition of the patient from an inpatient to an outpatient treatment setting.
   3. Placement of patients indicating treatment compliance problems on a monthly or less frequent ambulatory supervision schedule.
   4. Placement of patients on less than monthly supervision as a general policy.
   5. Failure to report to the Division when a patient breaks supervision or refuses to take therapy or informs the Division long after the break occurs and the patient becomes lost and/or complacent about taking drugs.

b. Patient Factors
   1. Compliance problems caused by alcoholism or drug abuse and/or other social problems.
   2. Because of financial problems and living conditions, health matters become a low personal priority.
   3. A feeling of good health causes patients to stop taking drugs after a few weeks or months.
   4. Becomes frustrated with the health care system and fails to keep clinic appointments.

c. TB Control Program Factors
   1. Inadequately trained or incompetent field staff.
   2. Non-motivated field staff.
   3. Inadequate number of field staff.

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 the drug continuity and completion of therapy report. This is a companion performance indicator to the drug continuity in that it enables the Division to measure the success of rendering the infectious persons noninfectious. 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 12 presents the current results of this performance indicator.

Table 12: Conversion of Positive Sputum Culture Cases of TB at Three and Six Months for Cases Reported January-March, 1978, to July-September, 1979, 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	51
Apr-Jun, 1979	35	44
Jul-Sep, 1979	41	51

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.

C. 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. Depending on their risk of infection, contacts are examined and placed on preventive chemotherapy. Indicators involving contact follow-up enable the Division 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 13 provides a statistical account of the contact follow-up program.

Table 13: Summary of Close Contacts Identified and Examined 1977, 1978, and January-September, 1979, New York City

	1977	1978	1979 (Jan-Sep)
# Identified	2,177 (2.7/case)	1,416 (2.4/case)	1,252 (2.4/case)
# Examined	1,734 (80%)	1,205 (82%)	1,053 (84%)
# Not Infected	1,117 (64.5%)	731 (61%)	699 (66%)
# Not Infected On Treatment	254 (23%)	153 (21%)	144 (21%)
# Infected	574 (33%)	454 (37.5%)	331 (32%)
# Infected On Treatment	492 (86%)	382 (84%)	295 (89%)
# With Disease	43 (2.5%)	20 (1.5%)	13 (2%)

Analysis of the Contact Summary indicates that there are many factors contributing to the low yield of contacts identified and examined, the low percentage of contacts placed on preventive therapy, and the high percentage of infection and disease.

a. Diagnosing/Treating Facility Factors
   1. Slow reporting of the case to the Division resulting in time delays in the identification, examination, and preventive treatment of contacts as well as the Division's inability to locate the patient after he leaves the hospital.
   2. Failure to explain the diagnosis or the disease process to patients makes them uncooperative or unconcerned about contacts.
   3. Failure to obtain the proper address of the patient at admittance greatly enhances the patient's chance of being lost to follow-up.
   4. Failure to recommend preventive treatment for contacts.

b. Patient Factors
   1. Because of personal problems or social stigma, the patient refuses to be interviewed or does not provide all of his contacts.
   2. Transiency and desire for anonymity make patients difficult to locate.

c. TB Control Program Factors
   1. Lack of epidemiologic skills and techniques of field staff resulting in low yield on contacts followed-up.
   2. Inadequate numbers of field staff to perform epidemiologic activities.

