

TUBERCULOSIS ADMINISTRATION IN THE BELLEVUE-YORKVILLE HEALTH CENTER DISTRICT OF NEW YORK CITY¹

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MORE detailed and critical study of the effectiveness of the various services which fall within the province of public health should be made in order to counteract the tendency for administrative procedures to become inflexible and merely routine. This particular paper presents an attempt to evaluate a cross-section of the work done by the Bellevue-Yorkville Health Center in the control of tuberculosis and may serve as an example of a method of study of administrative procedure in one department of public health.²

The Bellevue-Yorkville Health Center, which was established in 1926 as an experiment, was made possible through the organization of the official and voluntary health and welfare agencies and institutions which had been working in that area, and the financial assistance of the Milbank Memorial Fund during the period 1926-1934. It served a population of approximately 153,000 living in the section of the Borough of Manhattan bounded by the East River, 14th and 64th Streets and Fourth Avenue below and Sixth Avenue above 42nd Street. Fifty per cent of the 43,539 families living in the area were classed as foreign born with Italian and Irish predominating. Economic status of families in the district as expressed

¹ From the Milbank Memorial Fund.

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² In 1935 the tuberculosis clinic of the Department of Health in Bellevue-Yorkville was discontinued. The population of Yorkville is now served by Lenox Hill Hospital and New York Hospital out-patient departments and that of upper Bellevue by the out-patient department of Bellevue Hospital.

in terms of rentals showed that 39 per cent of the families paid less than \$30.00 per month for rent and 60 per cent less than \$50.00.

Bellevue-Yorkville district is one of the areas of Manhattan with a relatively high tuberculosis mortality. Figure 1 shows that for the period 1922-1931 the tuberculosis death rates for Bellevue-Yorkville were slightly higher than the rates for Manhattan except for the years 1929-1931 and considerably higher than the rates for all of New York City throughout the period.

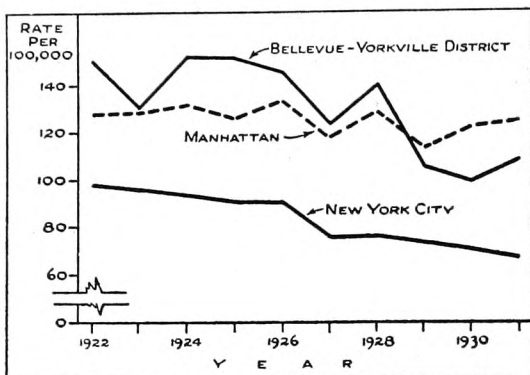


Fig. 1. Tuberculosis mortality for the Bellevue-Yorkville district, Manhattan, and New York City (based on residents only), 1922-1931. (Data from Health Conditions, Bellevue-Yorkville District, New York City, by Godias J. Drolet and Edith H. Clark.)

Consequently, the control of tuberculosis has been one of the major interests in the development of the health center program in this particular district and additional services were established to supplement those provided by the former Yorkville clinic and by the Bellevue Hospital clinic.

DATA AND METHOD OF STUDY

The method employed in this particular study is that of observing a cross-section of clinic cases and their families over a period of time. Data were secured for all cases of tuberculosis supervised by the Bellevue-Yorkville clinic, which were reported or diagnosed during the year 1931.³ The data consist of records for each patient of all examinations and supervision given at the clinic, records of the services rendered by the public health nurse to the case and the family, and records concerning the examination of family con-

³ By 1931 the program of tuberculosis control at Bellevue-Yorkville was well established, consequently the management and supervision of cases and families admitted at that time may be considered as typical of the work for a number of years.

tacts of each patient. All records of clinic supervision cover the period from the date of diagnosis (sometime during 1931) to September 1, 1933; those for the nursing service include the same period and an additional five months, that is, to February 1, 1934. Records were secured also for a sample (311 cases) drawn at random from the alphabetical file of the total clinic cases examined during 1931 and found to be negative for tuberculosis.

