

# A STUDY OF FOOD HABITS OF TUBERCULOUS FAMILIES IN A HARLEM AREA OF NEW YORK CITY<sup>1</sup>

JEAN DOWNES

IT is generally believed that an adequate diet may improve general health and help to increase nonspecific resistance to infection. Consequently, improvement in the dietary levels of families which have been exposed to infectious tuberculosis has been one of the points of emphasis in an experimental program of control of the disease among Negroes in an area of Upper Harlem. This report describes the quality of the diets of the tuberculous families and the changes in quality brought about during a period of public health nursing supervision.

The special program for control of tuberculosis was set up in an area of Upper Harlem, comprised of some thirty-five city blocks. Thirty-two thousand Negroes in 8,500 household units live in this area. The families of all active or recently active cases of tuberculosis in the area are being given intensive public health nursing and clinic supervision.

Dr. Herbert R. Edwards, Director of the Bureau of Tuberculosis, is medical director of the study. The medical staff of the tuberculosis clinic is provided by the Department of Health. The nursing and clerical staffs are provided by the Community Service Society. The nurses represent the Department of Health and are responsible for the public health nursing care of the tuberculous patients and their families. The nurses who do the home visiting also serve in the clinic.<sup>2</sup>

<sup>1</sup> From the Community Service Society, the New York City Department of Health, and the Milbank Memorial Fund.

<sup>2</sup> The nursing and clerical staffs of the tuberculosis clinic were provided by the Department of Health after December 1, 1941. Nursing supervision of the clinic was provided by the Community Service Society until October 1, 1942.

## DATA AND METHOD OF STUDY

Detailed records concerning the social and economic condition of each family are being obtained and the families are visited at fairly frequent intervals for public health supervision and to note any changes in environmental conditions. The data which are particularly pertinent to this report are as follows:

Each month of the first year that the family was under public health nursing supervision a record was obtained indicating the amount of money spent for food during the previous week and the amount or frequency of use of the following foods:

- (1) Amount of milk
- (2) Number of eggs
- (3) Citrus fruits and kinds of other fruits
- (4) Green and yellow vegetables
- (5) Lean meats, fish, and poultry

It was believed that these records would reveal habits of the family with respect to the use of certain types of food and would indicate whether or not there were outstanding deficiencies in the quality of the diet. Where such deficiencies were noted the record was to serve as a guide for the need of intensive teaching in regard to the use of certain protective foods. These records were secured from each family at monthly intervals over a maximum period of twelve months.

The families included in this special study of food habits constitute a cross-section of the total families which have had nursing supervision since the program began on April 1, 1939. All families under supervision in December, 1941, have been included, provided the tuberculosis case which brought the family into the study was a member of the family and not a lodger in the household. Families in which the index case was a lodger, that is, a person unrelated to those responsible for the household unit, have been excluded.

In December, 1941, there were 215 families which fulfilled the

requirements for the study of food habits.<sup>3</sup> A previous report on the special program has indicated that the tuberculous families under supervision in Upper Harlem are in certain respects fairly representative of the 8,500 households from which they are drawn.<sup>4</sup> The average size of the household was the same as the average for the entire area, namely, 3.8 persons per household. The average amount of rent, \$33 per month, was somewhat lower than the average (\$37) for the area as a whole. The prevalence of crowding was greater in the tuberculous families. Twenty-four per cent of the 8,500 households had more than one person per room; 40 per cent of the families in the special study had more than one person per room.<sup>5</sup>

The qualitative food records secured from the family made it possible to grade the food habits of each family according to the extent of deviation from a dietary pattern prepared by the Committee on Food and Nutrition of the National Research Council which meets recommended frequency in the use of important food groups. The habits of use of each of the five types of food, (1) milk, (2) eggs, (3) citrus fruits and tomatoes, (4) green and yellow vegetables, and (5) lean meats, were classified according to the following categories: "excellent," "good," "fair," and "poor." The recommended dietary pattern used as a standard, and a detailed description of the content of the four categories for each food group, are shown in the Appendix. "Excellent" for the food items indicated a frequency of use equal to that recommended, and "good" was slightly below. "Fair" and "poor" described degrees considerably below recommended use of the food groups needed for the diet to be of good quality.

