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Disabling Illness From Specific Causes Among Males and Females of Various Ages

Sample of White Families Canvassed at Monthly Intervals in the Eastern Health District of Baltimore, 1938–43

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Many field studies of illness in the general population have included little data on differentials between rates of males and females. This situation is largely due to the feeling that the data are biased because the informant is nearly always an adult female who, without any intention of misreporting, gives a more complete account of her own illnesses than of others in the household. However, absences because of sickness among employed females, as recorded by sick benefit associations and welfare departments of industrial establishments, indicate considerably more illness among women than men (*10*, *10a*, *11*, *11a*, *19*).

A few household surveys show that reported sickness declines as the time period covered by the survey increases (*2*, *4*). In a study some years ago in Cattaraugus County, New York, it was impossible to make regular visits because of bad weather, bad roads, and shortage of personnel. As a result the data were tabulated to show the incidence of illness for the first month prior to the interview in comparison with the second, third, fourth, and fifth months prior to the interview. To correct for seasonal variation, the computations were made by quarter-years (annual basis) and the quarterly rates were averaged to get annual figures.

Figure 1 shows by month the recorded incidence for several months prior to the date of the interview with the household informant. In this chart the date of the interview is represented by "0" on the horizontal scale, and the rate for the first month prior to the interview

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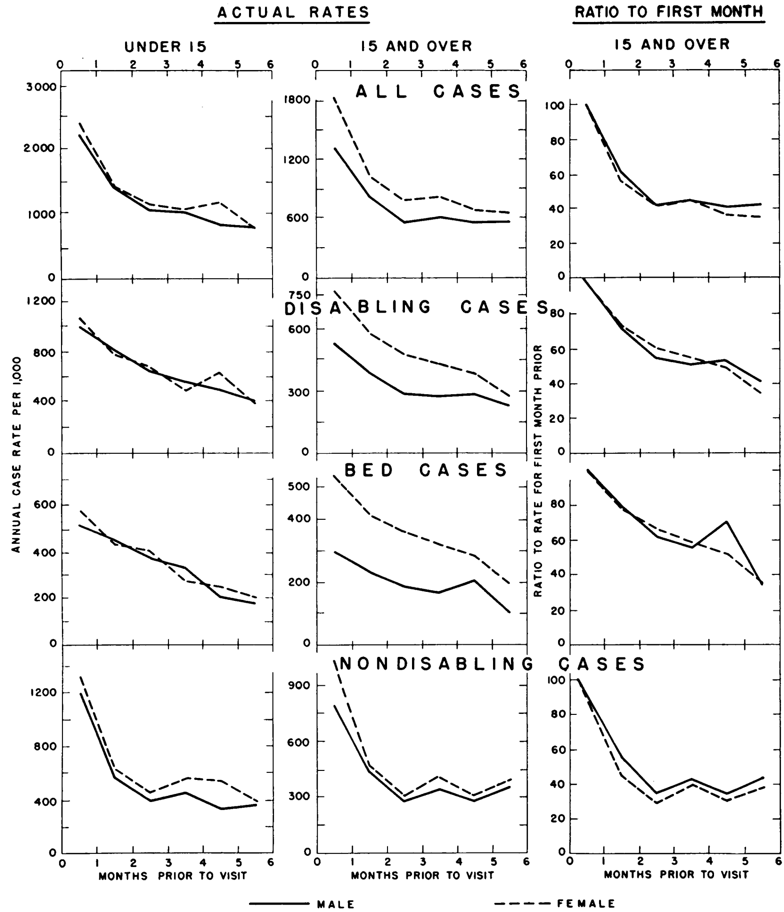

Figure 1. Recorded case incidence from all causes among male and female children and adults in different months prior to the family interview; and for adult males and females the ratio (percent) of the incidence in the second and later months to that in the first month prior to the interview—house-to-house surveys of illness in Cattaraugus County, N. Y.

NOTE: Rates are corrected for seasonal variation. On this chart zero on the horizontal scale represents the day of the interview, and the rate for the first month prior is plotted midway between 0 and 1 month; similarly, the second month prior is plotted midway between 1 and 2 months, etc.

is plotted halfway between "0" and "1," the rate for the second month prior to the interview between "1" and "2," etc. It is seen here that the recorded illness rates for both males and females of both age groups (under and over 15 years) decrease rather sharply as the time covered by the interview becomes more remote from the time of the interview.

Considering first the actual rates plotted in the two columns on the left of the chart, the differences between rates for males and females under 15 years of age are negligible as compared with the large excesses in the rates for adult females over those of adult males. Nevertheless, when the rates for persons over 15 years are put on a percentage basis with 100 representing the rate for the month of the interview (right-hand column), there is no consistent difference between the sexes in the relative drop of recorded cases as the period covered becomes more remote from the interview.

This is equivalent to saying that the relative or percentage excess of the rate for females over that for males is as great in the month of the interview as at a time several months prior to the interview. The only exception is nondisabling sickness which is higher for females

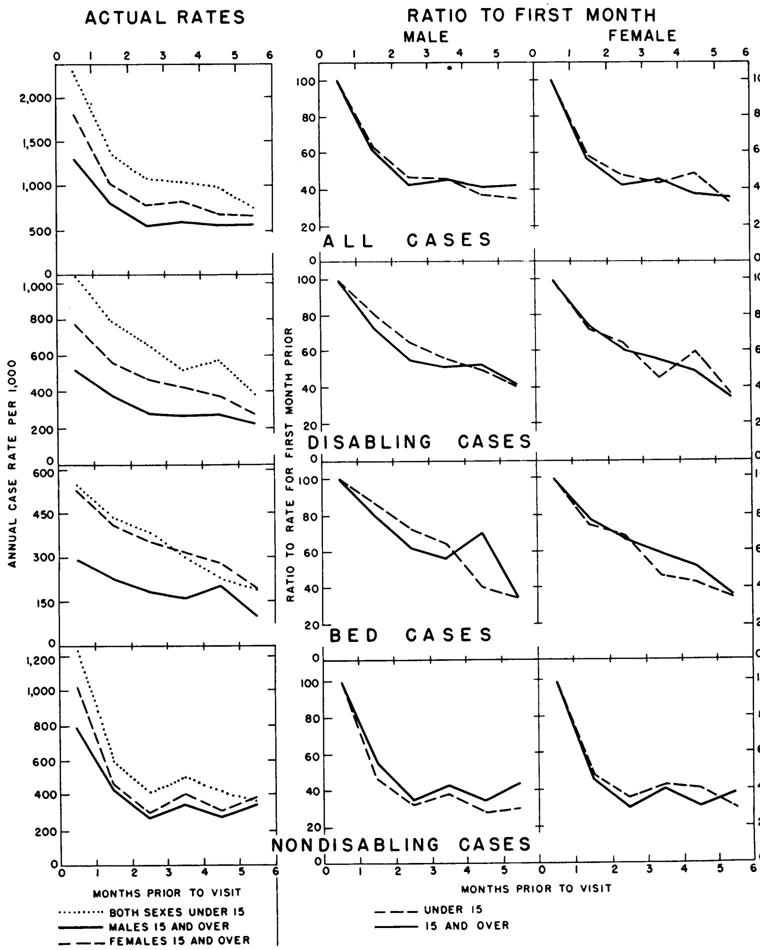

Figure 2. Recorded case incidence from all causes among male and female adults and among all children in different months prior to the family interview; and for children and adults of each sex, the ratio (percent) of the incidence in the second and later months to that in the first month prior to the interview—house-to-house surveys of illness in Cattaraugus County, N. Y. (For further details, see note to fig. 1.)

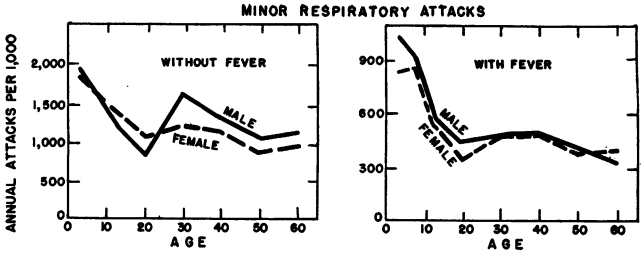

Figure 3. Incidence of minor respiratory attacks of two severity categories among males and females as reported semimonthly by the male household head—families of medical officers of the Army, Navy, Public Health Service, and the faculties of certain medical colleges.

of both the childhood and the adult age groups. This finding suggests that the higher rate for females is not entirely an artifact but is at least partially real. The possible forgetting of cases by the adult female informant is there, but it seems to be no greater for the male members of the household than it is for herself and other females. If the higher rate for females is entirely an artifact, it would seem to be due to lack of information about the illnesses of her husband and other adult males rather than a forgetting factor.

The discussion above refers to a direct comparison of rates of males and females within each of the two broad age groups. Figure 2 relates to the same matter, but the direct comparison is between rates in the two broad age groups within each sex group. From the actual rates on the left of figure 2, it is seen that children under age 15 have consistently more illness than adults in the various months prior to the interview, except for cases confined to bed. However, when these rates for males and females are put on a percentage basis with the rate for the first month prior to the interview as the base (100 percent), there is little consistent relative difference between recorded rates for girls and for adult females, except for nondisabling cases. Among males of the two age groups, disabling and bed cases for boys seem to fall less rapidly as the time covered becomes more remote from the interview, at least up to the fourth month prior to the interview. As might be expected, the recorded nondisabling cases fall off more rapidly than the more severe cases as the time interval covered becomes more remote from the date of the interview.