It should be emphasized that a study of the effectiveness of administrative procedure in the control of tuberculosis in any area includes much more than a study of clinic management. Such a study should deal with administration in its broader aspects and should throw light upon the degree to which the problem in the particular area is being modified through successful case-finding, and adequate supervision of cases and their contacts, both in the clinic and in the home. It involves both qualitative and quantitative evaluation of the work of the clinic physician and the public health nurse. The discussion of the tuberculosis work of the Bellevue-Yorkville Health Center will be clarified by a brief description of how the general administration of tuberculosis in the Borough of Manhattan operated.

ADMINISTRATION OF TUBERCULOSIS IN NEW YORK CITY

The tuberculosis clinics of the Department of Health of the City of New York under the Division of Tuberculosis were set up in various districts not served by hospital dispensaries chiefly to provide diagnostic and supervisory centers for the cases of tuberculosis not able to pay for the care of a private physician. They were used also as diagnostic centers for the examination of contacts and for general case-finding. The physicians who were employed for the work in the clinics usually served three clinic sessions, or a total of six hours a week. The public health nursing service in the various districts was directed from the central office of the Bureau of Nursing through the assistance of the superintendents

of the various services and the local supervisors in each district.

Individuals who have pulmonary tuberculosis were reported to the Borough office by private physicians, institutions, and other agencies within twenty-four hours after the diagnosis had been made.⁴ The Borough office sent daily to the district office a list of all newly reported cases. These reports did not pass through the hands of the physician in charge of the district clinic but were sent to the district office of the Bureau of Public Health Nursing. A current register of the tuberculosis cases in the district classified according to the medical supervision which they were receiving was kept by the public health nurses and visits were made to reported cases according to a routine set up by the Division of Tuberculosis in cooperation with the Bureau of Nursing of the New York City Department of Health.⁵

⁴ Section 86 of the Sanitary Code of the Board of Health of the City of New York states that it should be the duty of every hospital, institution, dispensary, or physician to report the full name, age, and address of every patient under their care within twenty-four hours after the time the patient has been diagnosed as ill with pulmonary tuberculosis.

⁵ Patients who have been diagnosed as having pulmonary tuberculosis are classified into seven groups, according to the medical supervision which they are receiving.

1. *Department of Health Clinics*: Includes patients under the care of a Health Department tuberculosis clinic. Visits are made every month to patients having positive sputum and every two months to those having negative sputum.

2. *Non-Department of Health Clinics*: Includes patients under the care of a non-Department of Health tuberculosis clinic which is a member of the Association of Tuberculosis Clinics. One visit only is made for the purpose of locating the patient and making out Health Department records.

3. *Hospital*: Includes patients who are being cared for in city-administered hospitals or hospitals subsidized by the City. Routine visits are made to the homes of these patients every three to six months, according to the information obtained.

4. *Sanatorium and Out of Town*: Includes patients whose known temporary residence is outside New York City. The patients may or may not be in hospitals or sanatoria. Visits are made to the New York City address every three to six months, depending on the information obtained.

5. *Private Physicians*: Includes all those patients who have been reported as having pulmonary tuberculosis by private physicians and who are reported every two months by private physicians to be continuing under their care. Visits are made only when the physician requests the nurse to visit. Forms are sent to each private physician when he reports a tuberculous patient, explaining the nurses' services and giving him an opportunity to request the service. Patients who are employees of the New York Telephone Company or the Metropolitan Life Insurance Company, or the Medical Service Club, or who are under the care of the Committee for the Care of the Jewish Tuberculous are listed as private physician's cases.

6. *At Home*: Includes patients who have been diagnosed by a physician as having pulmonary tuberculosis but who have ceased to be under any medical supervision. Positive sputum cases in this group are visited once a month or oftener if necessary and negative sputum cases every two months. Every effort is made to get the patient again under care if he is ill. When the patient is found to be apparently well, every effort is made to persuade him to report to a physician or to a clinic for reexamination and possible discharge.

7. *Not Found*: Includes reported cases which cannot be located. These cases are visited once every month for three months if necessary in the effort to locate the patient. If unsuccessful, inquiries are made at the Post Office for correct addresses. If the patients still cannot be located, their records are removed from the active file.