A combination of the ratings for each of the five types of food

<sup>3</sup> In a total of 229 families the tuberculosis case (index case) was a member of the family. Fourteen families were excluded because of refusal to give information concerning food habits.

<sup>4</sup> Downes, Jean and Price, Clara R.: The Importance of Family Problems in the Control of Tuberculosis. *The Milbank Memorial Fund Quarterly*, January, 1942, xx, No. 1, pp. 7-22.

<sup>5</sup> Data from the residential census, Real Property Inventory—City of New York—Borough of Manhattan, Residential Report, 1934.

make possible a composite rating of the quality of the dietary pattern of each family. This composite rating gives equal weight to each of the food groups considered and is described in the Appendix.

Before the data on use of different foods are discussed, it will be helpful to consider the significance of the recommended foods with reference to their contribution to a balanced diet with adequate amounts of various essential nutrients. Although some of the essential nutrients are distributed in nature in many different foods, several are present in appreciable amounts in only a few foods. An important example of the latter is ascorbic acid. Citrus fruits and tomatoes are very good sources of this vitamin, and although a few other foods also are moderately good sources, most diets will contain insufficient amounts of ascorbic acid unless a citrus fruit or tomato is included regularly in the diet. The vitamin A allowance can be obtained from various combinations of foods; nevertheless, a green or yellow vegetable of high vitamin A content usually is essential because it can be replaced satisfactorily only by an exceptionally large consumption of dairy products. The amount of milk daily which is recommended not only is needed to assure a good source of calcium and to supplement the vitamin A from vegetables, but also is almost indispensable for obtaining the amount of riboflavin which is considered necessary. Meat is the next best source of riboflavin, but some methods of cooking destroy a large percentage of the riboflavin, and only those who eat exceptionally large quantities of lean meat daily are likely to have an adequate amount of riboflavin unless milk is included in the diet. Meat is the best source of niacin (nicotinic acid). Thiamin is rather widely distributed in foods, but not in concentrated amounts. Milk, meat, and some vegetables are fairly good sources of thiamin, but there may be considerable loss from cooking. Eggs are not the most important source of any of the nutrients, but they are a good source of several vitamins as well as of iron and protein. The regular con-

sumption of eggs, therefore, is desirable as a supplement to other foods. Thus, it is apparent that a regular and adequate supply of the principal vitamins and minerals under most circumstances can be obtained best by the consumption each day of a green or yellow vegetable, a citrus fruit or tomato, two glasses of milk or equivalent, an egg, and a serving of lean meat. Whole grain cereal food or bread is important in the diet, but information as to its use was not included in this study. Other food combinations can be used to obtain complete nutritional protection, but as a rule, only very specially planned diets furnish all the necessary nutrients when these varieties of foods are not included. The total diet should include some foods not discussed, especially butter or fortified oleomargarine, and potatoes, and an amount of food sufficient to furnish the required energy value.

The records of foods used by the families studied contain mostly non-quantitative data. They show food choices of the family as a whole and indicate fairly well the possibility of certain dietary deficiencies. These facts should be stressed and kept in mind in the interpretation of the data presented in this study.

#### QUALITY OF THE FAMILY DIETS

It was considered of interest to see whether or not the dietary pattern of the families in Area 8 of Upper Harlem differed greatly from that of families living in other areas of Harlem. Consequently, qualitative food records for one week were secured for a sample population composed of 113 tuberculous families living in Central Harlem, Lower Harlem, and Area 7 of Upper Harlem. Table 1 shows the ratings on food habits of the families in Area 8 of Upper Harlem compared with the ratings of families from other parts of Harlem. On the whole, the distribution of the families according to their ratings on food habits was fairly similar for both groups. Seventy-one per cent of the families in Upper Harlem had food habits considerably below the recommended standard of frequency, compared with 77 per cent in that class in the other areas of Harlem.