Figure 3 represents age incidence by sex of minor respiratory attacks among the families of medical officers of the United States Army, Navy, and Public Health Service and families of teachers in medical schools (*17*). A questionnaire about minor respiratory attacks in the family was sent to the medical officers and teachers at semimonthly intervals, so the man of the household became the reporter for the family. Most of the household heads in this type of family would be 25 years old and over. In the minor cases without fever,

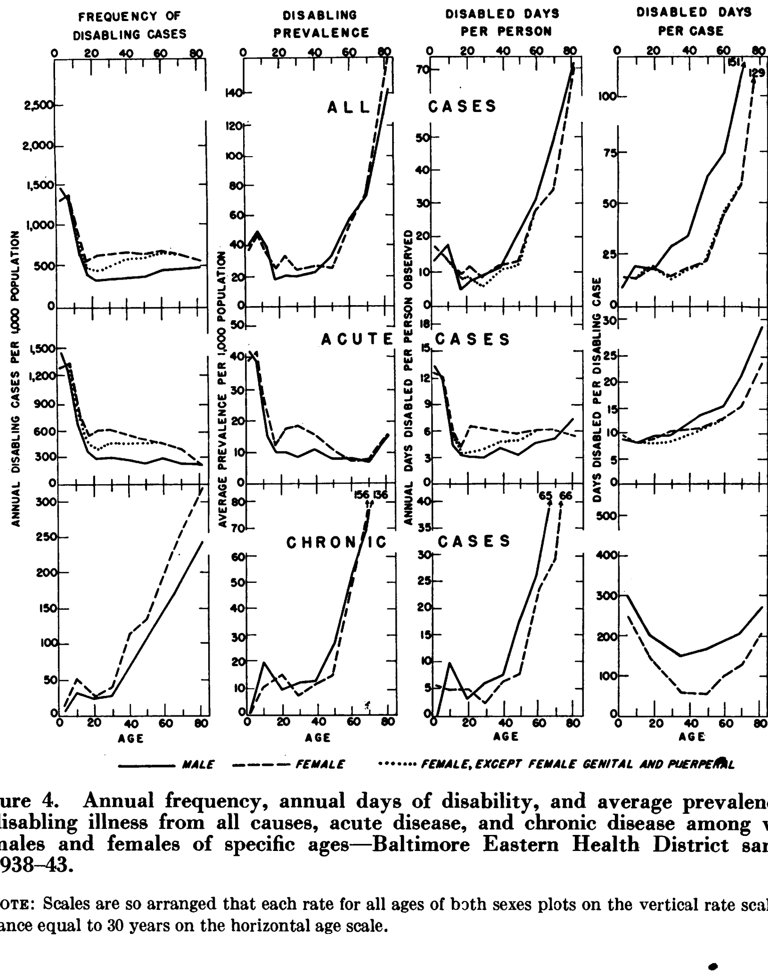

Figure 4. Annual frequency, annual days of disability, and average prevalence of disabling illness from all causes, acute disease, and chronic disease among white males and females of specific ages—Baltimore Eastern Health District sample, 1938–43.

NOTE: Scales are so arranged that each rate for all ages of both sexes plots on the vertical rate scale at a distance equal to 30 years on the horizontal age scale.

the reports were definitely higher for males of the ages over 25 years in contrast to the younger ages. However, for the more severe attacks which were accompanied by fever, rates for the two sexes were approximately the same.

In view of the fact that in the Baltimore study visits to the households were made at monthly intervals, there would be less forgetting than in studies in which the interviewer visited the family at less frequent intervals.

Consideration of the differences between males and females in extent of illness led to an analysis of what diseases and at what ages the largest differences are experienced. Numerous papers have discussed and presented data on sex differences in the extent of illness and mortality among humans (*1, 3, 7, 9, 12, 14*), and at least one contains an excellent summary of fetal and neonatal mortality among various species of animals (*1*).

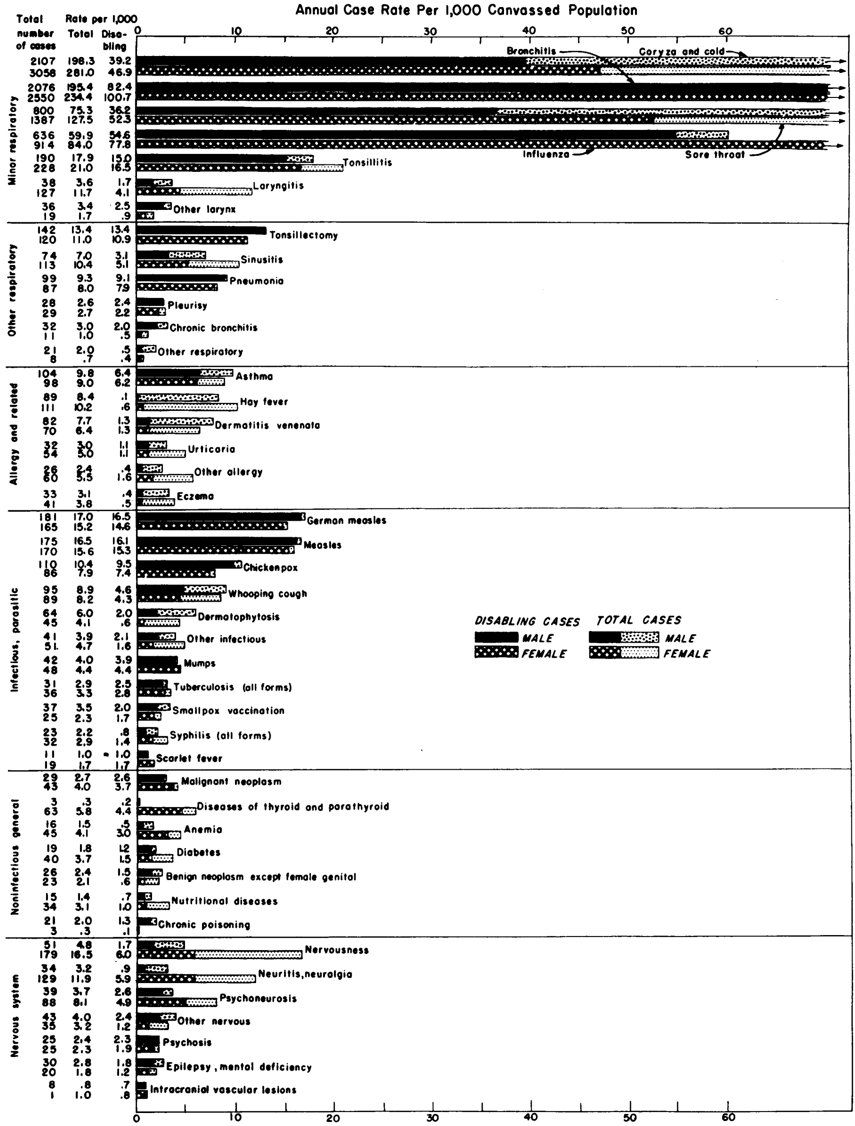

Figure 5. Annual total and disabling frequency of illness from specific causes among white males and females of all ages—Baltimore Eastern Health District sample, 1938–43.

The present study is confined largely to cases which disabled the patient for 1 day or longer, in the sense of causing inability to do work away from home or usual household duties at home, to attend school, or to carry on other usual activities. Of all of the disabling illnesses, 91 percent confined the patients to the house for 1 day or longer, and 56 percent confined them to bed for 1 day or longer. De-

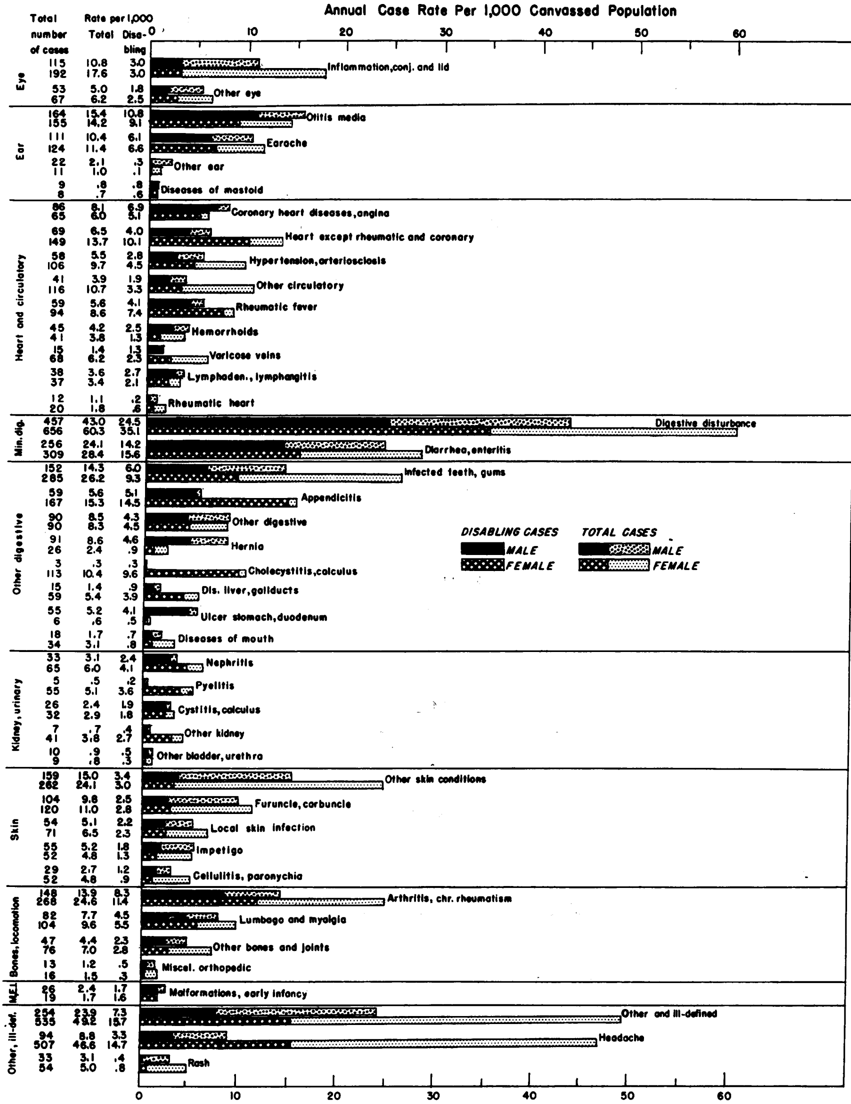

Figure 6. Annual total and disabling frequency of illness from specific causes among white males and females of all ages—Baltimore Eastern Health District sample, 1938–43.

tails as to what constituted disability and just how the cases were classified are discussed in preceding papers (*4*, *5*).