From the description above it can be seen that the direction or supervision of administrative work of tuberculosis control was highly centralized in the Borough office. The responsibility for carrying out procedures for the control of tuberculosis in the district was placed primarily on the public health nurse and the physician in charge of the clinic was not informed as to the extent of the problem among the population in the district. This was due no doubt to the fact that in most districts in the City the diagnostic and medical work in tuberculosis was carried by physicians working only part-time.

THE TUBERCULOSIS PROBLEM IN THE DISTRICT

Among the residents of Bellevue-Yorkville district, 570 new cases of pulmonary tuberculosis were reported during 1931. Less than 5 per cent of these cases were discovered by means of the district clinic and only about 10 per cent had any contact with the clinic, either supervisory or diagnostic.

Data are not available to show how the total 570 new cases were discovered. An analysis of the 151 cases, however, who were residents of Bellevue-Yorkville district and who died during 1932, revealed that 106, or 70 per cent, were first diagnosed and reported from a hospital where they were ill with tuberculosis.⁶ (These data are exclusive of individuals who gave the municipal lodging house as the place of residence.) In other words, the majority of these cases were not discovered until they were too ill for medical care or supervision to be of much benefit. This points unmistakably to a serious need for improved case-finding activities.

During the year 1931, 193 new cases of tuberculosis were admitted to the chest clinics.⁷ Twenty-three of these cases came to the pneumothorax refill clinic and 22 of them came from outside

⁶ Unpublished data furnished by Mr. Savel Zimand, administrative director of the Bellevue-Yorkville Health Center.

⁷ A consultation service for the use of practicing physicians who wish to send patients unable to afford a private consultation service was maintained but its service was not included in this analysis.

Bellevue-Yorkville district.⁸ Slightly more than half of the remaining 170 cases came from districts other than Bellevue-Yorkville. If cases of adult pulmonary tuberculosis alone be considered, approximately two-thirds of the total 152 cases were residents of other sections of New York City. Of the 58 new cases of pulmonary tuberculosis who were residents of the district, 26 were discovered through the medium of the clinic and 32 were diagnosed elsewhere and referred for supervision.

In view of the evidence of unmet problems in the district, and of the fact that 18 per cent of the total 570 new cases reported among residents in the Bellevue-Yorkville district were under neither medical nor clinic supervision, the policy of carrying cases from various sections of New York for supervision might be questioned.⁹ Furthermore, tuberculosis is a family problem as well as a community problem, and for the most effective supervision and treatment of the case the family situation must be considered. For cases from outside the district, no record of the family situation relative to economic status, living conditions, examination of family contacts, etc., was available at the Bellevue-Yorkville clinic.¹⁰

CASE FINDING

Amberson has said “. . . the measure of practical effectiveness of any case-finding scheme can be expressed in terms of the percentage of early cases discovered.”¹¹ He points out also that, “in 1932 in New York City, among 3,686 new active cases admitted to and diagnosed in the tuberculosis clinics, 71 per cent were found

⁸ The pneumothorax clinic was set up by the Department of Health as an evening clinic and, being the only one of that sort, was intended to serve a need for the entire City.

⁹ X-ray and fluoroscopic examination facilities were made a part of the tuberculosis clinic equipment. Such facilities were not available generally in the district clinics of the City and this fact may have been instrumental in determining the policy of supervising cases from other sections of New York.

¹⁰ At the beginning of 1933 a change in policy was made restricting clinic cases to Yorkville district only. This change was made necessary because of reduced personnel.

¹¹ Amberson, J. Burns: Some Case Finding Principles of Practical Significance, *Journal of the Outdoor Life*, September, 1934, xxxi, No. 9.

CLASSIFICATION AS TO SOURCE	TOTAL CASES	TYPE OF TUBERCULOSIS		
		Adult Pulmonary	Childhood Type	Other Forms
		PER CENT		
Reported cases	100.0	91.4	8.6	0
Cases diagnosed in clinic	100.0	54.2	45.8	0
		NUMBER		
Reported cases	35	32	3	0
Cases diagnosed in clinic	48	26	22	0

Table 1. Reported cases and cases diagnosed in clinic classified according to type of tuberculosis, Bellevue-Yorkville Clinic—1931.

on their first visit to have second or third stage disease." If this classification be applied to the total 130 cases of pulmonary tuberculosis admitted to Yorkville clinic during 1931, for 62 per cent the disease was moderately advanced or advanced compared with 71 per cent for New York City. If only cases from Bellevue-Yorkville district be considered, 55 per cent of the cases admitted to clinic were classed as moderately advanced or advanced.