CLASSIFICATION OF FAMILY DIET	PER CENT		NUMBER OF FAMILIES	
	Upper Harlem	Other Areas of Harlem	Upper Harlem <sup>1</sup>	Other Areas of Harlem
TOTAL FAMILIES	100.0	100.0	202	113
Excellent	9.4	5.3	19	6
Good	19.8	17.7	40	20
Fair	36.1	30.9	73	35
Poor	34.7	46.1	70	52

<sup>1</sup> Includes only families where a food schedule was obtained on the first visit to the family.

Table 1. Ratings on food habits for families in Upper Harlem compared with families in other areas of Harlem.

Relatively few families in either group had food habits which met the qualitative standard of adequacy. It is apparent that a high proportion of the tuberculous families in Harlem were in need of instruction concerning a diet of good quality.

The data for all families shown in Table 1 are based on food records for one week secured on the first visit to the family. For the rest of the analysis in this report the data are averages based on food records for two or three weeks. In some families instruction as to a proper diet was started at the time of the first visit, and improvement in food habits was noted on the second or third visit. Consequently, ratings based on averages of the first three months of supervision are somewhat better than the ratings based on records for the first visit only.

Table 2 shows the ratings of food habits for families in Upper Harlem according to size of family. Size of family is expressed in adult cost units. It is apparent that size of family did not affect the quality of food choices: 65 per cent of the families with one adult and one or two children, or two adults and one or no child (1.39-2.74 adult cost units) had a dietary pattern considerably below the recommended standard; 64 per cent of the families of larger size were in the same classes, that is, "fair" and "poor."

CLASSIFICATION OF RATINGS ON FOOD HABITS	TOTAL FAMILIES	SIZE OF FAMILY IN ADULT COST UNITS		
		1.00 OR LESS	1.39-2.74	2.75 and Over
PER CENT				
TOTAL	100.0		100.0	100.0
Excellent	9.8		8.8	9.2
Good	26.0		26.5	26.6
Fair	41.4		40.2	42.2
Poor	22.8		24.5	22.0
NUMBER				
TOTAL	215	4	102	109
Excellent	21	2	9	10
Good	56	0	27	29
Fair	89	2	41	46
Poor	49	0	25	24

Table 2. Rating on food habits of 215 families at the time of the first visits to the family and according to size of family—Upper Harlem area of New York City.

Table 3 shows the distribution of the families according to the presence of the husband and wife in the household. In 204 families, or 95 per cent of the total, the wife was present; however, in 23 per cent she was ill or had recently been ill with tuberculosis. The husband was present in 145, or 67 per cent, of the total families; in 44, or 30 per cent of these families, he was ill or had recently been ill with tuberculosis.<sup>8</sup> It is apparent that in most of the families there was an adult who could take some responsibility for food habits of the family group.

The housewife is usually the one responsible for the kind of foods consumed by the family. Types of food and quantity of food which make up the family food supply, are also determined to a considerable extent by the amount of the family income that can be spent for food. On a low income where quantity of food is the first con-

<sup>8</sup> The husband or wife is counted as present in the household even though out of the household at some time during the period of study because of illness from tuberculosis.

CLASSIFICATION OF FAMILIES	PER CENT	NUMBER OF FAMILIES	
TOTAL FAMILIES	100.0	215	
Husband and Wife Present	63.3	136	
Neither Tuberculous	28.4	61	
Husband Tuberculous	19.3	41	
Wife Tuberculous	14.7	32	
Both Tuberculous	0.9	2	
Wife Only Present	31.6	68	
Not Tuberculous	26.1	56	
Tuberculous	5.5	12	
Husband Only Present	4.1	9	
Not Tuberculous	3.6	8	
Tuberculous	0.5	1	
Neither Husband nor Wife Present	0.5	1	
Single Individual	0.5	1	

Table 3. Distribution of families according to the presence of the husband or wife in the household—Upper Harlem area of New York City.

sideration, the quality of the diet may suffer. Eighty per cent of the tuberculous families studied received some form of public assistance and many of the nonrelief families were living on incomes below the level considered adequate for maintenance. Furthermore, in some families the housewife was or had been ill with tuberculosis which, no doubt, affected her capacity as manager of the family food supply.