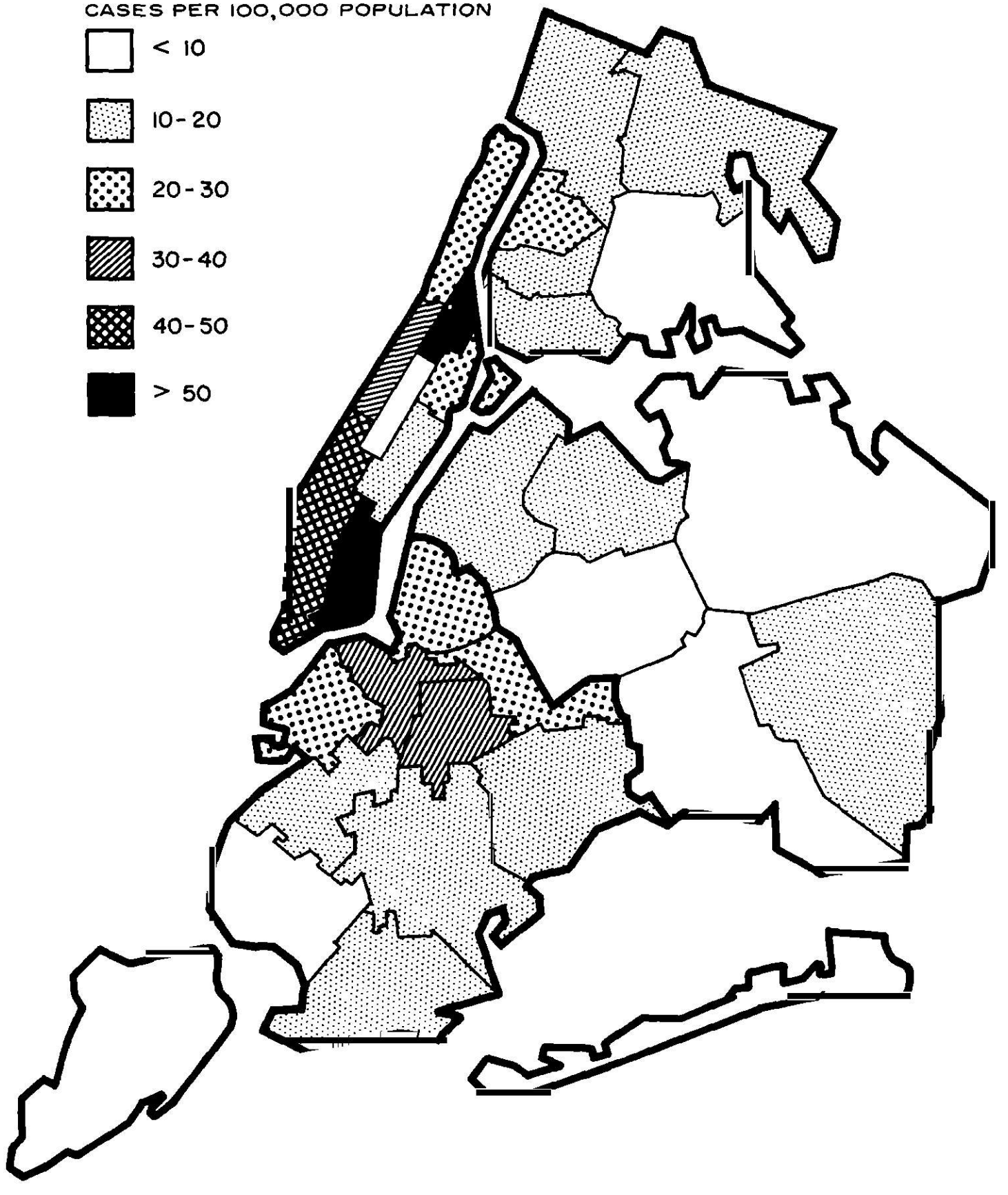
F. Summary

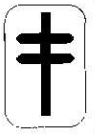
The performance indicators present a dismal picture of TB Control in New York City. The increased incidence in 1979, is the product of case management failures over the past several years. Having identified the problems and obtained recognition of them, the Division is taking corrective measures.

The Division has chronic problems of obtaining case reports and update status reports from the voluntary sector of medicine. Without this information, tuberculosis can never be completely controlled. Attempts are being made to improve the cooperation of the voluntary institutions.

The Division's most critical need is a highly motivated and effectively trained field staff. With sufficient resources and the utmost cooperation from the diagnosing and treating facilities in New York City, the TB Control Program will reduce the incidence of new cases and will eliminate both the personal and public health threat that tuberculosis poses to New York City residents.

1979 TUBERCULOSIS INCIDENCE
NEW YORK CITY by HEALTH DISTRICT





CHRISTMAS SEALS FIGHT
Lung Disease
IT'S A MATTER OF LIFE AND BREATH