Table 1 shows for Bellevue-Yorkville district the reported cases and those diagnosed in clinic classified according to type of tuberculosis. It is clearly evident that the clinic has been instrumental in discovering and placing under supervision cases of childhood type tuberculosis. These cases are not discovered without X-ray and are not reported.

During 1931 there were 1,048 persons examined for the first time in the Bellevue-Yorkville chest clinic. These individuals were referred for various reasons by public health nurses, social agencies, and

Table 2. Source of referral for 955 clinic cases.

Referring Agency	Number	Per Cent
TOTAL CASES	955	100.0
<i>Referred by:</i>		
Nurse	465	48.7
Private physician	67	7.0
Social agency	130	13.6
Self ¹	225	23.6
Others	68	7.1

¹ Individuals who came of their own accord.

REASON FOR REFERRAL	REFERRING AGENCY			
	Nurse	Private Physician	Social Agency	"Self"
	PER CENT			
TOTAL	100.1	100.0	100.1	100.1
Contact	37.9	35.0	30.8	11.8
Symptoms	18.6	30.0	43.6	45.6
Other illness	15.7	25.0	15.4	30.9
No reason given	27.9	10.0	10.3	11.8
	NUMBER			
TOTAL	465	67	130	225
Contact	176	23	40	26
Symptoms	86	20	57	103
Other illness	73	17	20	70
No reason given	130	7	13	26

Table 3. Clinic cases referred by nurse, private physician, social agency, and "self" classified according to the reason for referral.

private physicians. Ninety-three were registered cases of tuberculosis previously diagnosed and were referred to the clinic through official channels. Table 2 shows the distribution of the remaining 955 cases according to the referring agency. Approximately half, or 49 per cent, was referred by the nurses, 24 per cent came of their own accord, 14 per cent was sent by a social agency, and 7 per cent by private physicians.¹²

Table 3 shows the clinic cases referred by nurse, private physician, social agency, and "self" classified according to the reason for referral. As would be expected, the largest number (38 per cent) of the 465 persons referred by nurses was asked to come to clinic because of contact with tuberculosis. Nineteen per cent was referred because of symptoms of tuberculosis, 16 per cent because of "other illness," and for 28 per cent of the total cases no reason for coming to clinic was given. The persons referred by

¹² The private physicians rarely referred patients to the particular clinic under discussion because there was a special consultation clinic maintained especially for their use at Bellevue-Yorkville.

REFERRING AGENCY	TOTAL	CONTACT	SYMPTOMS	"OTHER ILLNESS"	NO REASON STATED
DIAGNOSED CASES PER 100 PERSONS EXAMINED					
TOTAL	9.2	12.1	16.9	0.6	2.3
Nurse	9.0	13.6	17.4	0	0
Private physician	16.4	17.4	35.0	0	7.7
Social agency	11.5	7.5	17.5	5.0	0
Self	6.2	3.8	12.6	0	2.3
NUMBER EXAMINED					
TOTAL	887	265	266	177	176
Nurse	465	176	86	72	129
Private physician	67	23	20	16	7
Social agency	130	40	57	20	13
Self	225	26	103	69	27

Table 4. Tuberculosis case rate among clinic cases examined because of contact, symptoms of tuberculosis, or "other illness."

private physicians were fairly evenly distributed as to reason for the clinic examination; from 35 to 25 per cent was examined because of contact or illness suggestive of tuberculosis or "other illness." Forty-four per cent of those sent by a social welfare agency came because of symptoms of tuberculosis, 31 per cent because of contact, and only 15 per cent because of "other illness." Approximately half of the 225 persons who came of their own accord for a clinic examination came because of illness suggestive of tuberculosis, 31 per cent because of "other illness" and only 12 per cent came to clinic because of contact with tuberculosis.¹³