Selection and Characteristics of the Sample Population

The method of selecting the sample population to be studied has been described elsewhere (*8*), and considerable data comparing the characteristics of this sample with other population groups are shown in another publication (*4*). The canvassed families all lived in the

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original Eastern Health District of Baltimore, wards 6 and 7 (*6, 13, 15, 16*), adjacent to the Johns Hopkins School of Hygiene and Public Health and the Johns Hopkins Medical School and Hospital. From prior censuses conducted by the School of Hygiene and the U. S. Public Health Service, data were available on the number of houses in each square block (*18*). For the present study, monthly canvasses were made of entire city blocks running in approximately parallel diagonal directions throughout the two wards.

In the 35 blocks selected for canvassing, every household was covered except a negligible number which refused cooperation. It was not practicable to follow the original family when it moved out of the study blocks; therefore, the family moving into the house was added to the study. Of the 35 blocks, 17 were retained throughout the 5-year study; 17 of the other blocks were dropped at the end of the third year, and one was dropped within the first 2 months of the third year.

In the entire group of canvassed families in the sample (whole blocks canvassed without exception), 21,505 full-time person-years of life were observed during the 5-year period. The study years included the 12 months ending with May. The numbers of full-time person-years of life observed for each year were: 1938–39, 5,655; 1939–40, 5,547; 1940–41, 5,110; 1941–42, 2,682; and 1942–43, 2,511. The total number of different individuals observed 2 consecutive months or longer at any time during the 5 years was 9,917 (5,638 in blocks canvassed for 5 years and 4,279 in blocks canvassed for the first 3 years only).

Method of Collecting and Tabulating the Data

Trained interviewers visited all of the households at intervals of approximately 1 month, inquiring at each visit about any illness in the family since the preceding visit. The illnesses under study included all diagnoses of all severities, that is, disabling in the sense of causing the patient to lose 1 or more days from usual activities, and nondisabling which caused no loss of time from such activities. Thus, disabling illness is interpreted as a severity category rather than as illness affecting only employed workers.

The variety of diagnoses reported, the degree of severity of the cases of each disease, and age-specific case rates, including all illness (disabling and nondisabling), are presented in preceding papers (*4, 5*). Rates of disabling illness are used in this study because they should be better remembered and thus more comparable as between the sexes.

Tabulations of data on chronic diseases can be made in several ways. One useful way is to count the persons with specific chronic diseases and to count for each the number of days of disability during some specified period such as 2, 3, or 5 years. Such a count would give the load of chronic disease in terms of cases on hand or under treatment and the load in terms of days of disability, in the sense of inability to be about one's usual activities. Even better than this, in a large study, would be to record the number of new cases of chronic disease of each important diagnosis with the original date of onset within the study period. These data in terms of total cases or of cases that disabled the patient would give the increment or incidence of chronic disease within a given period. In a survey of a small population the numbers of new cases of chronic disease are small as compared with the total case load for disability or for medical care during the study period. This is particularly true for chronic diseases of fairly specific diagnoses.

To compare the case load of chronic disabling diseases with that of acute disabling diseases, it would seem feasible to use attacks or episodes of chronic diseases that caused the patient to be unable to be about his usual duties during some part of the study period. In this study this method was used for cases together with disabled days for acute and chronic diseases per person (well or sick) under observation. Chronic diseases were identified primarily by medical diagnosis and by the patient's history prior to and during the study. Diagnoses which might be either acute or chronic were classified as chronic unless later inquiry revealed no further illness or symptoms and there was no prior history of the disease. In this study chronic disease is considered as a single category. It includes temporary chronic illness and what has been called permanent chronic illness (disability during the entire study period).

However, one of the difficulties of dealing with chronic attacks or episodes in a 3- to 5-year study is that some individuals may report an excessive number of attacks. In this study a few individuals reported 30 or more disabling attacks or episodes of the same disease. The temporary chronic disabling cases had an average duration of 43 days of disability, with 724 days for permanent chronic cases, as compared with 10 days of disability per disabling case of acute disease.[1]

The effect of including patients with exceptionally large numbers of chronic disabling attacks of the same disease in the computation of age curves of disabling attacks or episodes is to make these curves of chronic diseases unreliable, except with an unusually large body of data. The rates for some of the diseases included in the tables and charts in this study are shown only in broad age groups; this procedure was followed to avoid distortion of the age curves because of the inclusion of a few individuals with an excessive number of episodes of the same disease.

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[1] Further tabulations are in progress which will consider the illnesses of persons under observation for specified periods such as 2, 3, or 5 years.

Table 1. *Illness rates[1] of various kinds from all causes among white males and females of specific ages canvassed at monthly intervals in a sample of the Eastern Health District of Baltimore, 1938–43*

[Disabling cases; sole and primary causes only]

Type of case	All ages		Age										
	Number of cases or days	Rate	Under 5	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75 and over
		Annual frequency of disabling cases per 1,000 males and females[2]											
All:													
Male	5, 792	545	1, 447	1, 272	687	380	320	333	350	358	439	455	480
Female	8, 195	753	1, 306	1, 349	884	569	625	648	656	637	691	632	555
Female, except genital and puerperal	7, 410	681	1, 304	1, 348	853	486	440	498	580	591	670	632	550
Acute:													
Male	5, 152	485	1, 442	1, 238	659	355	298	306	281	248	296	240	235
Female	7, 211	663	1, 296	1, 325	806	547	597	609	541	501	458	403	232
Female, except genital and puerperal	6, 474	595	1, 294	1, 323	775	464	412	462	470	466	457	403	227
Chronic:													
Male	640	60	5	31		23		27	69	110	168		245
Female	984	90	10	53		25		40	116	136	232		322
		Average prevalence of disabling cases per 1,000 males and females[2]											
All:													
Male	4, 467	35	43	51	40	19	21	21	24	34	60	78	151
Female	4, 981	38	39	49	36	26	35	25	27	26	56	80	171
Acute:													
Male	1, 839	14. 4	41. 6	37. 7	15. 4	10. 1	10. 1	8. 7	10. 6	7. 8	7. 8	7. 2	15. 2
Female	2, 373	18. 2	38. 5	41. 2	21. 8	12. 9	17. 0	18. 2	15. 5	10. 9	7. 7	7. 1	15. 4
Chronic:													
Male	2, 628	20. 6	1. 5	19. 5		9. 7		12. 2	13. 3	26. 5	52. 5	70. 5	135. 6
Female	2, 608	20. 0	. 6	11. 4		15. 4		7. 3	11. 9	15. 4	48. 5	72. 9	156. 0

		Annual days of disability per male and female observed [2]											
All:													
Male	170,695	16.1	13.3	18.4		4.9	7.1	9.2	11.3	21.2	30.9	49.1	72.3
Female	170,828	15.7	17.7	13.9		9.6	11.7	8.8	12.2	13.0	29.1	34.9	71.8
Female, except genital and puerperal	158,500	14.6	17.7	13.9		8.9	8.6	6.3	10.7	12.1	28.9	34.9	71.7
Acute:													
Male	53,593	5.0	13.2	11.8	4.4	3.2	3.1	3.0	4.0	3.2	4.6	5.1	7.2
Female	73,617	6.8	12.4	12.1	6.1	4.1	6.7	6.3	5.9	5.7	6.0	6.1	5.5
Female, except genital and puerperal	62,175	5.7	12.4	12.1	5.9	3.4	3.6	3.9	4.8	4.9	6.0	6.1	5.4
Chronic:													
Male	117,102	11.0	.1	10.4		2.8		6.2	7.4	18.0	26.3	44.1	65.0
Female	97,211	8.9	5.3	5.1		5.3		2.5	6.3	7.3	23.1	28.8	66.3
		Days of disability per disabling case for males and females											
All:													
Male	5,792	29	9	19		17		28	32	59	70	108	151
Female	8,195	21	14	13		18		14	19	20	42	55	129
Female, except genital and puerperal	7,410	21	14	13		19		13	18	21	43	55	130
Acute:													
Male	5,152	10.4	9.1	8.5		9.6		9.9	13.6		15.5	21.1	30.8
Female	7,211	10.2	9.6	8.4		9.4		10.4	11.2		13.1	15.1	23.7
Female, except genital and puerperal	6,474	9.6	9.6	8.5		8.0		8.5	10.3		13.0	15.1	23.6
Chronic:													
Male	640	183	[3] 291		[4] 196			147		164	185	205	266
Female	984	99	245		141			57		54	99	126	206

[1] Cases in this table represent disabling attacks or episodes of acute and of chronic diseases. Thus, acute and chronic cases are on the same basis and the same individual may have had more than one attack or episode of the same acute or chronic disease within a given study period. All tabulations for all causes count cases and days of disability only once, regardless of the number of diagnoses required to describe the diseases.

