SEASONAL DIFFERENCES IN CHARACTER OF THE "COMMON COLD" OBSERVED IN TWO COMMUNITIES IN WESTCHESTER COUNTY, NEW YORK

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THE character or clinical description of minor respiratory illnesses experienced in a population over a period of time is of interest to the epidemiologist and to the clinician. A description of the character of these illnesses was included in a three-year study of acute respiratory illness in two communities, Pleasantville and Mt. Kisco, in Westchester County, New York. This report presents an analysis of the clinical description of these illnesses at different seasons during the three school years.

Hanger (1), in a discussion of the etiology of the common cold, said " . . . the common cold is probably not a clinical entity, but comprises a group of different affections. The epidemic form may result from primary bacterial invasion, but in most instances is due to an ultra-microscopic agent. Many are produced by environmental or constitutional factors which lower resistance and allow the common pathogens normally harbored in the upper respiratory tract to invade the mucous membranes." The data from the two communities in Westchester County do not answer questions concerning the etiology of the common cold but they do suggest that at different seasonal periods there may be different invading organisms which are included in the category, the "common cold."

The two communities were fairly comparable with respect to size. According to the 1940 Census, there were 4,454 persons living in the incorporated village of Pleasantville and 5,941 in the village of Mt. Kisco. Sixteen per cent of the population of

[1] From the Milbank Memorial Fund. This is the fourth of a series of papers dealing with a study of respiratory illness over a three-year period in two communities in Westchester County, New York.

In Pleasantville, ultra-violet lights were used in the schools and certain other places where children congregate; Mt. Kisco, with no ultra-violet lights, served as the control community.

Pleasantville were foreign born compared with 21 per cent in Mt. Kisco. In both communities the foreign born were chiefly Italian. Negroes formed a very small proportion of the population in either place; about 1 per cent in Pleasantville and 3 per cent in Mt. Kisco.

Data and Method of Study

The epidemiological field investigation of respiratory illness included the periodic survey of families for the purpose of collection of illness records. All families in which there were one or more children attending grade school or high school in each of the two communities were included in the study. These families were visited every twenty-eight days during the three school years, September to June, 1946–1949. On each visit to the family, inquiry was made about acute respiratory illnesses which had occurred among their members during the past four weeks. Visits were not made during the summer months because it was believed that observation during that period would be incomplete since some children go to summer camps and often the entire family is away from the community for part or all of the summer.

Each family visitor was given a list of the common acute respiratory illnesses expressed in the terminology generally used by a family informant. The list is as follows:

1. Cold, head cold, sneezing attack, sinusitis.
2. Sore throat, tonsillitis, septic sore throat, streptococcus sore throat, pharyngitis, quinsy, laryngitis, hoarseness, swollen cervical glands.
3. Bronchitis, chest cold, tracheitis, croup, cough.
4. Grippe, influenza, intestinal influenza or grippe.
5. Pneumonia, pleurisy, and asthma.
6. Earache with a cold or without a cold, otitis media, running ear, and mastoiditis.

Inquiry was made about the presence or absence of each type of illness among members of the family.

The sickness record included the nature of the illness as

stated by the informant, usually the mother, the date of onset and duration of illness, the onset and duration of disability and the number of days in bed, the amount of medical care and, if hospitalized, the number of days in the hospital.[2]

The sickness record also included (a) the order in which, head, throat, or chest was involved in the illness; and (b) data concerning certain symptoms, that is, whether the illness was accompanied by aching in body or head, by cough, by fever, and by upset stomach, nausea, vomiting, or diarrhea.

It is important to define what is meant by a "case" or "attack of illness" in this study. It is a period of time of one day or longer during which a member of the family was reported to have some symptom of minor respiratory illness. A new or second attack of illness in the same person could start only after recovery from or termination of the illness considered as a first attack.

Acute respiratory illness presented in this analysis includes what may be termed as the "common cold." All cases reported as tonsillitis, septic sore throat, influenza, and pneumonia have been excluded. Cases reported as tonsillitis or septic sore throat constituted 5 per cent of the total illnesses; those reported as influenza constituted another 5 per cent of the total. Even though there can be no certainty as to the accuracy of the diagnosis of the illnesses called influenza, it was considered best to exclude them from this analysis.

The mean number of families visited during the three school years of the special study was 530 in Pleasantville and 570 in Mt. Kisco. The families in Pleasantville included some 2,100 persons and those in Mt. Kisco 2,400. In each group of families there were about 900 school-age children and 180 to 200 pre-school-age children. This analysis includes only the school-age children.

Characteristics of the Two Communities

The two communities were similar in some respects. The

[2] A disabling illness was defined as one which interfered with a person's usual activities.

proportion of families which refused to cooperate was low in Pleasantville and Mt. Kisco; less than 1 per cent asked to be omitted from the study. The age distribution of the population and the median size of family were also similar (2, 3). For example, the median size of family in Pleasantville was 4.88 compared with 4.87 in Mt. Kisco.

There was a definite difference between the two communities with respect to education of the head of the household. Forty per cent of the heads of household in the Pleasantville families had a college education compared with 15 per cent in Mt. Kisco (2, 3).

There was also a marked difference between the two communities when the families were distributed according to the occupational class of the head of household. Fifty-four per cent of the household heads in Pleasantville were in the professional or managerial class compared with 36 per cent in Mt. Kisco (2, 3).

These differences between the two communities have been found to affect the rate of incidence of acute respiratory illness, that is, the number of cases reported (2, 3). The higher the occupational class of the family the higher was the rate of reported illness. The differences were interpreted as due to family attitude toward illness, that is, what is considered as an illness in one family is not necessarily considered so in another family.

It was believed that the factor of occupational class of the family need not be taken into account in a study of the clinical description or character of the reported respiratory illnesses. Consequently, the data for Pleasantville and Mt. Kisco are presented without respect to social class of the family.

Characteristics of the "Common Cold" at Different Seasons

In previous reports a comparison of the two communities was made with respect to the seasonal incidence of acute respiratory illness (2, 3). The illness rates for school-age children in each week of each of the three school years, including the months September to May, are shown in Figure 1. The solid line in-

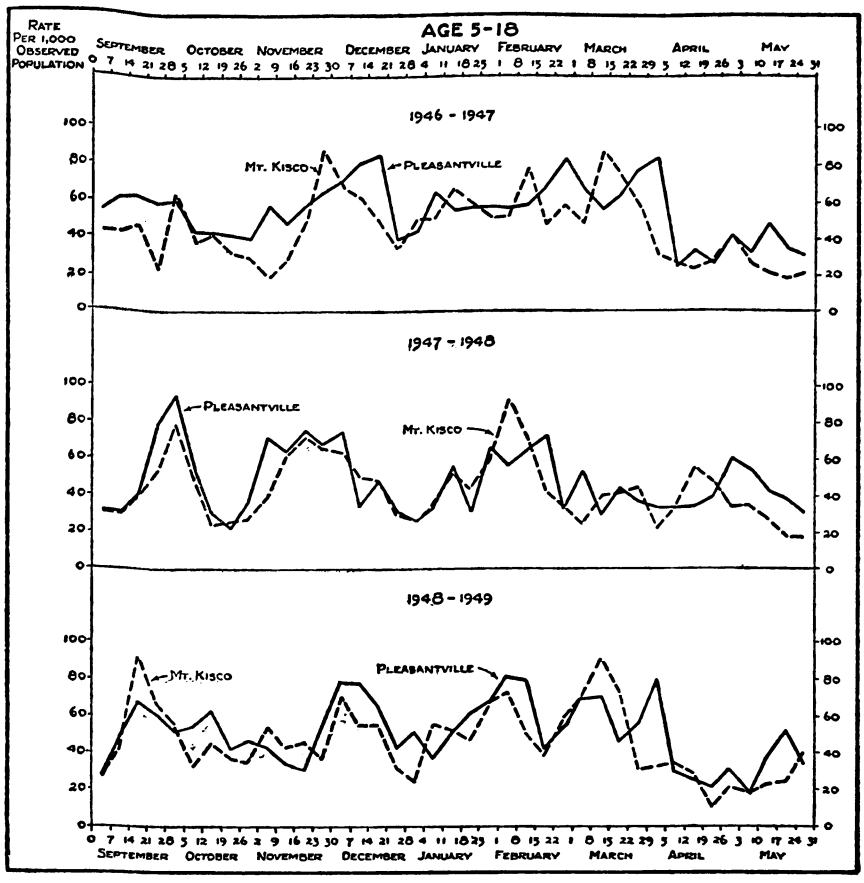

Fig. 1. Weekly incidence of acute respiratory illness among persons aged 5–18 (school ages) in Pleasantville and Mt. Kisco, September to May, 1946–1947, 1947–1948, and 1948–1949. (This Figure is reproduced with the permission of the *American Journal of Public Health.*)

dicates the rates for Pleasantville and the broken line those for Mt. Kisco. From these data there appear to have been what may be termed as four epidemic periods, that is, periods of relatively high incidence of acute respiratory illness: one period in September, the second in November, the third in the latter part of January and February, and the fourth in April or May. These rates are based upon observation of about nine hundred children observed in each week in each community. Consequently, the fluctuations in the weekly rates cannot be attributed to the influence of small numbers.