It is important to know among what groups the new cases of tuberculosis were found. Table 4 shows the rate of diagnosed cases among persons examined (1) because of contact, (2) because of symptoms of tuberculosis, (3) "other illness," and (4) those for whom no reason was stated. The highest rate of tuberculosis,

¹³ Under "symptoms of tuberculosis" have been classed the following complaints: fatigue or worn-out feeling, loss of weight, cough with or without sputum, dyspnea, hemorrhage, fever, night sweats, and cold of unusual duration (two weeks or longer). The following complaints have been classed as "other illness": pain in back, side, or abdomen; gripe; acute cold; indigestion; and dizziness.

namely, 16.9 per cent, was found among those referred because of symptoms. A slightly lower rate (12 per cent) was recorded for contacts. By contrast, a relatively low rate of tuberculosis (0.6 and 2.3 per cent) was found among individuals who came to clinic because of "other illness" or for whom no reason was stated. The cases of tuberculosis found among these latter groups were classed as "healed" tuberculosis on diagnosis and were carried less than two months for supervision by the clinic. The important cases of tuberculosis were found among 60 per cent of the total persons examined. It is plainly evident that there are two groups of individuals with whom the tuberculosis clinic should be mainly concerned, contacts to known cases and persons with symptoms suggestive of tuberculosis.

EXAMINATION AND SUPERVISION OF CONTACTS TO TUBERCULOSIS CASES

One of the most important procedures for the control of tuberculosis is the examination and supervision of the contacts of infectious cases. Family contacts are examined and supervised in order to ascertain the amount of tuberculosis among the family members and through sanitary and hygienic teaching to prevent further spread of the disease. Securing the examination of family contacts and the teaching of health measures, especially in the home, is considered the responsibility of the public health nurse. However, the clinic physician has an unusual opportunity which had not been fully utilized for facilitating the work of the nurse through education of the patient in the clinic as to health measures and the importance of the examination of the family contacts.

Since the Bellevue-Yorkville clinic had no records of the examination of contacts of cases who came from other districts in New York, the discussion dealing with the examination of family contacts necessarily must be confined to cases within the district. Table 5 shows that 54.5 per cent of the contacts in 43 families in

which there was a case of adult pulmonary tuberculosis was examined. When the contacts are classified by age, 70.6 per cent of those less than 20 years of age was examined compared with 37.5 per cent of those 20 years of age or older. Attention should be called to the fact that for these families we have a minimum period of observation of eighteen months and a

Table 5. Per cent of contacts examined in 43 families in which there was a case of adult pulmonary tuberculosis.

Age Groups	Total Contacts	Number Examined	Per Cent Examined
ALL AGES	132	72	54.5
0-19	68	48	70.6
20+	64	24	37.5

maximum of thirty months from the time the primary case was reported or diagnosed. With this fact in mind, the examination rate for adult contacts seems low.

The examination of contacts in 18 families where the primary case was childhood tuberculosis is shown in Table 6. Only 32 per cent of the total contacts was examined; 41 per cent of the 44 persons under 20, and 23 per cent of those over 20 years of age. Since the chief purpose of the examination of contacts in these families is to find the source of infection, emphasis should be placed upon the examination of the adult members of the families where infectious cases of tuberculosis are more apt to occur.¹⁴

Table 6. Per cent of contacts examined in 18 families in which the primary case was childhood type.

Age Groups	Total Contacts	Number Examined	Per Cent Examined
ALL AGES	84	27	32.1
0-19	44	18	40.9
20+	40	9	22.5

Seven cases of childhood type and one case of minimal adult pulmonary tuberculosis were di-

agnosed among the 72 contacts examined in the 43 families with a case of adult pulmonary tuberculosis, or a rate of 11 per 100

¹⁴ Families in which the primary case is one of childhood type tuberculosis do not come under the usual routine of the public health nurse in New York City. However, the examination of contacts in these families was set up as a part of the routine for Bellevue-Yorkville district, since there, much emphasis was being placed upon childhood tuberculosis as an important part of tuberculosis control.