See text for method of identifying chronic diseases.

For all causes combined the great majority of the disabling cases are acute with onset within the patient's period of observation. Thus, the combined age curve for cases of all causes resembles the frequency of acute disabling cases more closely than the age curve of disabling prevalence.

Days of disability per person observed is a count of the days within the study period only, without respect to dates of onset or termination of the disability. Thus, this day rate for chronic diseases is the same whether it is counted as the total days of disability suffered during a given time by an individual with a chronic disease or whether it refers to the disability summated from the disabling attacks or episodes.

[2] Rates, except prevalence, are based on full-time years of life observed (see table 2); prevalence rates are weighted averages of prevalence for the 60 months of the survey, the weights being proportional to the number of individuals covered by the interviews during the month. That is, the population used was the total individuals covered by the interviews, and the cases were the total persons who were reported as disabled at the time of the interview. The interviews (populations) for computing prevalence rates were: All ages: males 127,492, females 130,575; under 5: males 9,721, females 9,424; 5–9: males 10,196, females 8,830; 10–14: males 10,424, females 10,530; 15–19: males 12,499, females 12,141; 20–24: males 11,068, females 11,978; 25–34: males 22,604, females 22,559; 35–44: males 18,561, females 19,510; 45–54: males 16,741, females 16,148; 55–64: males 9,276, females 10,692; 65–74: males 5,148, females 6,187; 75 and over: males 1,180, females 2,532.

[3] Data for under 10 years.

[4] Data for 10–24 years.

Disabling Illness from All Causes Among Males and Females of Specific Ages

Before considering illness from the several causes, it may be profitable to summarize disabling illness in males and females of specific ages as measured by different types of rates. Figure 4 presents such a summary, including for each type of case the rate for all causes for males and females, respectively, and, where available, a second rate for females exclusive of female genital and puerperal conditions. It was found that among males illness relating to the genital organs was negligible; thus no second line appears on the chart for these conditions.

As in the preceding study of illness for both sexes combined (*5*), four types of illness rates from all causes are shown—annual frequency of disabling cases, average prevalence of disabling sickness as of the day of the interview (average over the 60 months covered), annual days of disability per person (sick or well) observed, and days of disability per disabling case. Each of these measures is shown by sex and age and separately for acute and chronic conditions in figure 4 and table 1.

In terms of the average prevalence of disabling illness at the time of the interview, there is little consistent difference between the sexes in the rates for all types of cases combined (35 and 38 per 1,000 males and females, respectively, of all ages) or for chronic cases only (21 and 20 per 1,000 males and females of all ages). For the annual days of disability per person observed, the total rates (16.1 and 15.7 days per male and female of all ages) and the chronic rates (11.0 and 8.9 days per male and female of all ages) both indicate little difference between the sexes. Although the actual difference is small for all ages combined, there is an excess in total cases for males after 45 years of age. The similarity in the age curves for the rates of prevalence and days lost per person observed would be expected, inasmuch as both types of rates are measures of days lost. In contrast, the case frequency per 1,000 persons for both total (545 and 753 per 1,000 males and females, respectively, of all ages) and chronic conditions (60 and 90 per 1,000 males and females of all ages) are considerably and rather consistently higher for females than males. The result of these various differences is that days of disability per disabling case for both total (29 and 21 per case for males and females of all ages) and chronic conditions (183 and 99 per case for males and females of all ages) are definitely and rather consistently higher for males than females.

The results discussed in the several preceding paragraphs could come from an understatement of the chronic diseases present among males, since the informant was usually an adult female who would know her own illness history better than that of other members of the household. However, it could be the result of the not uncommon practice of employed men obtaining diagnosis and medical care for their illnesses only after their health has been considerably impaired, with more time lost per case than among those who seek diagnosis and treatment before their illnesses have progressed to serious stages.

The prevalence data refer to the day of the interview and should be more accurate than data involving memory over even as short a period as one month. The fact that the prevalences of illness are not very different for men and women is significant in view of the greater accuracy of that type of rate. However, prevalence is greatly influenced by the durations of illnesses, and is a measurement of rather different factors than appear in a count of case frequency over a period of time.

Illness From Specific Diseases Among Males and Females of All Ages

Figures 5 and 6 afford a comparison of case rates for specific diagnoses for males and females of all ages. The darker part of the bars indicates the disabling case rate, and the total length of the bar represents the rate for all cases, both disabling and nondisabling.

As a first approximation in evaluating sex differences in illness rates it may be worthwhile to consider the data in figures 5 and 6 in terms of the number of disagnoses with higher rates for females than males, each diagnosis being counted regardless of whether it represents an important or a trivial disease. Confining the consideration to diseases only, and further to diseases common to both sexes, 87 different diagnoses are shown in the bar charts. These 87 diagnoses are classified below into three categories for each sex:

	Number diagnoses	
Case rates for females higher than for males for both disabling and total cases	49	
Case rates for females the same as for males for disabling cases but higher for the total cases	2	
Case rates for females higher than for males for disabling cases but lower for the total cases	1	
Total with case rates higher for females than males	52	(60%)
Case rates for males higher than for females for both disabling and total cases	28	
Case rates for males the same as for females for disabling cases but higher for total cases	1	
Case rates for males higher than for females for disabling cases but lower for total cases	6	
Total with case rates higher for males than females	35	(40%)
Total diagnoses common to the two sexes	87	(100%)

Breaking down the above data into total and disabling cases, 57 (66 percent) of the 87 tabulated diagnoses common to both sexes had higher total rates for females, and 50 (60 percent) of the 84 diagnoses had higher disabling rates for females, the other 3 being the same for males and females.

Of the 57 diagnoses with higher total rates for females, 32 (56 percent) had rates for females that were 50 percent or more above those for males and 19 (33 percent) had rates that were 2 or more times those for males. Of the 50 diagnoses with higher disabling rates for females, 27 (54 percent) had disabling rates that were 50 percent or more above those for males and 17 (34 percent) had rates that were 2 or more times those for males.

Males had higher total rates than females in 30 (34 percent) of the 87 diagnoses, and higher disabling rates in 34 (40 percent) of the 84 diagnoses, the other 3 being the same for males and females. Of the 34 diagnoses with higher disabling rates for males, 13 (38 percent) had rates that were 50 percent or more above those for females, and 9 (26 percent) had rates that were 2 or more times those for females.

Although it was necessary to cut off the bars for the minor respiratory diseases, it is evident that they show the largest rates in terms of cases. In terms of total as well as disabling cases, a high proportion of these diagnoses show higher rates for females than for males of all ages. Large percentage differences occur for laryngitis, and, even if other diseases of the larynx are added to laryngitis, the percentage excess for females over males is considerably more than the average. There are no outstanding excesses for either sex in the rates at all ages from the acute infectious diseases. Although the numbers of disabling cases are small, several noninfectious general diseases have much higher disabling rates for females than males; among these are diseases of the thyroid and parathyroid glands, cholecystitis, diseases of the liver and gall ducts, nervousness, neuritis and neuralgia, headache, and heart disease except coronary and rheumatic. In all of these diagnoses, the rates for women are two or more times the rates for men. There are similarly outstanding differences in a few diseases that have higher disabling rates for males; among these are ulcer of the stomach and duodenum, chronic bronchitis, dermatophytosis, benign tumors except of the female genital organs, hernia, and most types of accidents, although the latter are not included in this paper.

Age and Sex Variation in Disabling Illness From Specific Diseases

Figures 7, 8, and 9, and table 2 show disabling case rates for certain diagnoses for males and females of specific ages. For the most part these diagnoses have a sufficiently large number of disabling cases to give relatively stable rates. However, where the differences in the

Table 2. *Annual disabling[1] case rates per 1,000 population from specific causes among white males and females of various ages canvassed at monthly intervals in a sample of the Eastern Health District of Baltimore, 1938–43*

[Sole, primary, and contributory causes]