From the data presented showing food habits of the families, it is apparent that many families were in need of instruction concerning a good diet and advice in planning for the wisest use of the food budget. It is apparent also that some families were handicapped because of illness of the housewife. It will be of special interest to study the results of teaching in these families.

#### RESULTS OF EDUCATION AS TO FOOD HABITS

To appraise the results of teaching proper food habits in the families of Upper Harlem it is necessary to limit the number to families supervised for a period of ten to twelve months. Of the



total families under supervision in December, 1941, 166 were suitable for analysis of the results of nutrition teaching. The ratings on food habits of the families in the early part of the period of supervision can be compared with ratings for the same families at the end of the period. Qualitative ratings on two or three visits for each family at the beginning of supervision were averaged and used as a base line from which to measure change. At least six months of supervision must have intervened between the visits when data which constituted the basis for averages were obtained.

Table 4 shows the distribution of the 166 families according to the rating of food habits or dietary pattern of the family at the beginning of the period of supervision, compared with the ratings at the end of the period of study. Some improvement in the food habits of families is evident. The proportion with a dietary pattern equal to the suggested standard increased 58 per cent; those only slightly below the standard increased 40 per cent. The proportion of families with diets classed as "fair" or "poor" in quality decreased; and the most marked decrease was in the group of families with food habits classed as "poor," or very much below the recommended pattern.

Table 4. Comparison of first ratings of food habits of 166 families with ratings for the same families after a minimum of eight months' supervision—Upper Harlem area of New York City.

CLASSIFICATION OF RATINGS ON FOOD HABITS	PER CENT		NUMBER		PER CENT INCREASE OR DECREASE AT END OF PERIOD COMPARED WITH FIRST PART OF PERIOD
	First Part of Period of Supervision	End of Period of Supervision	First Part of Period of Supervision	End of Period of Supervision	
TOTAL FAMILIES	100.0	100.0	166	166	—
Excellent	8.4	13.3	14	22	+58
Good	25.3	35.5	42	59	+40
Fair	41.6	38.6	69	64	-7
Poor	24.7	12.6	41	21	-49

Table 5 shows the families distributed according to the rating on each of the five types of food at the beginning and also at the end of the period of study. At the beginning of the period of supervision, deficiencies in the quality of the diet were noted most frequently for milk, lean meat, and green or yellow vegetables. With respect to citrus fruits and tomatoes, and eggs, 90 per cent of the families studied showed a frequency in their use equal to or only slightly below the frequency advocated for a good diet.

At the end of the period of supervision, improvement was noted in the use of all types of foods studied. However, there were still fifty-six families which used only two quarts of milk per person or less, per week; forty-five families classed as "fair" or "poor" in the use of lean meat; and twenty families which had green or yellow vegetables less frequently than is considered desirable.

In families of low-income status, most careful management of the budget is required in order to have a diet of good quality. Ratings on food habits of families, according to the average weekly amount spent for food during the first part of the period of nursing supervision, show that there is a relationship between the quality of the diet and the amount of money spent for food. These data are presented in Table 6. The families are divided into two groups: Those where the average weekly expenditure for food was equal to or more than the estimated amount required; and those where the weekly expenditure was less than the amount of money estimated as necessary to purchase a good diet.<sup>7</sup>

In the group of families where the amount of money spent on food was less than the amount considered sufficient, 88 per cent of the families had food habits rated either as "fair" or "poor," com-

<sup>7</sup> The standard for the amount of money needed was obtained from the Table of Food Allowances, which is a part of the Schedule for Planning Budgets, issued by the Community Service Society for use by members of its staff. The Schedule for Planning Budgets is issued at intervals and takes account of changes in the cost of food and other items of living which are a part of the family budget. The Table of Food Allowances, dated July, 1941, was the one used as a standard for this study.

In computing the weekly amount of money needed for food, account was taken of the food requirements, by sex, of adults and of children of different ages.