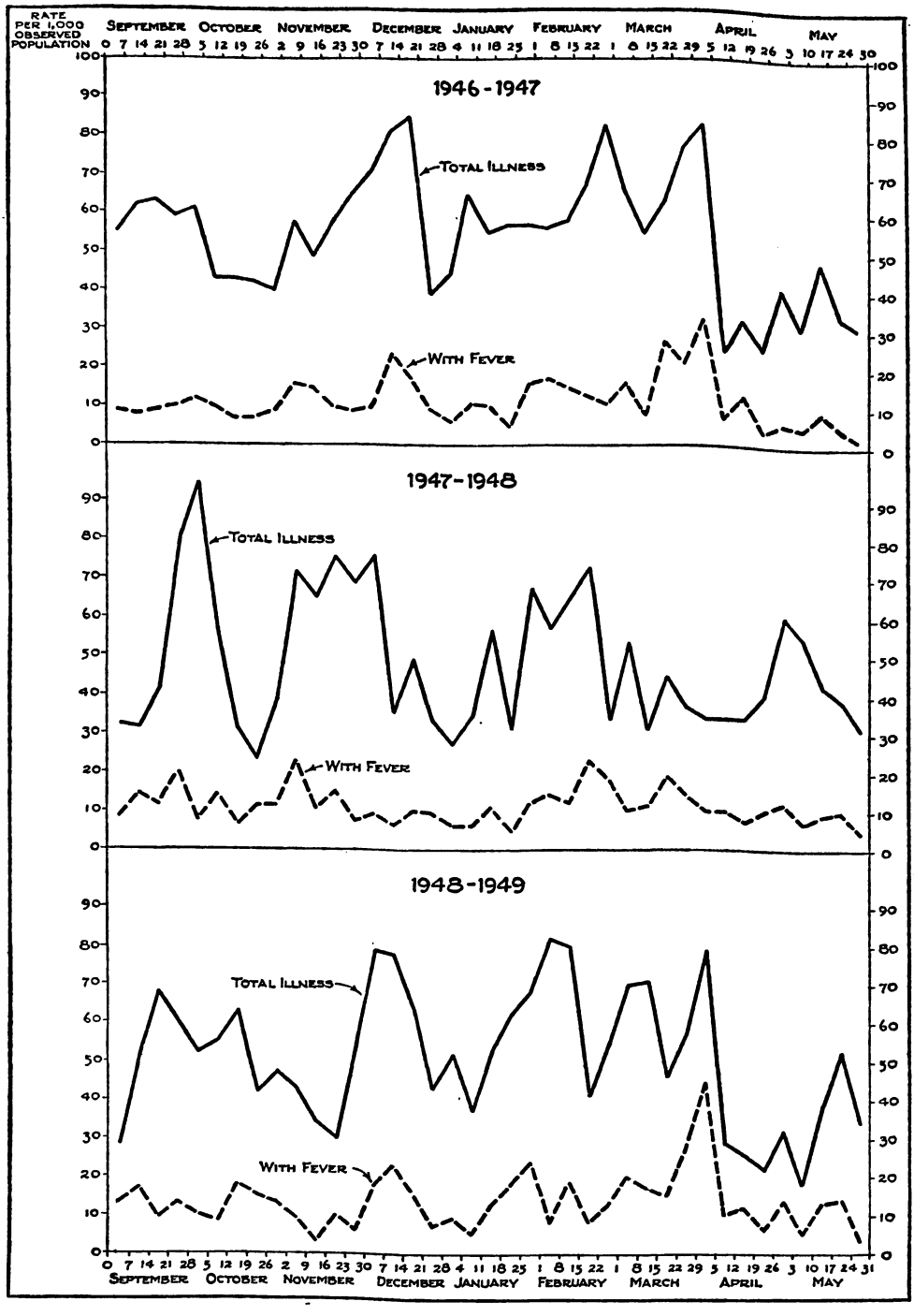

Fig. 2. Weekly incidence of total respiratory illness and of cases with fever among persons aged 5–18 in *Pleasantville,* September–May, 1946–1947, 1947–1948, and 1948–1949.

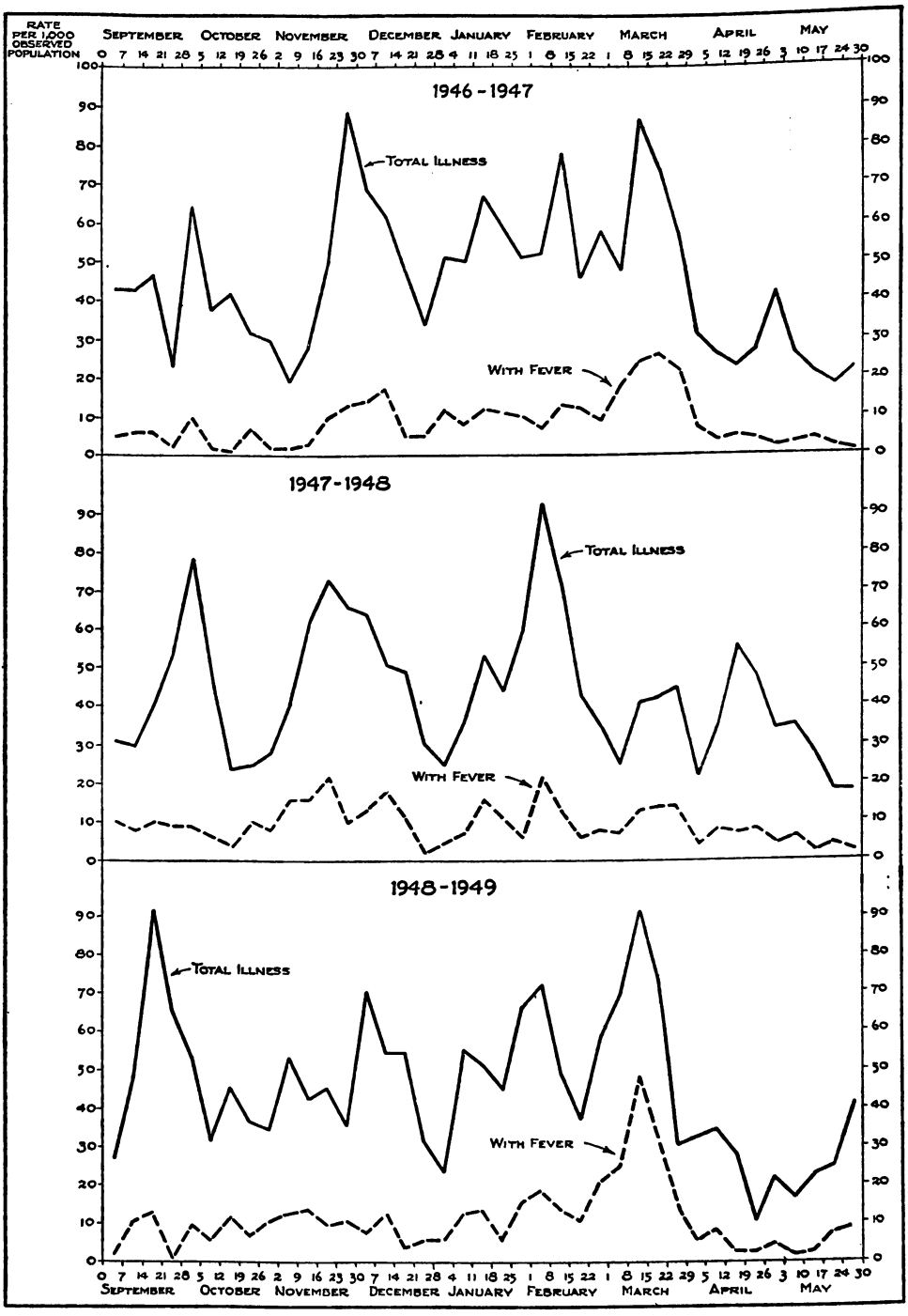

Fig. 3. Weekly incidence of total respiratory illness and of cases with fever among persons aged 5–18 in *Mt. Kisco,* September–May, 1946–1947, 1947–1948, and 1948–1949.

The purpose of this analysis is to examine and compare the periods of relatively high incidence among these school-age children in each school year in the two communities in order to see if there was a difference or a similarity in the clinical features of the cases in these periods.

Fever. The presence of a toxic symptom such as fever accompanying the "common cold" may be taken as one indication of the severity of the illness. Figures 2 and 3 show the weekly incidence of total respiratory illness and of cases with fever among children aged 5–18 in each school year in Pleasantville and Mt. Kisco, respectively. Cases with fever showed somewhat the same seasonal fluctuations as did total respiratory illness. However, it is apparent that colds in the early fall months tended to be mild, since at that time cases with fever were relatively infrequent. In comparison, a considerably higher proportion of the colds which occurred in February and March were accompanied by fever. These facts were true of both communities. The seasonal difference with respect to cases with fever was more marked in the school years 1946–1947 and 1948–1949 than in the middle year 1947–1948.

High Periods of Incidence. In each school year the weekly incidence of the "common cold" among school-age children has been separated into periods of relatively high incidence and those of relatively low incidence. These data are shown for each community in Table 1. In the school years 1946–1947 and 1947–1948 there were three periods of high incidence and one or two classed as periods of low incidence. In the year 1948–1949 there were four periods of high incidence and two of low incidence. During the high periods the mean weekly incidence varied from 47 to 71 per 1,000 school children in Pleasantville and from 43 to 65 in Mt. Kisco. The rates were generally somewhat lower in the periods indicated as "low" compared with those indicated as "high."

Tables 2 and 3 show the distribution of the cases of the "common cold" classified according to the specific part or parts of the respiratory tract affected in the different periods in each

Pleasantville		Mt. Kisco	
High and Low Periods	Rate Per 1,000	Rate Per 1,000	High and Low Periods
1946–1947			
High Periods			*High Periods*
September 1–October 5	57.2	43.1	September 1–October 5
November 17–December 21	71.2	61.0	November 17–December 21
January 5–April 5	61.3	57.1	January 5–March 29
Low Periods			*Low Periods*
October 6–November 16	42.0	28.8	October 6–November 16
April 6–May 31	29.5	21.3	March 30–May 31
1947–1948			
High Periods			*High Periods*
September 15–October 12	65.1	52.9	September 15–October 12
October 27–December 21	57.2	51.5	October 27–December 21
January 12–April 5	46.5	50.5	January 5–March 1
Low Period			*Low Period*
April 6–May 31	36.3	29.5	March 2–May 31
1948–1949			
High Periods			*High Periods*
September 8–October 19	55.6	64.6	September 8–October 5
November 24–January 4	57.8	47.1	November 3–December 28
January 18–February 8	68.5	52.3	January 5–February 22
March 22–April 5	66.1	60.6	February 23–March 29
Low Periods			*Low Periods*
October 20–November 23	37.9	36.4	October 6–November 2
April 6–May 31	29.6	24.9	March 30–May 31

Table 1. Mean weekly incidence of the "common cold" at specific periods among children aged 5–18, Pleasantville and Mt. Kisco, 1946–1949.

school year in Pleasantville and Mt. Kisco, respectively. Figure 4 presents graphically for each community the proportion of the total cases in each of the high periods where the symptoms were those of coryza only, that is, sneezing, nasal discharge or nasal obstruction. In the school year 1946–1947, colds of this type were most frequent in the early fall, September and October, and the proportion declined in each successive

High and Low Periods	Total	Parts of the Respiratory Tract Affected		
		Head Only	Head and Throat or Throat Only	Head, Throat, and Chest, or Throat and Chest, or Chest Only
	Per Cent			
	1946–1947			
High Periods				
September 1-October 5	100.0	60.5	20.9	18.6
November 17 December 21	100.0	50.9	25.8	23.3
January 5-April 5	100.0	42.6	36.6	20.8
Low Periods				
October 6-November 16	100.0	51.0	28.3	20.7
April 6-May 31	100.0	56.1	28.0	15.9
	1947–1948			
High Periods				
September 15–October 12	100.0	59.9	25.1	15.0
October 27-December 21	100.0	37.3	32.7	30.0
January 12-April 5	100.0	46.3	24.3	29.4
Low Period				
April 6-May 31	100.0	36.5	34.5	29.0
	1948–1949			
High Periods				
September 8-October 19	100.0	51.6	31.2	17.2
November 24-January 4	100.0	46.3	31.3	22.4
January 18-February 8	100.0	43.7	31.0	25.3
March 22-April 5	100.0	26.3	34.3	39.4
Low Periods				
October 20-November 23	100.0	41.9	35.1	23.0
April 6-May 31	100.0	35.4	42.7	21.9

Table 2. Distribution of cases of the "common cold" according to specific parts of the respiratory tract affected, among children ages 5-18, in periods of high and low incidence, Pleasantville, 1946-1949.