Diagnoses with code numbers[2]	All ages		Age					
	Number of cases	Rate[3]	Under 5	5–14	15–24	25–44	45–64	65 and over
Influenza and grippe (430):								
Male	580	54.59	66.67	62.25	50.43	54.50	51.66	39.85
Female	846	77.75	81.53	78.12	62.19	90.99	72.87	67.40
Bronchitis (471, 479):								
Male	896	84.34	227.16	165.21	50.43	49.55	62.73	43.64
Female	1,101	101.19	276.43	165.53	63.68	77.87	75.10	66.02
Coryza and cold (440):								
Male	416	39.16	175.31	67.48	27.00	18.36	15.68	13.28
Female	510	46.87	165.61	90.51	33.83	30.23	24.14	8.25
Tonsillitis and sore throat (460, 461, 466):								
Male	544	51.20	192.59	113.44	37.19	27.11	11.53	3.80
Female	748	68.74	169.43	146.31	56.22	47.63	39.34	15.13
Laryngitis (467):								
Male	18	1.69	3.70	1.16	1.02	2.33	.92	1.90
Female	45	4.14	5.10	3.72	2.99	5.99	3.58	--------
Pneumonia (481–489):								
Male	97	9.13	37.04	13.96	3.57	4.95	6.00	11.39
Female	86	7.90	28.03	9.30	4.48	5.42	5.36	12.38
Tonsillectomy (450):								
Male	142	13.37	33.33	45.96	9.17	4.95	.46	--------
Female	119	10.94	21.66	38.44	9.45	5.70	.45	--------
Asthma (501):								
Male	68	6.40	17.28	17.45	1.53	3.79	3.23	1.90
Female	68	6.25	2.55	7.44	9.95	4.85	5.81	5.50
Benign and malignant neoplasms (100–199, 657, 667):								
Male	44	4.14	--------	--------	3.57	1.46	11.07	15.18
Female	91	8.36	6.37	--------	2.99	9.70	12.52	24.76
Diabetes (210–219):[4]								
Male	13	1.22	--------	--------	--------	[4] .65	[4] 4.30	[4] 4.48
Female	16	1.47	--------	--------	--------	.62	1.49	8.44
Diseases of thyroid and parathyroid glands (220–232):								
Male	2	.19	--------	--------	--------	.58	--------	--------
Female	48	4.41	--------	1.24	1.00	8.27	6.71	--------
Neuritis and neuralgia (316, 337, 784):								
Male	10	.94	--------	1.16	--------	.87	2.31	--------
Female	64	5.88	--------	.62	6.47	6.27	10.28	6.88
Psychoneurosis and nervousness (330, 786):								
Male	46	4.33	--------	1.16	2.55	3.50	10.61	7.59
Female	118	10.84	--------	1.24	8.96	14.26	21.01	1.38
Inflammation of conjunctiva and eyelid (347):								
Male	32	3.01	11.11	9.31	1.02	--------	.82	--------
Female	33	3.03	8.92	9.92	1.49	--------	1.08	--------
Earache (351):[5]								
Male	65	6.12	34.57	14.54	3.06	.87	.92	1.90
Female	72	6.62	31.85	16.74	2.49	3.14	1.34	1.38
Otitis media (350):[5]								
Male	115	10.82	81.48	33.74	2.55	2.91	.92	--------
Female	99	9.10	57.32	19.84	3.98	4.56	1.34	1.38
Rheumatic fever, rheumatic heart (200–204, 360, 365):[4] [5]								
Male	46	4.33	--------	16.87	[4] 1.82	[4] 1.36	[4] 4.62	
Female	86	7.90	2.55	17.36	6.68	9.08	1.85	
Coronary heart disease and angina (382):								
Male	73	6.87	--------	--------	--------	1.75	16.14	60.72
Female	55	5.05	--------	--------	--------	.29	9.39	45.39
Heart except rheumatic and coronary (370, 380, 381, 388, 389):								
Male	43	4.05	--------	--------	.51	2.33	9.23	24.67
Female	110	10.11	--------	.62	1.00	3.99	28.16	41.27
Hypertension, arteriosclerosis (290–295, 307, 390, 399, 400):								
Male	37	3.48	--------	1.75	--------	1.46	8.76	18.98
Female	58	5.33	--------	3.72	--------	1.71	10.73	30.26
Varicose veins (410–414):								
Male	14	1.32	--------	--------	.51	.58	2.77	9.49
Female	25	2.30	--------	--------	--------	.86	6.26	11.00

See footnotes at end of table.

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Table 2. *Annual disabling*[1] *case rates per 1,000 population from specific causes among white males and females of various ages canvassed at monthly intervals in a sample of the Eastern Health District of Baltimore, 1938–43*—Continued

[Sole, primary, and contributory causes]

Diagnoses with code numbers[2]	All ages: Number of cases	All ages: Rate[3]	Age: Under 5	5–14	15–24	25–44	45–64	65 and over
Hemorrhoids (415):								
Male	27	2.54	-------	-------	0.51	4.37	4.15	3.80
Female	14	1.29	-------	-------	.50	2.57	1.79	-------
Digestive disturbance (560–570):								
Male	260	24.47	71.60	70.39	11.21	9.62	9.23	11.39
Female	382	35.11	77.71	73.16	21.89	19.40	28.61	37.14
Diarrhea and enteritis (009, 530–539):								
Male	151	14.21	87.65	19.20	6.11	5.54	6.00	5.69
Female	170	15.62	62.42	17.36	7.96	13.12	9.83	12.38
Infected teeth and gums (510):								
Male	64	6.02	2.47	10.47	10.19	5.54	2.31	-------
Female	101	9.28	-------	22.94	14.43	7.13	4.47	-------
Ulcer of stomach and duodenum (520–527):								
Male	44	4.14	-------	-------	1.02	8.16	6.46	-------
Female	5	.46	-------	-------	-------	.86	.89	-------
Appendicitis (540–549):								
Male	54	5.08	1.23	6.40	10.19	4.66	2.77	-------
Female	158	14.52	-------	17.98	28.86	15.69	7.15	-------
Hernia (550–559):								
Male	49	4.61	2.37		2.55	6.41	6.00	5.69
Female	10	.92	1.25		.50	.86	.89	1.38
Diseases of gallbladder, gall ducts, and liver (580–589):								
Male	13	1.22	-------	.58	.51	.87	3.23	1.90
Female	146	13.42	2.55	1.86	2.49	21.68	23.69	9.63
Nephritis (375, 600–607):								
Male	26	2.45	-------	-------	.51	.58	6.92	15.18
Female	45	4.14	-------	-------	.50	2.57	9.39	19.26
Pyelitis (610):[4]								
Male	2	.19	-------			-------	.92	-------
Female	39	3.58	[4] 5.92	[4] 3.81		2.85	3.58	1.38
Arthritis and chronic rheumatism (720–729, 783):								
Male	88	8.28	-------	1.16	1.02	7.87	18.91	30.36
Female	124	11.40	-------	3.72	1.49	5.99	25.93	49.52
Lumbago and myalgia (740, 782):								
Male	48	4.52	1.23	2.33	4.08	5.25	6.92	3.80
Female	60	5.51	1.27	3.10	2.49	6.27	9.39	8.25
Headache (785):								
Male	35	3.29	-------	7.56	6.62	2.33	.37	
Female	160	14.70	1.27	11.16	7.46	18.54	20.58	
Population (years of life):								
Male	10,624		810	1,719	1,963	3,431	2,168	527
Female	10,881		785	1,613	2,010	3,506	2,237	727

[1] Disabling cases refer to those that caused the patient to lose 1 or more days from work, school, housework, or other usual activities. In this table each diagnosis includes all disabling cases of the given disease whether it was the sole, primary, or contributory cause of the illness. Thus, the sum of all cases in this table may add to more than the total in table 1 which includes only sole or primary causes. For chronic diseases each disabling attack or episode (continuous period of disability) is counted as a separate case. All ages includes a few of unknown age.

[2] Diagnosis code numbers as given in A Manual for Coding Causes of Illness, Public Health Service Miscellaneous Publication No. 32, G. P. O., Washington, 1944. This table includes selected specific causes rather than every cause that appeared in table 6 of reference (*4*) and table 2 of reference (*5*). Some diagnoses with insufficient disabling cases for age curves for each sex are omitted but some are combined with other similar diagnoses. See notes to table 1 and text for further details.

[3] Rates per 1,000 in this table are computed with 2 decimals for convenience in making further computations based on the rates even when the last digit is not significant. The total number of cases for each diagnosis is given in the first column and the populations for each age are at the bottom of the table in terms of full-time person-years of life.

[4] Rates in table that are not for standard ages in column headings: Diabetes, ages are 35–44, 45–54, 55+; rheumatic fever, ages are 15–34, 35–54, 55+; pyelitis, ages are under 10, 10–24.

[5] Rates in table are for 5–14 but those plotted are: Earache, ages 5–9, M. 21.18, F. 27.17; ages 10–14, M. 8.06, F. 7.98. Otitis media, 5–9, M. 31.76, F. 29.87; 10–14, M. 5.75, F. 4.56. Rheumatic fever, 5–9, M. 14.12, F. 13.59; 10–14, M. 19.56, F. 20.52