CLASSIFICATION OF RATINGS ON FOOD HABITS	PER CENT		NUMBER	
	First Part of Period of Supervision	End of Period of Supervision	First Part of Period of Supervision	End of Period of Supervision
MILK				
TOTAL	100.0	100.0	166	166
Excellent	34.9	44.0	58	73
Good	19.9	22.3	33	37
Fair	27.7	27.7	46	46
Poor	17.5	6.0	29	10
EGGS				
TOTAL	100.0	100.0	166	166
Excellent	66.9	75.9	111	126
Good	22.9	22.3	38	37
Fair	7.2	1.2	12	2
Poor	3.0	0.6	5	1
CITRUS FRUITS AND TOMATOES				
TOTAL	100.0	100.0	166	166
Excellent	75.9	86.1	126	143
Good	14.5	8.4	24	14
Fair	3.0	2.5	5	4
Poor	6.6	3.0	11	5
LEAN MEAT				
TOTAL	100.0	100.0	166	166
Excellent	26.5	27.7	44	46
Good	36.7	45.2	61	75
Fair	34.4	25.3	57	42
Poor	2.4	1.8	4	3
GREEN OR YELLOW VEGETABLES				
TOTAL	100.0	100.0	166	166
Excellent	53.6	65.7	89	109
Good	24.1	22.3	40	37
Fair	17.5	9.0	29	15
Poor	4.8	3.0	8	5

Table 5. Comparison of first ratings on the use of five food groups recorded for 166 families with ratings for the same families after a minimum of eight months' supervision—Upper Harlem area of New York City.

CLASSIFICATION OF RATINGS ON FOOD HABITS	PER CENT		NUMBER	
	Amount Spent on Food Equal to or More Than Estimated Amount Needed	Amount Spent on Food Less Than Estimated Amount Needed	Amount Spent on Food Equal to or More Than Estimated Amount Needed	Amount Spent on Food Less Than Estimated Amount Needed
TOTAL FAMILIES	100.0	100.0	83	83
Excellent	15.7	1.2	13	1
Good	39.8	10.8	33	9
Fair	34.9	48.2	29	40
Poor	9.6	39.8	8	33

Table 6. Ratings of food habits of families according to average weekly amount spent for food during the first part of the period of nursing supervision—Upper Harlem area of New York City.

pared with 44 per cent in these two classes for the families where the food expenditure was considered satisfactory. It is apparent that a few families (ten) had food habits rated as of good quality even though the amount of money spent was less than that estimated for a good diet. It is also apparent that the expenditure of sufficient money for food does not necessarily insure a diet of good quality. It may be concluded from these data, presented in Table 6, that instruction as to wise expenditure of the money available for food was greatly needed in many families in both groups.

It is of interest to note changes in the quality of the food habits in the two groups of families after a period of nursing supervision. These data are presented in Table 7. Improvement in quality was most marked in the group of families where the average amount spent on food was less than the amount estimated for a diet containing good food choices. Evidently, these particular families received from the nurses more instruction and assistance in planning the food supply. Relatively little change was noted in the ratings of food habits for families which spent on the average the amount of money considered necessary.

CLASSIFICATION OF RATINGS ON FOOD HABITS	PER CENT		NUMBER	
	First Part of Period of Supervision	End of Period of Supervision	First Part of Period of Supervision	End of Period of Supervision
AMOUNT SPENT ON FOOD EQUAL TO OR MORE THAN ESTIMATED AMOUNT NEEDED				
TOTAL FAMILIES	100.0	100.0	83	83
Excellent	15.7	20.5	13	17
Good	39.8	42.2	33	35
Fair	34.9	27.7	29	23
Poor	9.6	9.6	8	8
AMOUNT SPENT ON FOOD LESS THAN ESTIMATED AMOUNT NEEDED				
TOTAL FAMILIES	100.0	100.0	83	83
Excellent	1.2	6.0	1	5
Good	10.8	28.9	9	24
Fair	48.2	49.4	40	41
Poor	39.8	15.7	33	13

Table 7. Comparison of first ratings of food habits of 166 families classified according to weekly amount spent for food with ratings for the same families after a minimum period of eight months' supervision—Upper Harlem area of New York City.