High and Low Periods	Total	Parts of the Respiratory Tract Affected		
		Head Only	Head and Throat or Throat Only	Head, Throat, and Chest, or Throat and Chest, or Chest Only
	Per Cent			
	1946–1947			
High Periods				
September 1-October 5	100.0	61.3	22.0	16.7
November 17-December 21	100.0	53.3	21.9	24.8
January 5-March 29	100.0	49.2	20.0	30.8
Low Periods				
October 6-November 16	100.0	60.9	21.2	17.9
March 30-May 31	100.0	54.3	20.7	25.0
	1947–1948			
High Periods				
September 15-October 12	100.0	55.2	23.4	21.4
October 27-December 21	100.0	38.7	21.9	39.4
January 5-March 1	100.0	46.8	27.3	25.9
Low Period				
March 2-May 31	100.0	39.9	31.2	28.9
	1948–1949			
High Periods				
September 8-October 5	100.0	53.7	24.5	21.8
November 3-December 28	100.0	47.1	23.1	29.8
January 5-February 22	100.0	52.0	24.3	23.7
February 23-March 29	100.0	40.4	28.3	31.3
Low Periods				
October 6-November 2	100.0	38.7	24.8	36.5
March 30-May 31	100.0	51.0	19.6	29.4

Table 3. Distribution of cases of the "common cold" according to specific parts of the respiratory tract affected, among children ages 5-18, in periods of high and low incidence, Mt. Kisco, 1946-1949.

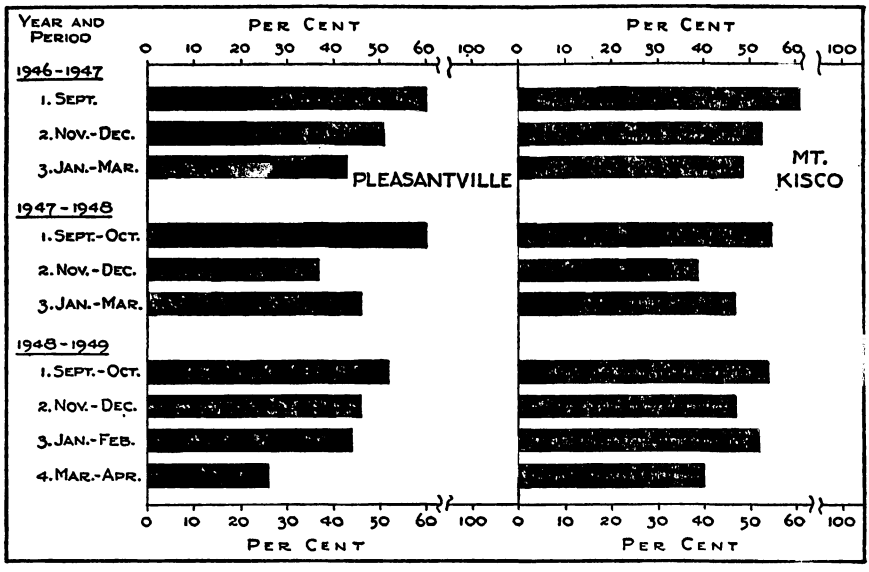

Fig. 4. Per cent of total cases of the "common cold" where symptoms were confined to the head (coryza only) in periods of high incidence in each of three school years in Pleasantville and Mt. Kisco. Only persons aged 5–18 included.

period thereafter. The similarity between the two communities is striking. In the school year 1947–1948 the proportion of cases with coryza only was highest in the early fall and lowest in November and December. Here again the two communities were alike. In the school year 1948–1949 mild colds were most frequent in September and October and least frequent in the fourth period, March, 1949.

Tables 4 and 5 show the distribution of cases of the "common cold" according to the part of the respiratory tract first affected. Figure 5 shows graphically for Pleasantville the proportion of the total cases in each period where symptoms were reported as appearing first in the throat, the left-hand section of the chart, and in the right-hand section the proportion of the total where the first symptom was that of coryza, or a head cold. These data are shown for each of the periods of high incidence in each school year.

It is clear from the data presented that colds with throat involvement as the first symptom occurred more frequently in the winter months than in the early fall. On the other hand,

those where the first symptom was that of coryza showed a marked decline in the same periods. It is interesting to note also that the years 1946–1947 and 1948–1949 show great

Table 4. Distribution of cases of the "common cold" among children ages 5–18, showing the first part affected in periods of high and low incidence, Pleasantville, 1946–1949.

High and Low Periods	Total	Starting in the			
		Head	Throat	Chest	Two or More Parts Simultaneously
	Per Cent				
	1946–1947				
High Periods					
September 1–October 5	100.0	76.7	16.0	2.7	4.6
November 17–December 21	100.0	64.9	22.1	7.4	5.6
January 5–April 5	100.0	55.5	33.5	7.1	3.9
Low Periods					
October 6–November 16	100.0	62.1	20.7	5.1	12.1
April 6–May 31	100.0	68.9	21.7	7.2	2.2
	1947–1948				
High Periods					
September 15–October 12	100.0	70.9	11.2	4.8	13.1
October 27–December 21	100.0	48.5	16.3	9.3	25.9
January 12–April 5	100.0	53.2	17.1	11.0	18.7
Low Period					
April 6–May 31	100.0	47.6	19.0	11.1	22.3
	1948–1949				
High Periods					
September 8–October 19	100.0	62.9	15.2	5.5	16.4
November 24–January 4	100.0	56.3	20.5	10.1	13.1
January 18–February 8	100.0	57.6	18.3	7.0	17.1
March 22–April 5	100.0	49.0	29.6	12.3	9.1
Low Periods					
October 20–November 23	100.0	52.7	18.3	11.5	17.5
April 6–May 31	100.0	55.0	22.5	7.3	15.2

similarity. The school year 1947–1948 followed somewhat the same pattern but cases for throat involvement as the first

Table 5. Distribution of cases of the "common cold" among children aged 5–18 showing the first part affected in periods of high and low incidence, Mt. Kisco, 1946–1949.

High and Low Periods	Total	Starting in the			
		Head	Throat	Chest	Two or More Parts Simultaneously
		Per Cent			
		1946–1947			
High Periods					
September 1–October 5	100.0	76.9	13.5	4.8	4.8
November 17—December 21	100.0	64.6	20.1	8.8	6.5
January 5–March 29	100.0	59.1	21.1	11.3	8.5
Low Periods					
October 6–November 16	100.0	72.8	17.9	7.3	2.0
March 30–May 31	100.0	68.3	15.9	7.3	8.5
		1947–1948			
High Periods					
September 15–October 12	100.0	71.4	9.9	2.6	16.1
October 27–December 21	100.0	51.7	17.6	12.8	17.9
January 5–March 1	100.0	57.4	22.7	9.3	10.6
Low Period					
March 2–May 31	100.0	52.8	24.2	10.1	12.9
		1948–1949			
High Periods					
September 8–October 5	100.0	65.1	20.1	6.5	8.3
November 3–December 28	100.0	61.4	18.7	8.2	11.7
January 5–February 22	100.0	62.7	19.9	9.6	7.8
February 23–March 29	100.0	51.6	28.0	11.6	8.8
Low Periods					
October 6–November 2	100.0	49.6	24.1	15.3	11.0
March 30–May 31	100.0	60.8	19.1	15.2	5.9

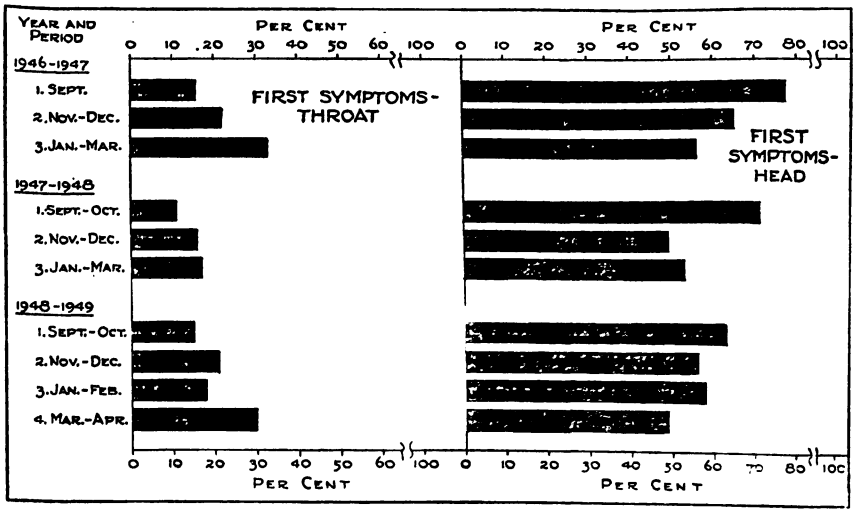

Fig. 5. Per cent of total cases of the "common cold" (1) where symptoms were first noted in the throat, left-hand section of Figure; and (2) where symptoms were first noted in the head, right-hand section of Figure, in periods of high incidence in each of three school years, Pleasantville. Only persons aged 5–18 included.

manifestation of illness were generally not as frequent as in the other years.