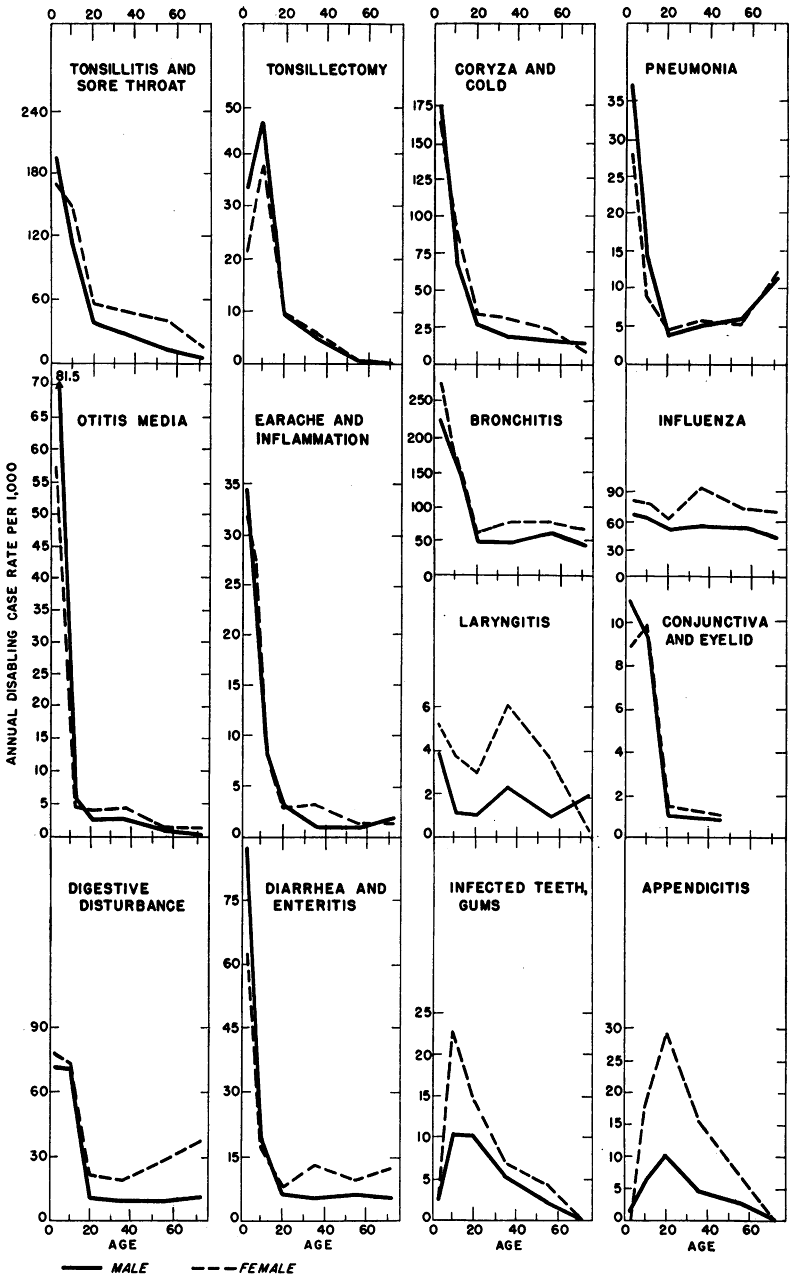

Figure 7. Annual disabling case frequency from specific causes per 1,000 population among white males and females of various ages—Baltimore Eastern Health District sample, 1938–43.

NOTE: Scales so arranged that each rate for all ages of both sexes plots on the vertical rate scale at a distance equal to 30 years on the horizontal age scale.

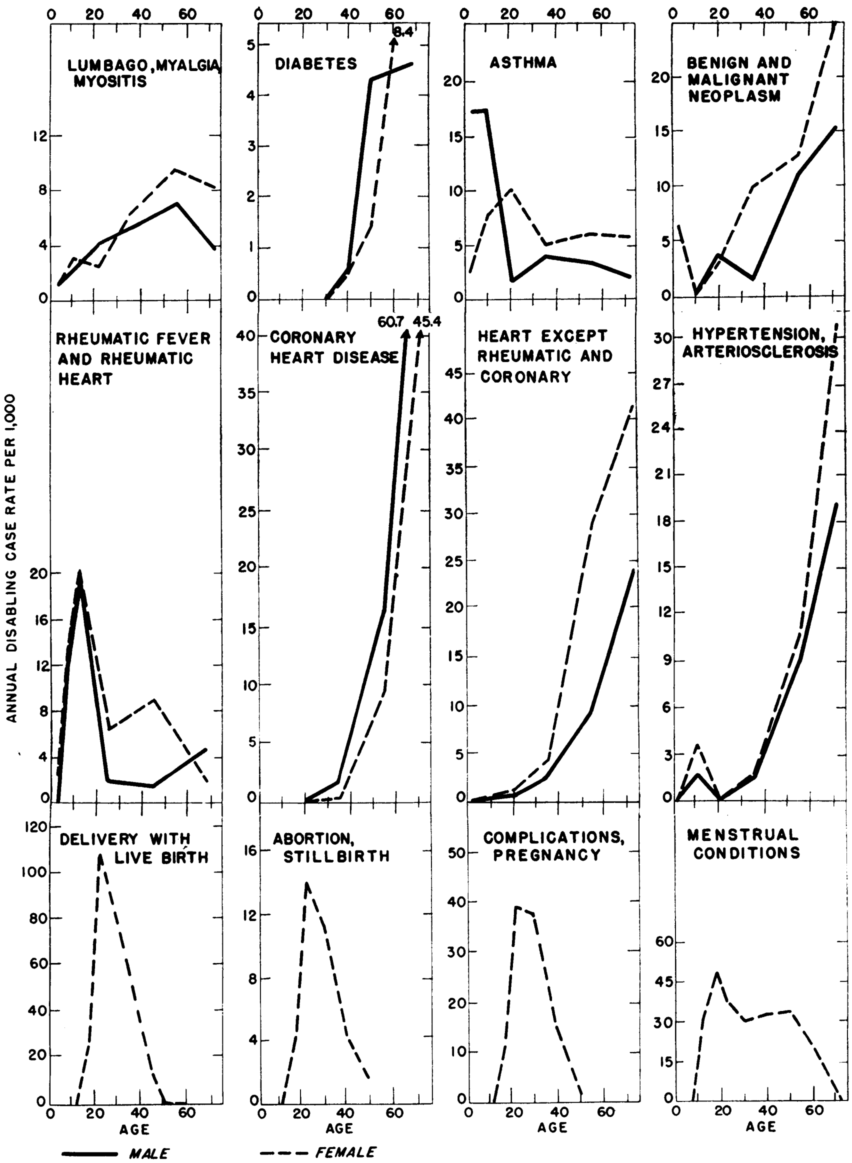

Figure 8. Annual disabling case frequency from specific causes per 1,000 population among white males and females of various ages—Baltimore Eastern Health District sample, 1938–43. (For further details, see note to fig. 7.)

rates for males and females are large and consistent, charts have been made even though the numbers of such cases for one of the two sexes are extremely small. Many diagnoses in which there were too few cases to be of any value in comparing disabling age-specific rates for males and females are omitted from the age curves (figs. 7, 8, and 9)

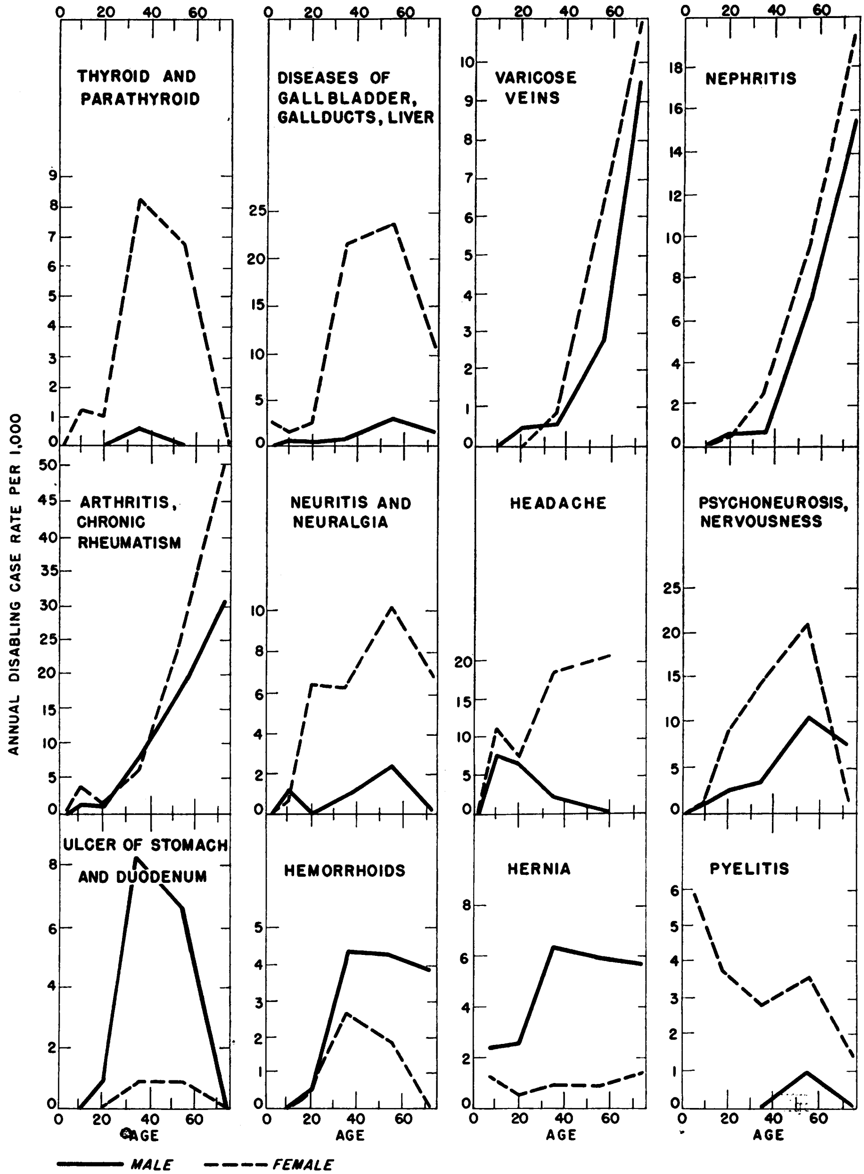

Figure 9. Annual disabling case frequency from specific causes per 1,000 population among white males and females of various ages—Baltimore Eastern Health District sample, 1938–43. (For further details, see note to fig. 7.)

although practically all of them are included in the bar charts (figs. 5 and 6).

There is no need for detailed discussion of these charts. They are intended to show how consistent are the sex differences and at what ages the largest excesses occur. For example, in digestive disturbances and diarrhea the consistent differences come largely in the adult ages, although the latter diagnosis shows considerable difference under 5 years of age. However, in appendicitis and infected teeth all of the age groups except the youngest and oldest show excesses in the disabling rates for females over males.