AGE GROUPS	TOTAL	RECOMMENDATIONS						
		Revisit	Disch.	No Recom.	Med. Cl.	Cardiac Cl.	Trans. to Other Dist. Cl.	Nose & Throat Cl.
ALL AGES	94	27	50	12	1	1	2	1
0-4	6	1	2	1	1	0	1	0
5-14	11	5	4	2	0	0	0	0
15-19	20	5	9	5	0	0	1	0
20+	57	16	35	4	0	1	0	1

Table 7. Recommendations of the physician for 94 contacts who were found negative on clinic examination, 1931.

persons examined. One case of childhood type tuberculosis was diagnosed among the 27 contacts examined in the 18 families, or a rate of 4 per 100 persons examined.

As a matter of routine all contacts are supposed to be examined every six months and are notified by postcard to that effect rather than solely by means of a nursing visit. However, a sample of 94 contacts, selected at random from the files, had an average of one examination during a period of observation of from eighteen to thirty months. On the other hand, the contacts in a group of tuberculous families studied made from three to four visits to clinic a year. (This group was weighted by child contacts and the former group by adult contacts.)

The physicians' recommendations for the 94 contacts classified by age are shown in Table 7. A return visit to clinic was recommended for 27 contacts, 50 were discharged, for 12 there was no recommendation, attendance at special medical clinics was recommended for 3, and 2 were transferred to clinics in other districts. For all of these contacts exposure to tuberculosis was continuing or had been recent. There was no evidence from the clinic records that the physician, in making recommendations for the clinic supervision of contacts, took into account more than the medical findings of the individual patient at the time of examina-

tion. Other facts which might well be used as an aid by the physician in determining the necessity for close and continued supervision are: the probable duration of exposure to the infectious case in the family; the factor of continuing exposure; the intimacy of contact, and the age of the individual under consideration. None of these facts, except age, can be obtained from the individual clinic record and the records for other members of the family were not assembled. Consequently, the physician was dealing only with the individual patient and not with the tuberculous family as a group. It is obvious that not all contacts need to be examined every six months and that some contacts, especially infants and children of preschool age, may need more frequent examinations for a period of time. Such a routine measure applying to all contacts undoubtedly produces much wasted effort rather than efficiency.

SUPERVISION OF TUBERCULOSIS CASES AND THEIR FAMILIES

Ordinary routine records are not sufficient for a complete evaluation of the educational work of the clinic physician and the public health nurse. However, the amount of supervision as indicated by the frequency of clinic examination of cases and of home visits of the nurses can be appraised from available records. Also, the examination of family contacts may be used as an objective measurement of the success with which the supervision, both by the doctor and the nurse, is carried out. Forty-seven cases of adult pulmonary tuberculosis reported or diagnosed during 1931 were carried for supervision both by the clinic and the public health nurses. Twenty-four of the 47 cases were carried for clinic supervision less than three months for the following reasons: hospitalization or sanatorium care was recommended for 11 cases; six were discharged as healed tuberculosis needing no further care; two cases were transferred, one to the care of a practicing physician and the other to another district; one case was dis-

CLASSIFICATION AS TO LENGTH OF TIME OF SUPERVISION	TOTAL CASES OR FAMILIES	NUMBER OF VISITS PER YEAR					
		2 or 3 Visits	4 or 5 Visits	6 or 7 Visits	8 or 9 Visits	10, 11 or 12 Visits	More than 12 Visits
CLINIC SUPERVISION OF CASES							
TOTAL	23	6	8	8	0	1	0
Cases under supervision more than 3 mos. but less than 1 year	3	1	2	0	0	0	0
Cases under supervision from 1 to 2 years	20	5	6	8	0	1	0
NURSING SUPERVISION OF FAMILIES							
TOTAL	23	1	0	7	0	7	8
Families under supervision more than 3 mos. but less than 1 year	2	1	0	0	0	0	1
Families under supervision from 1 to 2 years	11	0	0	5	0	2	4
Families under supervision more than 2 years	10	0	0	2	0	5	3

Table 8. Annual number of clinic examinations for 23 tuberculosis cases and home visits by public health nurses to their families.

charged for nonattendance; and for four cases there was no record of any recommendation made by the clinic physician.