Fig. 6. Per cent of total cases of the "common cold" (1) where symptoms were first noted in the throat, left-hand section of Figure; and (2) where symptoms were first noted in the head, right-hand section of Figure, in periods of high incidence in each of three school years, Mt. Kisco. Only persons aged 5–18 included.

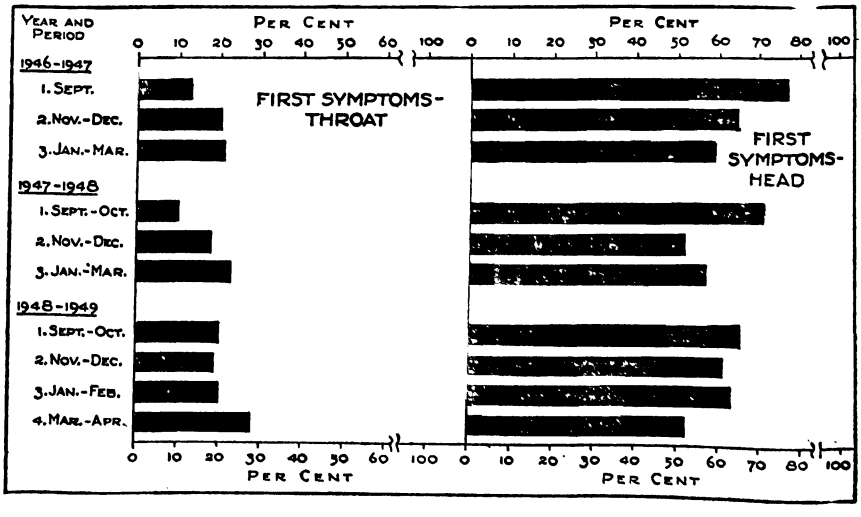

Figure 6 shows for Mt. Kisco the same type of data as presented for Pleasantville in Figure 5. The two communities were generally similar with respect to seasonal differences in the proportion of cases starting with a sore or inflamed throat and those starting with coryza.

Table 6. Proportion of cases of the "common cold" with specific symptoms among children aged 5–18 in periods of high and low incidence. Pleasantville 1946–1949.

High and Low Periods	Symptoms		
	Fever	Aching	Cough
	Per Cent		
	1946–1947		
High Periods			
September 1–October 5	17.1	13.5	40.5
November 17–December 21	19.6	7.6	49.1
January 5–April 5	25.4	13.8	47.2
Low Periods			
October 6–November 16	25.5	11.3	45.6
April 6–May 31	21.9	8.0	40.6
	1947–1948		
High Periods			
September 15–October 12	20.2	5.8	31.3
October 27–December 21	19.9	7.8	52.8
January 12–April 5	28.6	14.7	46.2
Low Period			
April 6–May 31	22.0	6.7	54.5
	1948–1949		
High Periods			
September 8–October 19	22.6	12.5	40.5
November 24–January 4	22.5	9.8	44.0
January 18–February 8	25.6	10.9	48.1
March 22–April 5	55.9	38.2	61.8
Low Periods			
October 20–November 23	26.0	7.3	50.7
April 6–May 31	32.4	14.6	46.5

High and Low Periods	Symptoms		
	Fever	Aching	Cough
	Per Cent		
	1946–1947		
High Periods			
September 1–October 5	13.4	5.3	29.9
November 17–December 21	19.5	5.4	42.2
January 5–March 29	24.9	13.9	44.4
Low Periods			
October 6–November 16	10.3	3.8	35.3
March 30–May 31	18.1	10.5	37.4
	1947–1948		
High Periods			
September 15–October 12	15.9	8.2	32.8
October 27–December 21	27.5	14.4	59.7
January 5–March 1	22.3	14.1	39.3
Low Period			
March 2–May 31	24.7	11.5	50.0
	1948–1949		
High Periods			
September 8–October 5	13.7	10.3	39.7
November 3–December 28	20.7	12.2	46.6
January 5–February 22	25.4	10.5	39.5
February 23–March 29	46.5	24.6	55.6
Low Periods			
October 6–November 2	24.8	16.8	58.4
March 30–May 31	21.4	13.8	51.0

Table 7. Proportion of cases of the "common cold" with specific symptoms among children aged 5–18 in periods of high and low incidence. Mt. Kisco, 1946–1949.

Involvement of the throat or chest in minor respiratory disease is apt to be interpreted as indicating extensions of the inflammatory process. However, Van Volkenburg and Frost,[3] in

[3] The data of Van Volkenburg and Frost were obtained by personal investigation of cases, November, 1929–November, 1930, in a group of families residing in Baltimore.

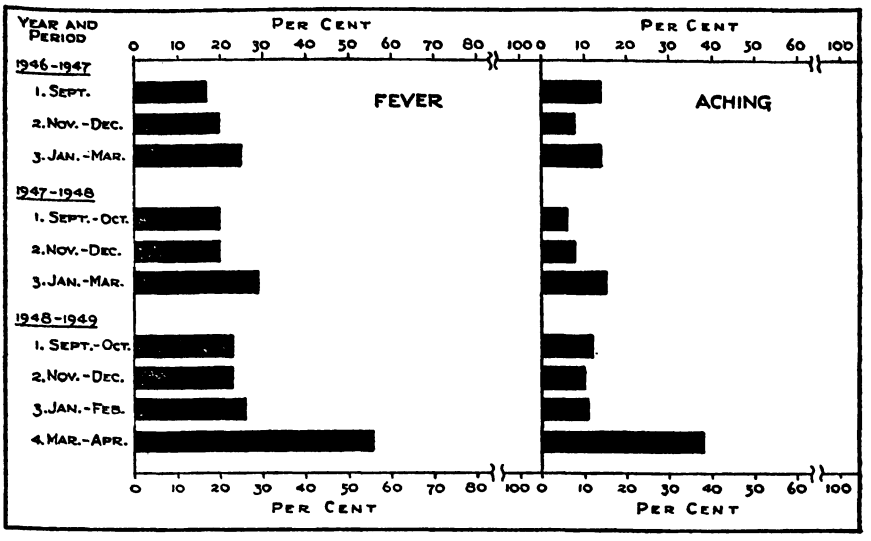

Fig. 7. Per cent of total cases of the "common cold" (1) with fever, left-hand section of Figure; and (2) with aching, right-hand section of Figure, in periods of high incidence in each of three school years, Pleasantville. Only persons aged 5–18 included.

a clinical description of such illnesses, noted that throat symptoms were by no means uncommon on the first day of illness (4).

Tables 6 and 7 show for each community the proportion of the total cases of the "common cold" in each period which were accompanied by fever, by aching, and by cough. The periods showed some variation with respect to cough. In Pleasantville from 31 to 53 per cent of the illnesses were accompanied by cough; in Mt. Kisco this symptom was reported for 30 to 59 per cent of the total.

Figures 7 and 8 show the proportion of cases with fever and with aching reported in Pleasantville and Mt. Kisco, respectively. The most striking point brought out in these charts is that the fourth high period in 1948–1949 differed greatly from all other high periods in that year and from those in other years with respect to the frequency of occurrence of cases with these particular symptoms. For example, in Pleasantville in that period 56 per cent of the total cases were accompanied by fever compared with from 17 to about 30 per cent in all other

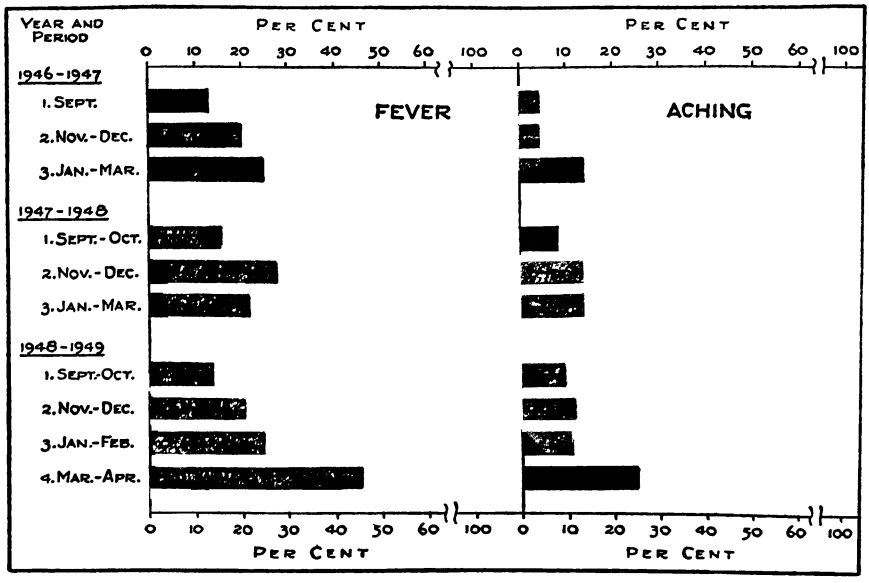

Fig. 8. Per cent of total cases of the "common cold" (1) with fever, left-hand section of Figure; and (2) with aching, right-hand section of Figure, in periods of high incidence in each of three school years, Mt. Kisco. Only persons aged 5–18 included.

periods. Thirty-eight per cent of the total cases reported aching as a symptom compared with the usual proportion of 8 to 14 per cent. The experience of Mt. Kisco was generally similar to that of Pleasantville in respect to the occurrence of these constitutional symptoms.

There seems little doubt that the fourth high period in the year, 1948–1949, represented an occurrence in both communities of an unusual type of respiratory illness, that is, unusual in the three years studied. In Pleasantville the period included 15 days, March 22–April 5; in Mt. Kisco the period included 35 days, February 23–March 29. The mean weekly incidence of illness in these periods was about the same in each community, 65 per 1,000 children in Pleasantville compared with 61 in Mt. Kisco. These levels of incidence were not markedly different from the mean incidence in other high periods in that year or from those in other years in the two communities. However, the unusual frequency of toxic symptoms was outstanding in both communities in the fourth high period of 1948–1949. This

fact may be taken as suggestive evidence that the predominant infective agent in this period differed from those in other periods. The relatively high frequency of fever and aching suggests the presence of a type of mild influenza-like disease.