In figure 9 there is a collection of diagnoses that show extremely wide differences between the disabling rates for males and females—so wide that the sex that has the smaller rate has so few cases that they are inadequate for obtaining a reliable age curve. However, the consistently high rates for the one sex indicate a difference which seems to be significant. These diseases are, for the most part, those that affect the adult rather than the childhood ages, and as a rule they affect the young and middle-aged adults rather than persons in the older ages. The large and consistent excess in disabling rates for males in such diseases as peptic ulcer, hernia, coronary heart disease, and hemorrhoids, are striking but no more so than the excess in disabling rates for females in diseases of the thyroid and parathyroid glands, cholecystitis and diseases of the liver and gall ducts, varicose veins, laryngitis, nephritis, and the minor nervous disorders. In spite of some bias due to women being the usual reporters for the household, these large differences suggest that, in general, women are sick more frequently than men.

Table 3. *Annual disabling acute infectious diseases[1] of childhood per 1,000 white males and females of various ages canvassed at monthly intervals in a sample of the Eastern Health District of Baltimore, 1938-43.*

[Sole, primary, and contributory causes]

Diagnoses with code numbers [2]	All ages		Age				
	Number of cases	Rate [3]	Under 5	5-9	10-14	15-24	25 and over
Measles (013):							
Male	171	16.10	107.41	94.12	2.30	----------	0.33
Female	166	15.26	103.18	95.11	7.98	2.99	.31
German measles (014):							
Male	175	16.47	44.44	85.88	57.54	5.09	.98
Female	159	14.61	40.76	89.67	50.17	6.97	.46
Whooping cough (011):							
Male	49	4.61	38.27	20.00	----------	----------	.16
Female	47	4.32	45.86	13.59	1.14	----------	----------
Mumps (016):							
Male	41	3.86	13.58	25.88	6.90	----------	.33
Female	48	4.41	15.29	39.40	3.42	.50	.46
Chickenpox (015):							
Male	101	9.51	55.56	61.18	2.30	----------	.33
Female	81	7.44	43.31	59.78	2.28	.50	----------
Population (years of life):							
Male	10,624		810	850	869	1,963	6,126
Female	10,881		785	736	877	2,010	6,470

[1] [2] [3] See notes 1, 2, and 3 to table 2.

Table 3 shows rates for the acute infectious diseases of childhood among boys and girls, and table 4 shows rates for female genital and puerperal diseases.

Table 4. *Annual disabling female genital and puerperal cases* [1] *per 1,000 white females of various ages canvassed at monthly intervals in a sample of the Eastern Health District of Baltimore, 1938-43.*

[Sole, primary, and contributory causes]

Diagnoses with code numbers [2]	All ages		Age					
	Number of cases	Rate [3]	10–14	15–19	20–24	25–34	35–44	45–54
Menstrual disorders (663–664) [4]	285	26.19	30.79	48.42	37.07	29.79	32.60	33.43
Female genital diseases except menstrual disorders (650–656; 658–661; 666; 668–669) [5]	101	9.28	1.14	6.92	11.02	24.47	10.46	10.40
Abortions and stillbirths (674–677; 694–695)	48	4.41	--------	3.95	14.03	11.17	4.31	1.49
Live births (670–673)	324	29.78	--------	23.72	107.21	77.13	28.91	.74
Complications of pregnancy and childbirth (680–689; 690–693; 696; 699)	153	14.06	--------	11.86	39.08	37.77	14.76	2.23
Population (years of life)	10,881		877	1,012	998	1,880	1,626	1,346

[1] [2] [3] See notes 1, 2, and 3 to table 2.
[4] Rate for 55–64 for menstrual disorders is 20.20.
[5] Rates for female genital except menstrual are: Under 5, 1.27; 5–9, 1.36; 55–64, 2.24; 65 and over, 1.38.

Summary

This report deals mainly with disabling illness rates for detailed diagnoses among males and females of specific ages. The data are from the 5-year study made by monthly visits to a sample of the population of the Eastern Health District of Baltimore.

The annual recorded illnesses from all causes which disabled the patient for 1 day or longer amounted to 545 per 1,000 males and 753 per 1,000 females. Annual rates of disabling attacks or episodes of chronic diseases were 60 and 90 per 1,000 males and females, respectively.

Annual days of disability from all causes amounted to 16.1 and 15.7 per male and female observed; 11.0 and 8.9 of these days of disability for males and females, respectively, were due to chronic diseases. However, average prevalence over the 60 months of the study indicated that an average of 35 and 38 per 1,000 males and females, respectively, were disabled on the day of the family interview. These various sex differences in rates are fairly consistent in the several ages (fig. 4).

Annual frequency rates are shown for males and females of all ages for all cases and for disabling cases by detailed diagnoses. Of the 87 tabulated diseases common to both sexes, 60 percent showed higher rates for females and 40 percent showed higher rates for males of all ages combined. Nearly all of the diagnoses with higher disabling rates for females also showed higher total rates (disabling plus non-disabling) for females; the same statement is approximately true for males (figs. 5 and 6).

A few diseases have large and rather consistent sex differences in disabling rates, notably peptic ulcer, hernia, coronary heart disease, and hemorrhoids for men; and for women, thyroid diseases, cholecystitis and liver diseases, varicose veins, nephritis, and the minor nervous disorders. Many other diseases have smaller sex differences in case rates, but the picture does not indicate such higher rates for women as to suggest that the excesses are entirely an artifact of reporting (figs. 7, 8, and 9).

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Elk, Winter Ticks, and Rocky Mountain Spotted Fever: A Query

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A case of Rocky Mountain spotted fever following tick-bite was reported on the Olympic Peninsula in Washington by Semler (*9*) under circumstances which suggest that the vector was probably the winter tick, *Dermacentor albipictus*, a species heretofore not under suspicion as a carrier because of its presumed one-host habits.

In view of physical findings including rash and history of tick-bite during the previous week, the 35-year-old patient, a regular employee in a plywood mill in Hoquiam, Wash., was hospitalized November 18, 1949, with a tentative diagnosis of Rocky Mountain spotted fever. Chloromycetin therapy was immediately instituted and this probably accounted for subsequent negative complement-fixation findings in accordance with other experience where effective antibiotics have been used early in the course of the disease. This patient was completely afebrile by the third hospital day and his rash had faded by the fourth day. His serum, 4 months later, showed positive *Proteus* OX_{19} agglutination in a dilution of 1:320, which is at least presumptive confirmation of his infection with Rocky Mountain spotted fever.

The authors visited the area in August 1950, and failed to obtain any ticks from the vegetation by flagging, but they obtained the following additional facts by interviewing the patient and others concerned: Three days before onset (a short incubation period), the patient took the day off from his work in Hoquiam and assisted his father and others on his father's farm, between Humptulips and Copalis Junction, in skinning and dressing an elk which others had shot the day before in the adjoining wooded section. This was the only place outside of Hoquiam where the patient had been for a considerable time previous to illness.

Those present noted that ticks were crawling on the hide of the elk, which was pushed under the table on which the patient did some of the butchering. That evening the patient felt an itching near his navel and on examination found an attached tick which his father pulled loose. The patient recognized it only as a fairly large tick, but the father, on being shown both sexes of *D. albipictus* and *Ixodes pacificus* (the two most likely species considering the locality, season,

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and host), without hesitation selected the male of *D. albipictus* as most similar to the tick removed.

D. albipictus has been recorded from the Olympic Peninsula, but no records of *D. andersoni*, the usual vector of spotted fever in the Northwest, are known from this part of the State. November would be very late for adults of the latter to be active. The locality is too far north for either *D. occidentalis* or *D. variabilis* which occur on the Pacific coast farther south earlier in the season. Though there are records of *I. pacificus* on black-tailed deer in California, the season is also late for this according to the records of Cooley and Kohls (*3*). Circumstantial evidence is overwhelmingly in favor of *D. albipictus* as the vector in this instance.

Until now it has been of only academic interest that some of Ricketts' (*7*) early transmission studies in proving the tick-vector theory were undoubtedly with *D. albipictus*. Ricketts stated that three nymphs which had been removed a few days previously from horses in the vicinity of Hamilton, Mont., were fed on a donor guinea pig on January 3. The feeding of the nymphs on horses in midwinter in western Montana leaves little room for doubt, on the basis of present-day knowledge not available then, that the species concerned was *D. albipictus*. One resulting adult within 6 days of molting attached itself to a fresh guinea pig (again indicating *D. albipictus*) and caused "a highly virulent infection" which was fatal in 6 days. Two other guinea pigs to which this tick was transferred for further feeding also had severe infections and died in 8 and 9 days, respectively; one showed an incubation period of only 2 days. This tick is therefore capable of carrying virulent spotted fever.

There is the further possibility that some of the ticks collected from horses, with which Ricketts demonstrated natural infection, were also this species, though unfortunately the dates of collection are not recorded. However, these could as easily have been *D. andersoni* collected in the spring. Because little was known of the taxonomy of ticks at that time, he reported all his observations for *D. "occidentalis,"* but his seasonal and biological accounts clearly concern both *D. albipictus* and *D. andersoni*. It is of further interest that he records being shown "a larval tick which had attached itself to the ear of a child in December [clearly *albipictus*] and in April [possibly so] a nymph obtained from a similar source." Immature stages of ticks are very rarely found on persons in western Montana.