The data presented so far have shown that there was improvement in the food habits of some families during the period of nursing supervision studied. It is now of interest to examine the results of supervision from the point of view of the amount of dietary instruction given to the families by the nurses. The nurses' records of each of their visits to the 166 families afford data for classification of each family according to the frequency that instruction was given to the family.

The nurses' teaching has been classified according to the following categories: (1) Frequent instruction—instruction as to proper diet for the family recorded on at least one-half of the visits made to the family during the period of study. (2) Some instruction, but not frequent—instruction as to proper diet for the family recorded on

less than half of the visits made to the family during the period of study. (3) Instruction as to proper dietary to or for the patient only. (4) No instruction as to food habits or proper diet recorded.

Improvement in food habits of the family can be brought about by instruction from the public health nurse. This is evident from Table 8 which shows the ratings at the beginning and at the end of supervision for the 166 families classified according to the frequency of the nurses' teaching during the period studied. In the families where emphasis was placed upon instruction as to a proper diet, the number classed as "excellent" or "good" increased 33 per cent. This was from approximately three to five times as great an

Table 8. Comparison of first ratings on food habits of 166 families classified according to the amount of dietary instruction given by the nurses with ratings for the same families after a minimum period of eight months' supervision—Upper Harlem area of New York City.

CLASSIFICATION OF PERIOD OF STUDY	TOTAL FAMILIES	CLASSIFICATION OF FAMILY DIETARY PATTERN				INCREASES IN PER CENT RATED EXCELLENT OR GOOD
		Excellent	Good	Fair	Poor	
FREQUENT INSTRUCTION						
At Beginning of Supervision	42	12	7	17	6	33.3
At End of Period of Supervision	42	18	15	7	2	
SOME INSTRUCTION BUT NOT FREQUENT						
At Beginning of Supervision	44	1	11	17	15	6.8
At End of Period of Supervision	44	2	13	25	4	
INSTRUCTION TO OR FOR PATIENT ONLY						
At Beginning of Supervision	36	0	13	14	9	5.6
At End of Period of Supervision	36	1	14	14	7	
NO INSTRUCTION RECORDED						
At Beginning of Supervision	44	1	11	23	9	13.6
At End of Period of Supervision	44	1	17	19	7	

increase in these classes as was noted in the families in any of the other categories where less or no instruction was given. It is apparent that dietary teaching to or for the patient only had little or no effect upon the family dietary pattern. Only two families out of thirty-six in this group showed improvement. Where little instruction was given for the family as a whole, the per cent shifted to a higher rating class was not appreciably different from those families where no dietary instruction was recorded as given.

From the data in Table 8 it is also apparent that the nurses did not always select for frequent instruction as to a proper diet those families most in need of such instruction. For example, at the beginning of the period of supervision there were thirty-nine families with food habits rated as "poor." Only six of these families were in the group given frequent instruction.

The question may be raised as to whether families of very low income and, thus, those most in need of advice from the nurse as to wise food choices, were concentrated among the families supervised by only one or two nurses. The proportion which received some public assistance may be taken as one index of economic status; and the proportion where average food expenditure was less than the adequate amount required, may be used as another. The distribution of families by nurse is shown for each of these indices in Tables

Table 9. Distribution of 166 families according to nursing district and receipt of some form of public assistance—Upper Harlem area of New York City.

CLASSIFICATION OF FAMILIES	ALL NURSES	NURSE				
		A	B	C	D	E
TOTAL FAMILIES	166	33	29	38	35	31
No Public Assistance	53	9	9	11	15	9
Received Some Public Assistance	113	24	20	27	20	22
Per Cent Received Some Public Assistance	68.1	72.7	69.0	71.1	57.1	71.0

CLASSIFICATION OF FAMILIES	ALL NURSES	NURSE				
		A	B	C	D	E
TOTAL FAMILIES	166	33	29	39	35	31
Average Amount Spent on Food Equal to or More Than Estimated Amount Needed	83	18	17	17	14	17
Amount Spent on Food Less Than Estimated Amount Needed	83	15	12	21	21	14
Per Cent Spent Less Than Estimated Amount Needed	50.0	45.5	41.4	53.8	60.0	45.2

Table 10. Distribution of 166 families according to the average weekly amount spent on food and according to nursing district—Upper Harlem area of New York City.