Table 8. Distribution of cases of the "common cold" by degree of disability in periods of high and low incidence among children ages 5-18, Pleasantville, 1946-1949.

High and Low Periods	Total	Degree of Disability		
		Non-disabling	Disabling But No Bed	Disabling With Bed
	Per Cent			
	1946–1947			
High Periods				
September 1-October 5	100.0	41.4	17.2	41.4
November 17-December 21	100.0	32.7	19.9	47.4
January 5-April 5	100.0	22.4	21.4	56.2
Low Periods				
October 6-November 16	100.0	35.3	18.6	46.1
April 6-May 31	100.0	33.2	24.6	42.2
	1947–1948			
High Periods				
September 15-October 12	100.0	37.0	22.1	40.9
October 27-December 21	100.0	26.4	26.7	46.9
January 12-April 5	100.0	22.8	24.2	53.0
Low Period				
April 6-May 31	100.0	30.2	23.9	45.9
	1948–1949			
High Periods				
September 8-October 19	100.0	43.6	20.2	36.2
November 24-January 4	100.0	28.4	27.6	44.0
January 18-February 8	100.0	22.4	36.0	41.6
March 22-April 5	100.0	11.5	18.3	70.2
Low Periods				
October 20-November 23	100.0	26.0	27.3	46.7
April 6-May 31	100.0	34.6	22.2	43.2

Tables 8 and 9 show the distribution of cases of the "common cold" by type of disability in periods of high and low incidence in Pleasantville and Mt. Kisco. It is interesting to note that the usual proportion of cases confined to bed ranges

Table 9. Distribution of cases of the "common cold" by degree of disability in periods of high and low incidence among children ages 5-18, Mt. Kisco, 1946-1949.

High and Low Periods	Total	Degree of Disability		
		Non-disabling	Disabling But No Bed	Disabling With Bed
	Per Cent			
	1946–1947			
High Periods				
September 1-October 5	100.0	63.6	8.6	27.8
November 17-December 21	100.0	37.5	23.1	39.4
January 5-March 29	100.0	32.3	23.5	44.2
Low Periods				
October 6-November 16	100.0	55.8	10.9	33.3
March 30-May 31	100.0	47.4	24.0	28.6
	1947–1948			
High Periods				
September 15-October 12	100.0	52.3	11.3	36.4
October 27-December 21	100.0	31.2	21.2	47.6
January 5-March 1	100.0	31.1	24.9	44.0
Low Period				
March 2-May 31	100.0	37.4	22.0	40.6
	1948–1949			
High Periods				
September 8-October 5	100.0	56.8	15.0	28.2
November 3-December 28	100.0	43.7	17.9	38.4
January 5-February 22	100.0	34.5	21.9	43.6
February 23-March 29	100.0	22.2	16.9	60.9
Low Periods				
October 6-November 2	100.0	30.7	25.5	43.8
March 30-May 31	100.0	44.3	22.4	33.3

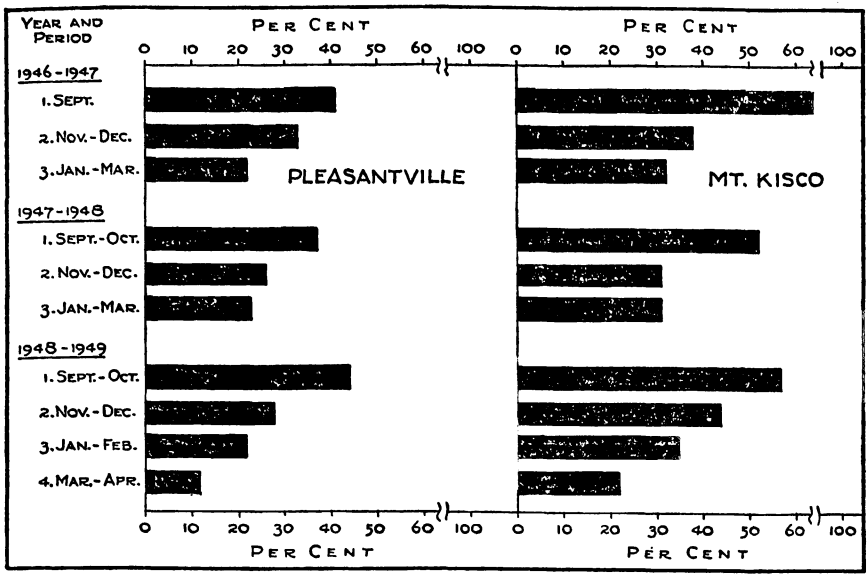

Fig. 9. Per cent of total cases of the "common cold" which caused no disability in periods of high incidence in each of three school years, Pleasantville and Mt. Kisco. Only persons aged 5–18 included.

from 36 to 56 per cent. Cases of illness reported during the fourth high period of 1948–1949 were unusual in that 61 per cent of the total in Mt. Kisco and 70 per cent of those in Pleasantville were severe enough to cause confinement to bed.

Figure 9 shows the proportion of the total cases in each high period in each school year that caused no disability. The data are shown for Pleasantville and Mt. Kisco. The two communities show great similarity. Nondisabling cases decline with consistent regularity with changes in season. This was true in both communities. It is quite true that disability is partly a social phenomenon, that is, a cold of the same degree of severity will be considered to be disabling to one person and not so to another. It may be also that season actually influences the attitude taken as to what illnesses are nondisabling, that is, inclement weather in the winter months may be a decisive factor. However, there is evidence that severity of illness increased as season changed throughout each school year. In each school year, bed illness showed a definite and consistent increase during the periods of high incidence from September to March.

Discussion and Conclusion

The interpretation that the differences in the clinical description of the "common cold" at different seasons may be due to the presence of more than one type of infecting organism at different seasons would have little cogency if based upon data from only one community. However, two communities were compared and the same variation in clinical character of disease with season was observed in both. This fact should be given high significance. Detection of the chief infecting agent of the "common cold" in any period is impossible and was not attempted in this study. Yet from these data we have a suggestion that the chief infective agent probably differs in different seasonal periods. It may be true that the individual or host reaction to the infecting organism of the "common cold" changes with season. However, changes in host reaction cannot account for the results in the fourth high period of 1948–1949, where there was an unusual proportion of cases with aching and fever in both communities.

It seems quite sensible to conclude that colds in the early fall tend to be mild; that colds in the later months tend to be more severe; and in most periods there are probably colds of more than one type. This means that in early fall one type predominates while later new types are introduced. There can be no question about the fact that in the fourth period of 1948–1949 a different type of respiratory illness was present.

Summary

This report presents an analysis of the clinical description of acute respiratory illness at different seasons during a three-year period, September, 1946–May, 1949. The data were obtained in field investigations in two communities, Pleasantville and Mt. Kisco, in Westchester County, New York. Only school-age children are included in this report. The cases which occurred in high periods of incidence, that is, early fall, late fall, and winter seasons during each school year were classified according to the specific part or parts of the respiratory tract

affected, the part first affected, and the presence of constitutional symptoms, such as fever and aching.

Mild colds, those with coryza only, were most frequent in the early fall season, September and October. Colds with throat involvement as the first symptom occurred more frequently in the winter months than in the early fall.

Also, fever and aching accompanied colds more frequently in the winter months than in the fall. There was one high period of incidence of illness in 1949 where the presence of these symptoms was outstanding with respect to their frequency.

The same variation in clinical character of disease was observed in both communities. It was concluded that colds in the early fall tend to be mild; that colds in the later months tend to be more severe; and that in most periods there are probably colds of more than one type.

Acknowledgements are made to Dr. Mildred W. Wells and to the Westchester County Department of Health for generous assistance and cooperation which greatly facilitated the study of acute respiratory illness.

An especial acknowledgment is made to the families in Pleasantville and Mt. Kisco who participated in the study.

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INCIDENCE OF ACUTE RESPIRATORY ILLNESS AMONG MALES AND FEMALES AT SPECIFIC AGES

Study No. 5

Doris Tucher, Jane E. Coulter, and Jean Downes[1]

STUDIES of the incidence of acute respiratory illness have shown: (1) that the incidence among both males and females decreases with age; and (2) that after the age of 10 years the incidence rate among females exceeds that of males. Van Volkenburgh and Frost (1928–1930) found that the incidence of acute respiratory illness was highest at ages 0–4 and then generally decreased with age. They noted that the rate was higher for males under 10 years of age than for females of the same age. However, the rate for females aged 10 and over was greater than that for males (1). The study made by the Committee on the Costs of Medical Care (1928–1931) and a study in the Eastern Health District of Baltimore (1938–1943) showed results similar to those found by Van Volkenburgh and Frost (2, 3).

The Milbank Memorial Fund in cooperation with the Westchester County Department of Health conducted a study of acute respiratory illness in two communities, Pleasantville and Mt. Kisco, New York. The data which were collected make it possible to study the age and sex incidence of these diseases in the two communities. In addition, data were obtained which make it possible to describe the age and sex incidence of acute respiratory illness by site of symptoms and by type of disability. This report is a presentation of these data.

Data and Method of Study

The two communities, Pleasantville and Mt. Kisco, were fairly comparable with respect to size. According to the 1940 Census there were 4,454 persons living in the incorporated village of Pleasantville and 5,941 in the village of Mt. Kisco.

[1] From the Milbank Memorial Fund. This is the fifth in a series of papers dealing with a study of acute respiratory illness.

Sixteen per cent of the population of Pleasantville were foreign born compared with 21 per cent in Mt. Kisco. In both communities the foreign born were chiefly Italian. Negroes formed a very small proportion of the population in either place; about 1 per cent in Pleasantville and 3 per cent in Mt. Kisco.

The periodic survey of families for the purpose of collection of illness records was the method employed in this study. All families in which there were one or more children attending grade school or high school in each of the two communities were included in the study. These families were visited every twenty-eight days during the three school years, September to June, 1946–1949. On each visit to the family, inquiry was made about acute respiratory illnesses which had occurred among their members during the past four weeks. Visits were not made during the summer months because it was believed that observation during that period would be incomplete since some children go to summer camps and often the entire family is away from the community for part or all of the summer.