Table 8 shows the visits to clinic and the nursing visits in the home for the 23 cases who had more than three months' supervision. Even though 23 cases or families seem a small number from which to judge administrative procedure, the length of the period of observation for the majority of the cases (from one to three years) is sufficient to give some weight to the results. Twenty of the cases were under clinic supervision from one to two years. Six of these cases had four or five clinic examinations a year, and 8 cases were examined six or seven times per year. The nursing visits for the families of the 22 cases are shown in

the same table. Only 2 of the 23 families were visited by the public health nurse over a period of less than one year. Seven of the 21 families under observation more than one year were visited by the public health nurse six or seven times a year, 7 were visited ten to twelve times a year, and another 7 families were visited more than twelve times a year. (These are visits to the home and not visits to individuals.) Such intensive supervision of tuberculosis cases by both the clinic and the public health nurse may be questioned. Only 4 of the 23 cases had a positive sputum and it should be emphasized that the cases undoubtedly needing close supervision, those for whom hospital or sanatorium care was recommended, have been excluded from the table.¹⁵

CONCLUSIONS

The following conclusions may be drawn from the data presented in this paper: Knowledge of the tuberculosis problem within the population being served by a clinic such as Bellevue-Yorkville is of fundamental importance in conducting and planning a program for the control of the disease.

There is an evident need for some more effective method of case-finding in the population of the district. Greater efficiency may be obtained by limiting clinic cases to a more highly selected group, namely, contacts to known cases and persons with symptoms suggestive of tuberculosis.

Examination of a higher proportion of the family contacts, especially adults, is desirable. The clinic physician has an unusual opportunity to assist in securing the examination of these contacts through the education of the patient in the clinic as to the nature of tuberculosis and the importance of the examination of the family contacts.

A routine standard for the frequency of examination of family contacts is unsatisfactory. The recommendations for clinic super-

¹⁵ None of the cases included in Table 8 had had or was having pneumothorax therapy.

vision of contacts should be based upon knowledge of exposure to infection in the family as well as the medical findings and age of the individual patient at the time of examination.

It is apparent that a few families were given intensive service both by the clinic and the public health nurse. The question may be raised as to the wisdom of affording such intensive service to a few families when 18 per cent of the new cases reported during 1931 were under neither medical nor clinical supervision.

THIRD PROGRESS REPORT ON A STUDY OF FAMILY LIMITATION¹

by RAYMOND PEARL

I

THERE have been published² two reports on the progress of a comprehensive investigation of human fertility and the factors that influence it, with particular reference to the practice of contraception. These earlier progress reports have dealt only with samples from the material, including respectively 2,000 and 4,945 women.

The purpose of the present paper is to report the general progress of the investigation towards final completion, up to the present date, and to set forth in tabular form and briefly discuss some fragments of the final results. Since the plan and method of the investigation have been fully described in the earlier reports cited it will not be necessary to repeat them here.

II

Since the 1934 progress report was published we have *completed* (a) the *coding* of the information on all of the 30,949³ reproductive life histories comprising the total material. This coding was done by the writer personally for each case history and all items of information, except for a few routine items for which the code numbers

¹ From the Department of Biology of the School of Hygiene and Public Health, The Johns Hopkins University. Presented at the Annual Meeting of the Milbank Memorial Fund, March 26-27, 1936.

² Pearl, R.: Preliminary Notes on a Cooperative Investigation of Family Limitation. Milbank Memorial Fund *Quarterly Bulletin*, January, 1933, xi, No. 1, pp. 37-60. Second Progress Report on a Study of Family Limitation. *Ibid.*, July, 1934, xii, No. 3, pp. 248-269.

The two reports cited were condensed abstracts of longer papers as follows: Pearl, R.: Contraception and Fertility in 2,000 Women. *Human Biology*, September, 1932, iv, No. 3, pp. 363-407; Contraception and Fertility in 4,945 Married Women. A second report on a study of family limitation. *Ibid.*, May, 1934, vi, No. 4, pp. 354-401.

The author wishes to acknowledge with deep gratitude the continued financial support the Milbank Memorial Fund has given to this work.

³ Instead of 30,951 stated to be the total number in an earlier report. One case history turned out to have been included in duplicate. The other extra "case" was the result of an error in serial numbering, and did not exist in fact.