9 and 10, respectively. From 69 to 73 per cent of the families supervised by each of four nurses received some public assistance (Table 9). In the case of one nurse, Nurse D, 57 per cent of the families had public assistance. Table 10 shows no great differences between the five groups with respect to the proportion which had food expenditures less than the amount considered necessary for an adequate diet. The variation in performance of the nurses with respect to dietary education as recorded for the family cannot be attributed to any concentration in a particular nursing district of families in greatest need of instruction.

### SUMMARY AND CONCLUSIONS

The significant points brought out by this study are as follows:

A relatively high proportion of the tuberculous families in Upper Harlem had food habits considered as unsatisfactory and probably indicative of certain dietary deficiencies. Less than 10 per cent of the families studied had dietary patterns corresponding to a recommended standard. Seventy-one per cent were considerably below the standard pattern believed necessary for the maintenance of good



health. After a period of supervision, 51 per cent were in that class.

Perhaps the most important point brought out by the study is that improvement in food habits can be obtained in families under public health supervision where sufficient emphasis is placed upon teaching what constitutes a good diet. Measures for the preservation of good health and for increasing resistance to infection are especially important for family members who have been exposed to tuberculosis. Consequently, teaching with regard to a good dietary pattern for these families may be considered a proper function of the public health nurse.

Another point of some interest is that routine teaching as to the need for a good diet for the tuberculous patient has little or no effect upon the family dietary pattern. The data presented in this study afford only a small sample, but the result shown by the sample seems logical. The tuberculous patient is sick, and recommendations for the treatment of the sick usually are not interpreted as applying to the apparently well. In these families there is an unusual opportunity to teach a preventive measure for the entire family as well as a therapeutic measure for the patient.

#### APPENDIX

Description of qualitative classes used in rating weekly food records.

1. *Rating for Milk Used per Person per Week*

Excellent — 4 quarts or more

Good — 3 quarts

Fair — 2 quarts

Poor — 1 quart or less, no milk used, or unknown amount

2. *Rating for Eggs per Person per Week*

Excellent — 5 or 6 or more eggs

Good — 3 or 4 eggs

Fair — 2 eggs

Poor — 1 or no eggs

3. *Rating for Times Citrus Fruits and Tomatoes Used per Week*

Excellent — 6 or 7 times or more per week

- Good — 4 or 5 times
- Fair — 3 times
- Poor — 2, 1, or no times per week

4. *Rating for Times Yellow or Green Vegetables Used per Week*

- Excellent — 7 times or more per week
- Good — 5 or 6 times
- Fair — 3 or 4 times
- Poor — 2, 1, or no times

5. *Rating for Times Lean Meat Used per Week*

- Excellent — 7 times or more per week
- Good — 5 or 6 times
- Fair — 2, 3, or 4 times
- Poor — 1 or no times

6. *Composite Rating for Five Food Groups*

- Excellent — 5 ratings excellent
- Good — 5 ratings excellent or good
- Fair — 1 or more ratings fair, no rating poor
- Poor — 1 or more ratings poor

The dietary "pattern" to meet recommended allowances outlined by the Committee on Food and Nutrition, National Research Council, is as follows:

Milk—adults—1 pint daily; children—1 quart daily

Vegetables—2 servings daily—1 green or yellow

Fruit—2 servings—1 citrus or tomato daily and 1 other

Eggs—3 or 4 times per week

Meat—1 serving daily

Whole grain or "enriched" cereal and bread—at least half of the intake

Butter or fortified oleomargarine (100-500 calories)

Potato—1 or more servings daily