Each family visitor was given a list of the common acute respiratory illnesses in the terminology generally used by a family informant. The list is as follows:

1. Cold, head cold, sneezing attack, sinusitis.
2. Sore throat, tonsillitis, septic sore throat, streptococcus sore throat, pharyngitis, quinsy, laryngitis, hoarseness, swollen cervical glands.
3. Bronchitis, chest cold, tracheitis, croup, cough.
4. Grippe, influenza, intestinal influenza or grippe.
5. Pneumonia, pleurisy, and asthma.
6. Earache with a cold or without a cold, otitis media, running ear, and mastoiditis.

Inquiry was made about the presence or absence of each type of illness among members of the family.

The sickness record included the nature of the illness as stated by the informant, usually the mother, the date of onset and duration of illness, the onset and duration of disability and the number of days in bed, the amount of medical care and, if

hospitalized, the number of days in the hospital. The sickness record also included the order in which head, throat, or chest was involved in the illness.

The mean number of families visited during the three school years of the special study was 530 in Pleasantville and 570 in Mt. Kisco. The families in Pleasantville included some 2,100 persons and those in Mt. Kisco 2,400. In each group of families there were about 900 school-age children and 180 to 200 pre-school-age children.

Characteristics of the Two Communities

In the study of acute respiratory illness, data were obtained from each family which reveal certain social characteristics of the family. The data included: a census of the household, the age, sex, and marital status of the members, the occupation and place of employment of all employed members, and the highest education attained for all members of the household.

A description of the two communities with respect to these characteristics has been presented in previous reports (4, 5). The two communities were found to be comparable with respect to loss of families due to moving or refusal to cooperate, age distribution of the family members, age of husbands and wives, and size of family. There were, however, marked differences between the two communities in the educational attainment of the husbands and wives, in the occupation of the head of the household, and in commuter status of the family. For example, 40 per cent of the heads of the household in the Pleasantville families had a college education compared with 15 per cent in Mt. Kisco. Fifty-four per cent of the household heads in Pleasantville were in the professional or managerial class compared with 36 per cent in Mt. Kisco. In Pleasantville 76 per cent of the families, compared with 53 per cent in Mt. Kisco, had one or more commuters, that is, one or more persons in the family whose place of work was outside the community in which they lived.

None of these differences between the two communities

are believed to have an effect upon the distribution of respiratory illness by age among males and females in either community. Therefore, social class of the family has not been taken into account in this particular analysis.

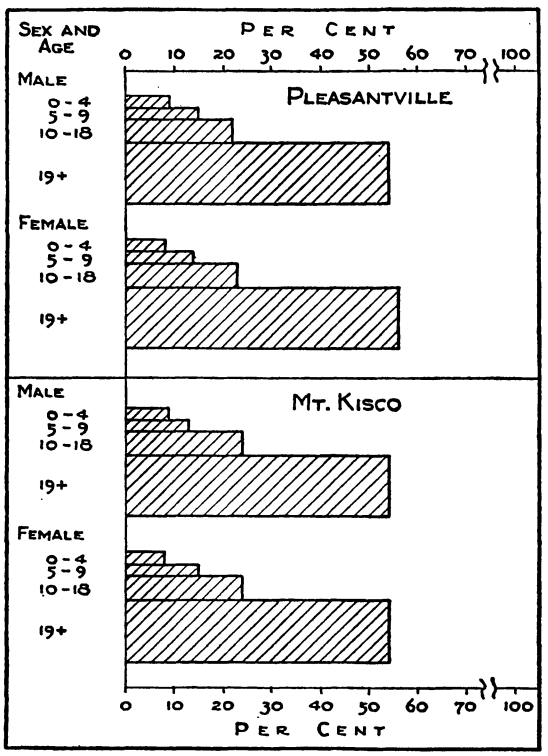

Fig. 1. Age distribution of males and females in Pleasantville and Mt. Kisco, September to May 1946–1949.

Incidence of Illness by Age and Sex

The data are illnesses reported during the three school years, September to May, 1946–1949, in the two communities. Previous analysis indicated that in each year the weekly incidence of illness was fairly similar in both communities (5). For the purposes of this analysis, therefore, the morbidity experience over the three years has been combined for each community. The population is composed of the presons counted in each year that they were observed. Thus, rates obtained represent an average over three years.

Figure 1 and Appendix Table 1 show that the males and females had a similar age distribution. From 54 to 56 per cent in each sex group in Pleasantville and in Mt. Kisco were persons aged 19 years or older. In each community females constituted 51 per cent of the total population and males 49 per cent.

Acute respiratory illness as reported in this analysis includes head colds or coryza, colds with sore throat, tonsillitis and

Sex and Age	Pleasantville			Mt. Kisco		
	Total	Coryza-Head Symptoms Only	Colds With Throat or Chest Symptoms	Total	Coryza-Head Symptoms Only	Colds With Throat or Chest Symptoms
	Rate Per 1,000 Population					
Males						
All Ages	1,318.7	572.0	746.7	1,152.4	526.0	626.4
0– 4	2,454.5	1,225.6	1,229.0	2,331.3	1,224.9	1,106.4
5– 9	2,413.0	1,026.3	1,386.6	2,222.9	940.7	1,282.2
10–18	1,463.5	654.1	809.5	1,198.2	561.0	637.2
19+	771.8	305.9	465.9	676.8	294.2	382.6
Females						
All Ages	1,503.8	611.5	892.3	1,492.3	662.4	829.9
0– 4	2,207.7	1,088.0	1,119.7	2,252.4	1,313.9	938.5
5– 9	2,449.1	997.9	1,451.1	2,403.2	1,048.4	1,354.8
10–18	1,682.6	701.4	981.2	1,485.2	688.5	796.7
19+	1,100.3	412.7	687.6	1,134.2	448.2	686.0

Table 1. Incidence of coryza and colds with throat or chest symptoms classified by age and sex, 1946–1949.

septic sore throat, colds with chest complications, tracheitis, bronchitis or cough, and influenza. The distribution of these illnesses according to their proportional frequency of occurrence was as follows: head colds, 47 per cent; colds with sore throat, 21 per cent; tonsillitis, 5 per cent; colds with chest symptoms, 22 per cent; and influenza or grippe, 5 per cent. Cases of intestinal influenza or intestinal grippe are excluded.

Illness According to Part or Parts of Respiratory Tract Affected. The illnesses have been classified according to the part or parts of the respiratory tract which were reported as affected and have been divided into two classes: (1) illnesses which affected the head only (coryza); and (2) illnesses which involved the throat or chest.[2]

The incidence of coryza and of colds with throat or chest symptoms classified by age and sex, is shown in Table 1. Coryza cases, with head symptoms only, show for each sex

[2] The classification "illnesses with throat or chest symptoms" includes: illnesses with throat symptoms only, illnesses with throat symptoms in combination with head and/or chest symptoms, illnesses with chest symptoms only, or illnesses with chest and head symptoms.

group a consistent decline in incidence as age increases. On the other hand, the rate of colds with throat or chest involvement was higher at ages 5–9 than at ages 0–4. This was true of both sexes. The differences between the sexes were most marked after age 10. Both communities were similar in these respects.

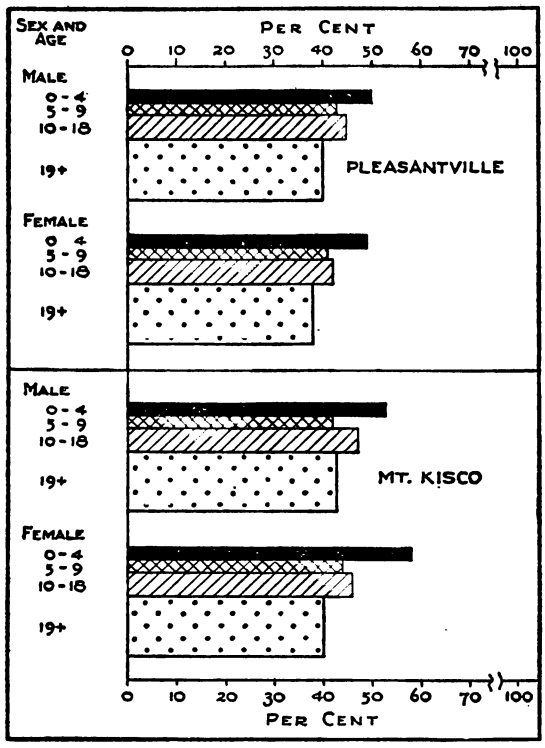

Fig. 2. Proportion of the total respiratory illness of males and females at each age that consisted of head colds (coryza only). *Pleasantville and Mt. Kisco.* Data for the three school years 1946–1947, 1947–1948, 1948–1949 have been combined.

When total incidence of respiratory illness is considered, coryza only and colds with throat or chest symptoms, there were no important differences between the rates at ages 0–4 and 5–9. This was true of both sexes and in both Pleasantville and Mt. Kisco. This similarity at the young ages is contrary to the experience in other studies of respiratory illness. It may be that because of the nature of this particular study, where ultra-violet lights were placed in the class rooms of the schools of Pleasantville for the control of respiratory illness, the interest of the family was concentrated upon illness as it occurred in the school-age child and less attention was given to remembering and reporting attacks of such illness among the preschool-age children.

Illnesses with throat or chest involvement occurred more frequently among both males and females than did those with

coryza only. At all ages the former group constituted from 54 to 59 per cent of the total illnesses in each sex group.

Figure 2 shows for males and females in each community the proportion of the total illness at each age for which head symptoms only were reported. In both communities these cases formed about the same proportion of the total among males and females at specific ages, namely, about 40–49 per cent. Coryza formed the lowest proportion of the total illness at ages

Table 2. Incidence of acute respiratory illness among males and females, classified by age and type of disability—Pleasantville and Mt. Kisco, 1946-1949.

Age and Sex	Type of Disability		
	Non-Disabling	Disability No Bed	Disability With Bed
	Rate Per 1,000		
	PLEASANTVILLE		
Males—All Ages	582.8	222.6	513.3
0– 4	1,353.6	353.6	747.5
5– 9	572.8	653.8	1,186.3
10–18	491.9	256.8	714.9
19+	495.8	68.8	207.1
Females—All Ages	717.9	260.7	525.3
0– 4	1,183.1	443.6	581.0
5– 9	582.2	706.9	1,160.1
10–18	542.1	338.7	801.8
19+	754.9	94.2	251.2
	MT. KISCO		
Males—All Ages	578.8	176.4	397.2
0– 4	1,313.1	316.1	702.2
5– 9	748.4	511.2	963.2
10–18	514.0	199.4	484.9
19+	445.6	61.5	169.9
Females—All Ages	796.0	208.1	488.1
0– 4	1,456.3	252.4	543.7
5– 9	759.8	557.4	1,086.0
10–18	667.8	213.1	604.3
19+	763.7	104.5	265.9

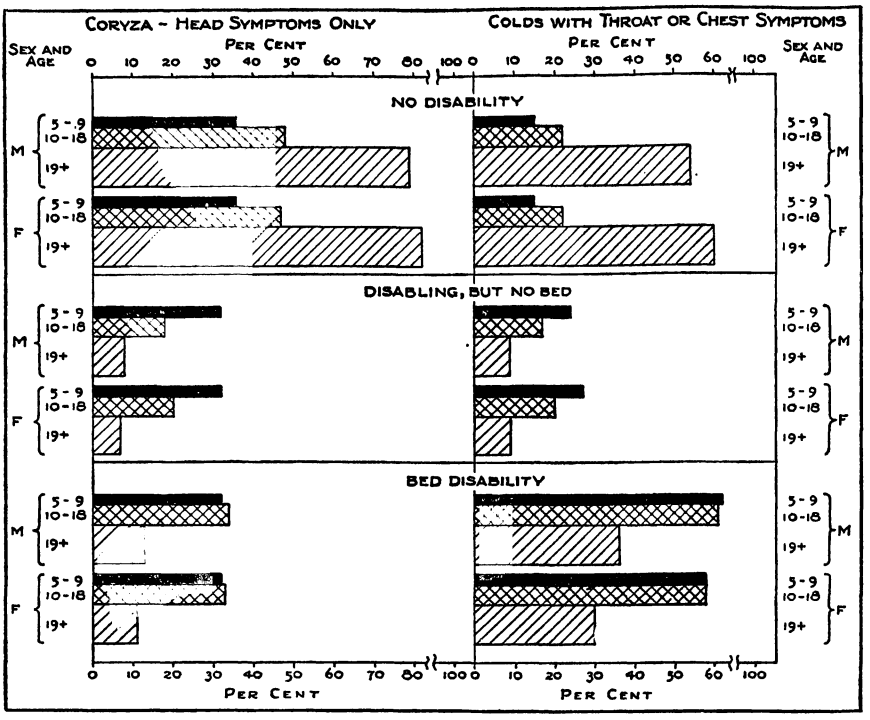

Fig. 3. *Section 1.* Cases of head colds (coryza) among males and females at each age classified according to disability. *Section 2.* Cases of colds with throat or chest symptoms among males and females at each age classified according to disability. *Pleasantville.*

19 and over. It is interesting to note that although females age 10 and over had higher rates of respiratory illness than did males at the same ages, cases with head symptom only comprised a similar proportion of the total respiratory illness at these ages among both sexes.

Disabling Illness. Respiratory illness was divided into three classes according to disability: (1) illnesses which did not interfere with usual activities (nondisabling); (2) illnesses which caused an interruption in usual daily activities, but did not cause confinement to bed; and (3) illnesses which caused confinement to bed for one or more days.

Table 2 shows the incidence of respiratory illness among males and females classified by age and type of disability in Pleasantville and Mt. Kisco.

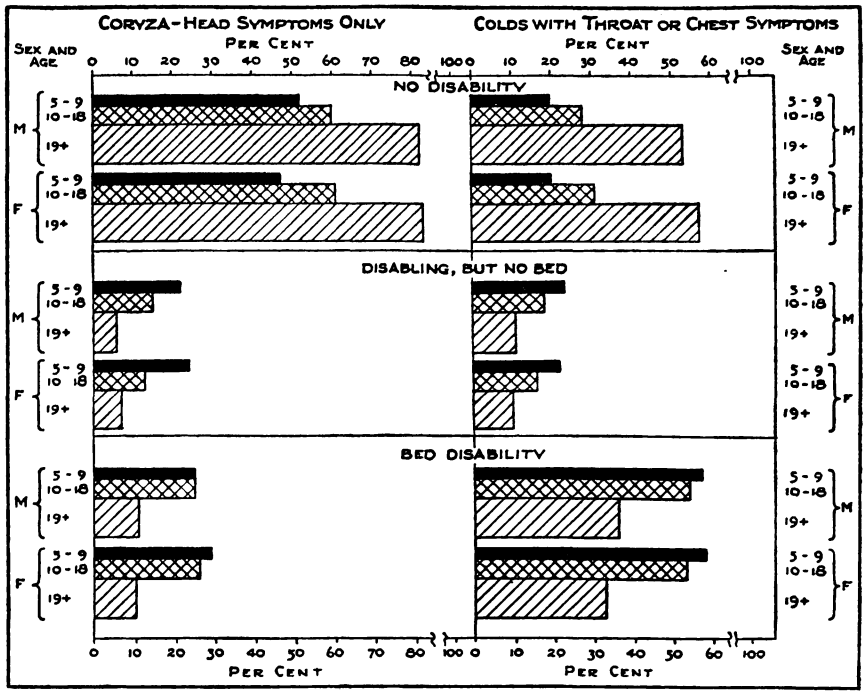

Fig. 4. *Section 1.* Cases of head colds (coryza) among males and females at each age classified according to disability. *Section 2.* Cases of colds with throat or chest symptoms among males and females at each age classified according to disability. *Mt. Kisco.*

In Pleasantville, at all ages, 44 and 48 per cent of the illnesses among males and females, respectively, were reported as nondisabling. In Mt. Kisco, nondisabling illness constituted 50 per cent of the total among males and 53 per cent among females.

The rate of disabling illness was highest at ages 5–9 compared with any other age groups. This was true of both sexes in both communities.[3]

Illness which caused confinement to bed (Figures 3 and 4) formed fairly similar proportions of the total among males and females in each community. In Pleasantville, 39 and 35 per cent of the illnesses among males and females, respectively, were bed illnesses compared with 34 and 33 per cent in the same sex groups in Mt. Kisco. In both communities bed ill-

[3] The definition of disabling illness, "interference with usual activities," makes it virtually impossible to classify illnesses among preschool-age children according to whether disabling or not.

nesses were most frequent among school-age children, both boys and girls, aged 5–18.

Table 3 shows the incidence of coryza and of illnesses with

Table 3. Incidence of acute respiratory illness among *males* classified by type of disability in Pleasantville and Mt. Kisco, 1946-1949.

Age and Type of Cold	Total	Type of Disability		
		Non-Disabling	Disability No Bed	Disability With Bed
	Rate Per 1,000			
	PLEASANTVILLE			
Coryza				
All Ages	572.0	335.8	102.0	134.2
0– 4	1,225.6	902.4	154.9	168.4
5– 9	1,026.3	370.4	325.9	330.0
10–18	654.1	313.5	117.6	223.0
19+	305.9	242.1	25.5	38.3
Colds With Throat or Chest Symptoms				
All Ages	746.7	247.0	120.6	379.1
0– 4	1,229.0	451.2	198.7	579.1
5– 9	1,386.6	202.4	327.9	856.3
10–18	809.5	178.4	139.2	491.9
19+	465.9	253.7	43.3	168.8
	MT. KISCO			
Coryza				
All Ages	526.0	355.0	72.7	98.3
0– 4	1,224.9	884.5	167.2	173.3
5– 9	940.7	492.8	210.6	237.2
10–18	561.0	337.1	82.9	141.1
19+	294.2	242.3	19.0	33.0
Colds With Throat or Chest Symptoms				
All Ages	626.4	223.8	103.7	298.9
0– 4	1,106.4	428.6	148.9	528.9
5– 9	1,282.2	255.6	300.6	726.0
10–18	637.2	176.9	116.5	343.8
19+	382.6	203.3	42.5	136.9

throat or chest symptoms by age and type of disability among *males* in Pleasantville and Mt. Kisco. This table brings out very strikingly the fact that even head colds, coryza only, are

Table 4. Incidence of acute respiratory illness among *females* classified by type of disability in Pleasantville and Mt. Kisco, 1946-1949.

Age and Type of Cold	Total	Type of Disability		
		Non-Disabling	Disability No Bed	Disability With Bed
	Rate Per 1,000			
	PLEASANTVILLE			
Coryza				
All Ages	611.5	370.4	111.7	129.5
0– 4	1,088.0	721.8	253.5	112.7
5– 9	997.9	359.7	320.2	318.1
10–18	701.4	327.5	140.5	233.4
19+	412.7	339.7	28.9	44.1
Colds With Throat or Chest Symptoms				
All Ages	892.3	347.5	149.0	395.8
0– 4	1,119.7	461.3	190.1	468.3
5– 9	1,451.1	222.5	386.7	842.0
10–18	981.2	214.6	198.2	568.4
19+	687.6	415.2	65.3	207.1
	MT. KISCO			
Coryza				
All Ages	662.4	453.2	87.5	121.6
0– 4	1,313.9	1,019.4	142.4	152.1
5– 9	1,048.4	494.6	254.5	299.3
10–18	688.5	419.7	88.5	180.3
19+	448.2	371.9	33.5	42.8
Colds With Throat or Chest Symptoms				
All Ages	829.9	342.8	120.6	366.5
0– 4	938.5	436.9	110.0	391.6
5– 9	1,354.8	265.2	302.9	786.7
10–18	796.7	248.1	124.6	424.0
19+	686.0	391.8	71.0	223.1

considered to be much more disabling among children of school age than among adults. For example, the rate of disabling illness in this category among males 5–9 was 656 per 1,000 population compared with a rate of 370 for nondisabling illness. On the other hand, among adults 19 years of age or older, the rate of disabling illness was 64 per 1,000 population compared with a rate of 242 for nondisabling illness.

The same type of differences between school-age persons and adults were evident when cold with throat or chest symptoms are considered. However, among adults, bed illnesses formed a considerably greater proportion of the total in this category than was true of coryza.

The females had somewhat higher rates of illness from coryza and from colds with throat or chest symptoms (Table 4). The differences in disabling illness with age were similar to those noted for males.

Though the levels of the rates of illness in the different categories were slightly different in the two communities, the age variation of disabling and nondisabling coryza and of colds with throat or chest symptoms showed great likeness in Pleasantville and Mt. Kisco. In both communities, children of school age were more subject to disabling illness than were adults. This may be due to a number of factors—the definition of disability, solicitude and special care of young children, and possibly a greater severity of respiratory illness among the young as contrasted with adults. These factors reflect both attitudes toward illness and actual differences in clinical severity.

Medical Care for Respiratory Illness

The fact that an illness had medical care has been considered as one index of severity of the illness. Both Pleasantville and Mt. Kisco showed a striking similarity with respect to the proportion of the total illnesses which were medically attended. Eighteen per cent of the cases among males and females in Pleasantville were seen by a doctor; in Mt. Kisco, 17 per cent of the total cases among the males and 16 per cent among the females were seen by a doctor.

Table 5 shows the incidence of medically attended illness by age and sex in each community. The most striking point brought out by these data is that medical attention was centered upon the young persons. (Figure 5). Also, the rates declined rapidly as age increased. This was true for each class of illness, that is, coryza and colds with throat or chest symptoms, among males and females in each community.

Table 6 shows for each sex the incidence of respiratory illness classified by type of disability and medical attendance for the population studied in Pleasantville and in Mt. Kisco. As would be expected, medically attended cases are concentrated among those with the greater degree of disability, that is cases which caused confinement to bed. About one-third of these cases had a doctor in attendance. There were no differ-

Table 5. Incidence of medically attended respiratory illness among males and females—Pleasantville and Mt. Kisco, 1946–1949.

Age and Type of Cold	Males	Females
	Rate Per 1,000 Population	
	PLEASANTVILLE	
Coryza		
All Ages	40.5	46.6
0– 4	87.5	119.7
5– 9	95.1	70.7
10–18	39.2	47.7
19+	18.3	29.9
Colds with Throat or Chest Symptoms		
All Ages	196.0	226.7
0– 4	478.1	426.1
5– 9	431.2	409.6
10–18	170.3	222.1
19+	95.5	155.4
	MT. KISCO	
Coryza		
All Ages	35.3	37.0
0– 4	133.7	119.7
5– 9	81.8	86.0
10–18	24.6	15.3
19+	12.5	20.9
Colds with Throat or Chest Symptoms		
All Ages	164.6	202.7
0– 4	419.5	346.3
5– 9	431.5	419.4
10–18	106.4	120.2
19+	83.4	159.0

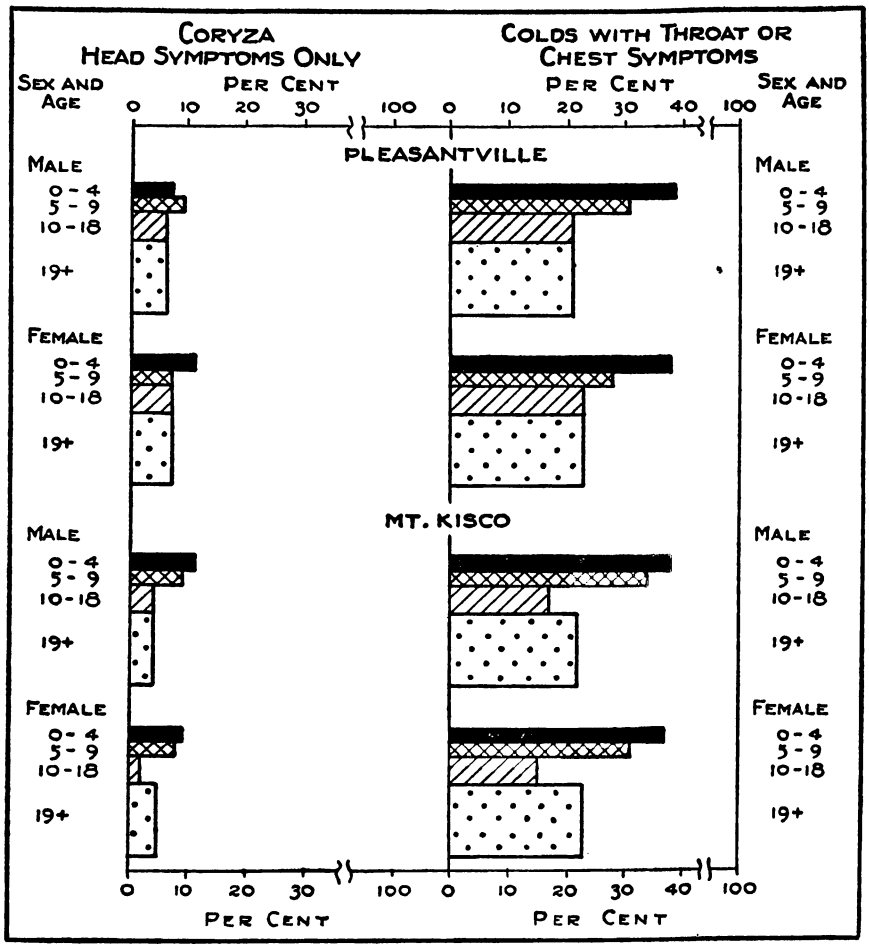

Fig. 5. *Section 1.* Proportion of head colds among males and females at each age which had medical care. *Section 2.* Proportion of colds with throat or chest symptoms among males and females at each age which had medical care.

ences between the sexes nor between the communities in this respect.

Summary

1. In general, incidence decreased with age for both coryza and illnesses with throat or chest involvement for each sex in each community.

2. Incidence of acute respiratory illness was consistently higher for females aged 10 and older than for males of the same ages.

Type of Disability	Pleasantville		Mt. Kisco	
	Male	Female	Male	Female
	rate per 1,000			
Total Cases	1,318.7	1,503.8	1,152.4	1,492.3
Medically Attended	236.5	273.4	199.8	239.6
Nondisabling	582.8	717.8	578.8	796.0
Medically Attended	39.0	59.9	28.0	37.8
Disabling, No Bed	222.7	260.7	176.4	208.1
Medically Attended	23.7	31.4	24.8	31.8
Disabling, With Bed	513.2	525.3	397.3	488.1
Medically Attended	173.8	182.1	147.1	170.1
	number of cases of illness			
Total Cases	4,394	5,319	4,279	5,729
Medically Attended	788	967	742	920
Nondisabling	1,942	2,539	2,149	3,056
Medically Attended	130	212	104	145
Disabling, No Bed	742	922	655	799
Medically Attended	79	111	92	122
Disabling, With Bed	1,710	1,858	1,475	1,874
Medically Attended	579	644	546	653

Table 6. Incidence of acute respiratory illness classified by disability and medical attendance among males and females of all ages, 1946–1949.

3. The proportions which illnesses with head symptoms only, comprised of total respiratory illness at specific ages, were similar for males and females.

4. The proportion of the total illnesses with head symptoms and the proportion with throat or chest symptoms, which were disabling, decreased with age for both sexes.

5. At least four times as many illnesses with throat or chest involvement received medical care than did coryza only.

6. In both communities, females aged 10 and older had more medically attended cases than did the males.

7. In both communities a higher proportion of the total throat or chest illnesses among children under 10 years of age received medical care than did the older ages.

8. Medical care for bed-disabling illness was at least three times as frequent as for nondisabling illnesses for both sexes.

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Appendix Table 1. Population observed during three school years, September–May, 1946–1949.

Sex and Age	Pleasantville	Mt. Kisco
	Population	
Males		
All Ages	3,332	3,713
0–4	297	329
5–9	494	489
10–18	740	893
19+	1,801	2,002
Females		
All Ages	3,537	3,839
0–4	284	309
5–9	481	558
10–18	797	915
19+	1,975	2,057

Age and Type of Cold	Total	Type of Disability		
		Non-Disabling	Disability No Bed	Disability With Bed
	PLEASANTVILLE			
Coryza				
All Ages	1,906	1,119	340	447
0–4	364	268	46	50
5–9	507	183	161	163
10–18	484	232	87	165
19+	551	436	46	69
Colds With Throat or Chest Symptoms				
All Ages	2,488	823	402	1,263
0–4	365	134	59	172
5–9	685	100	162	423
10–18	599	132	103	364
19+	839	457	78	304
	MT. KISCO			
Coryza				
All Ages	1,953	1,318	270	365
0–4	403	291	55	57
5–9	460	241	103	116
10–18	501	301	74	126
19+	589	485	38	66
Colds With Throat or Chest Symptoms				
All Ages	2,326	831	385	1,110
0–4	364	141	49	174
5–9	627	125	147	355
10–18	569	158	104	307
19+	766	407	85	274

Appendix Table 2. Number of cases of acute respiratory illness among *males* classified by type of disability in Pleasantville and Mt. Kisco, 1946–1949.

Age and Type of Cold	Total	Type of Disability		
		Non-Disabling	Disability No Bed	Disability With Bed
	PLEASANTVILLE			
Coryza				
All Ages	2,163	1,310	395	458
0–4	309	205	72	32
5–9	480	173	154	153
10–18	559	261	112	186
19+	815	671	57	87
Colds with Throat or Chest Symptoms				
All Ages	3,156	1,229	527	1,400
0–4	318	131	54	133
5–9	698	107	186	405
10–18	782	171	158	453
19+	1,358	820	129	409
	MT. KISCO			
Coryza				
All Ages	2,543	1,740	336	467
0–4	406	315	44	47
5–9	585	276	142	167
10–18	630	384	81	165
19+	922	765	69	88
Colds with Throat or Chest Symptoms				
All Ages	3,186	1,316	463	1,407
0–4	290	135	34	121
5–9	756	148	169	439
10–18	729	227	114	388
19+	1,411	806	146	459

Appendix Table 3. Number of cases of acute respiratory illness among *females* classified by type of disability in Pleasantville and Mt. Kisco, 1946–1949.

Age and Type of Cold	Males	Females
	Pleasantville	
Coryza		
All Ages	135	165
0–4	26	34
5–9	47	34
10–18	29	38
19+	33	59
Colds with Throat or Chest Symptoms		
All Ages	653	802
0–4	142	121
5–9	213	197
10–18	126	177
19+	172	307
	Mt. Kisco	
Coryza		
All Ages	131	142
0–4	44	37
5–9	40	48
10–18	22	14
19+	25	43
Colds with Throat or Chest Symptoms		
All Ages	611	778
0–4	138	107
5–9	211	234
10–18	95	110
19+	167	327

Appendix Table 4. Number of cases of acute respiratory illness which were medically attended among males and females in Pleasantville and Mt. Kisco, 1946–1949.