Attachment of *D. albipictus* to man rarely has been observed even in areas where it is abundant on animals, yet hundreds of opportunities occur every winter when large game animals are being killed and dressed. Bishopp and Trembley (*1*) give only one record. During the elk slaughter in Yellowstone Park in January 1950, Philip learned of one other instance in which two adult ticks attached themselves to a ranger on different occasions (in previous winters) while he was working with elk hides.

During this visit, 51 blood samples were obtained from all ages and sexes of freshly killed elk. At the same time many nymphal and adult *D. albipictus* were obtained from carcasses and from local horses. Negative results were obtained in tests in which the ticks were fed on and injected into guinea pigs, though one animal showed a low febrile episode which was not due to spotted fever, as checked by serology and by challenge with a laboratory passage strain. Excluding 13 serum samples which were anticomplementary, only 2 of the remainder showed even suggestive complement-fixation titers for spotted fever.[1] One showed fixation in dilution of 1:8 against spotted fever antigen, the other 1:16 (as well as 1:8 against the related "maculatum disease") while both were completely negative against Q fever and typhus antigens. It would be of greater interest to test elk or deer serums from known endemic spotted fever areas in the fall.

Howell (*5*) has shown that not all *D. albipictus* remain on the host to molt as presumed for this so-called one-host tick. Some engorged larvae and nymphs were loose in a bag in which they had been experimentally confined on the scrotum of a bull, while horses pastured in infested areas in California and examined weekly over a long period showed definite rhythms of infestation with various stages during the fall and winter, not necessarily coordinated with equivalent prior infestations of the preceding stage. He also was able to collect a few nymphs and adults by flagging the pasture area.

Small animals known to be susceptible to spotted fever are not among the recorded hosts of *D. albipictus* and little is known regarding the susceptibility of the larger animals (particularly the young) which *D. albipictus* customarily attacks. This species was of so little concern in our conception of the epidemiology and natural maintenance of spotted fever that it was not even included in tests of various tick species by Parker, Philip, and Jellison (*6*). Though it is difficult to visualize how the winter tick could play even an incidental role either in nature or in human infection, the above-mentioned case raises an interesting question that may have more than passing interest to those concerned with game management and redistribution as it concerns public health (*4*)—namely, where did this Olympic tick, if it was *D. albipictus* as it appears likely to have been, get its infection?

Summary

A case of Rocky Mountain spotted fever following tick-bite has been reported in which the circumstances strongly incriminate a male

[1] It is of incidental interest here to record that 6 of the 51 elk serums showed positive agglutination in titers of 1:40 or 80, and 1 probable of 1:20 for brucellosis; the remainder were completely negative. These animals all gave negative serologic tests for tularemia.

winter tick, *Dermacentor albipictus*, off an elk hide as the probable vector. Since this is a well-known, one-host species, the question is raised of the source of this tick's infection. This case, reported by Semler (*9*), is the first from the Olympic Peninsula in western Washington.

ACKNOWLEDGMENTS

Thanks are extended to the staff of the Washington State Department of Health for active interest and cooperation in connection with investigation of this case; to Dr. David Lackman of the Rocky Mountain Laboratory, who performed the serological tests; to the staff of the National Park Service, Yellowstone Park; and to Lyndahl E. Hughes, who assisted in obtaining the blood samples from Park elk.

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Dr. Mountin Succeeds Dr. Williams as BSS Chief

Joseph W. Mountin, M. D.

Charles L. Williams, M. D.

Dr. Joseph W. Mountin, on November 1, 1951, succeeded Dr. Charles L. Williams as chief of the Bureau of State Services of the Public Health Service. Dr. Williams, who received his commission in 1912, has retired after nearly 40 years of active duty. His successor, Dr. Mountin, entered the Service in 1917 and has been an associate chief of the Bureau since 1947.

In recent years, Dr. Mountin has been chief spokesman for the Bureau in the fields of chronic disease control and health programs for the aging. He is an advocate of better coordination of hospital and local health facilities. The Communicable Disease Center at Atlanta, Ga., and the Arctic Research Center at Anchorage, Alaska, were established largely through Dr. Mountin's efforts.

The notable career of Dr. Williams includes direction of a bubonic plague laboratory and administration of the Foreign Quarantine Division which he reorganized and streamlined. He set up the first interstate sanitary laboratory. During his early years, Dr. Williams became one of the country's authorities on plague. On September 1, 1946, he was appointed chief of the Bureau of State Services. During his administration he did much to bring the knowledge of medicine and public health into the homes and communities of the people.

Incidence of Disease

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

Announcement

The new monthly PUBLIC HEALTH REPORTS (see back cover) will publish from time to time, as appropriate, reports, tabulations, and articles dealing with morbidity statistics, both domestic and foreign. The present weekly "Incidence of Disease" section, however, will be discontinued as of December 31, 1951.

Current provisional morbidity data on notifiable diseases for the United States will continue to appear in summary form and in tabulations by States and cities in the weekly *Morbidity Report* issued by the National Office of Vital Statistics of the Public Health Service.

Libraries and agencies that have depended upon PUBLIC HEALTH REPORTS for current morbidity statistics for the United States may continue to receive the same data by writing to the National Office of Vital Statistics, Public Health Service, Washington 25, D. C., requesting that they be placed on the mailing list for the weekly *Morbidity Report.* Individuals who wish to be placed on the mailing list should indicate how and to what extent they will make use of this publication.

Since the *Weekly Epidemiological Record* and other publications of the World Health Organization, Geneva, Switzerland, contain morbidity data for foreign countries, tabulations of notifiable diseases occurring outside the United States and its Territories will not appear regularly in National Office of Vital Statistics publications.

UNITED STATES

Reports From States for Week Ended November 24, 1951

The incidence of measles increased as compared with the previous week and for the same week last year. Approximately three-fourths of the cases for the current week were reported in the northeastern States. Since the seasonal low week (about September 1) 20,144 cases have been reported as compared with 12,700 for the same period of 1950.

There was a 30-percent decrease in the number of cases of poliomyelitis reported this week as compared with the previous week. The cumulative total for the calendar year is now 27,163, as compared with 31,357 for the same period of 1950. The cumulative total since the seasonal low week this year is 25,951 and 30,226 for 1950.

Only five cases of malaria in civilians were reported for the current week, one each in Wisconsin, Missouri, Arkansas, Oklahoma, and California. The case reported in California was in a Mexican recently arrived from Mexico. There was a substantial decrease in the number of cases of malaria reported from military establishments.

Epidemiological Reports

Influenza

The Influenza Information Center, National Institutes of Health, has received information that a rather explosive outbreak of acute respiratory infections occurred among recruits at the Great Lakes Naval Training Center during the last week of October. About 25 percent of the recruits were affected in a sample of 2,250 persons interviewed. All regiments were involved about equally and men in all weeks of training were equally attacked. The predominating symptoms were sore throat, malaise, chills, and fever. Although studies are incomplete, four cases have shown significant rises to the Lee strain of virus in convalescent blood by either Hirst or complement fixation techniques. Viruses have been recovered from five patients thus far, and are being passed in eggs. They have been slow growing and yield a low titer. Only one of the five patients from whom virus was recovered has serological evidence of influenza B in the early convalescent sera. The exact relationship between influenza B virus and the outbreak of acute respiratory infections cannot be stated until further laboratory examinations are made.

Trichinosis

Dr. M. Goodman, New York State Department of Health, has reported a family outbreak of trichinosis in Westchester County. In the investigation by Dr. R. F. Sikes, it was found that five members of a family became ill with periorbital edema, myalgia, syncope, and vomiting several days after eating meat sausage containing pork and beef. It was said to have been cooked in tomato sauce for 2½ hours.

Gastroenteritis

Dr. R. H. Hutcheson, Tennessee Commissioner of Public Health, has reported an outbreak of food infection which occurred in a small college (675 students) located in the eastern part of the State. A total of 193 persons, it was reported, became ill 10 to 36 hours after eating chicken. The majority became ill after a Sunday noon meal, but 30 additional cases occurred after the evening meal on the following day. Fried chicken was the food common to both meals. Although no food was available for examination, the history indicated fried chicken was the vehicle of infection. Seven foodhandlers showed positive stool cultures for *Salmonella oranienburg* and all gave histories of illness after eating the Sunday meal. The chickens were obtained from a packing house and an attempt is being made to trace infection back to its original source. This is the first isolation of *S. oranienburg* in Tennessee.

Dr. C. P. Stevick, North Carolina Board of Health, has reported an outbreak of bacillary dysentery which occurred among pupils attending a school. The number of persons exposed to infection was 315 and the number reported ill was 153. Dr. M. P. Rudolph, District Health Officer, found that although *Shigella sonnei* was discovered to be the causative agent, it was difficult to establish a definite carrier relationship that would account for the cases as they were distributed in the school. Two teachers and all pupils from whom specimens were obtained in the second grade and one teacher and one pupil in the sixth grade had positive stool cultures. It could not be established definitely that the teachers were the primary source of infection nor was it possible to determine the vehicle of infection.

Dr. J. T. Herron, Arkansas Health Officer, has reported an outbreak of food poisoning following the eating of ham at a club dinner. *Staphylococcus albus* was isolated from this food.

Dr. M. H. Merrill, California Department of Public Health, has reported an outbreak of salmonellosis in which turkey sandwiches are suspected as the vehicle of infection. A total of 31 cases was found among 41 persons who partook of a midnight supper. Stool specimens from 26 of the cases were obtained, 22 of which contained *Salmonella typhimurium*. A frozen turkey was roasted, cooled at room temperature, and after slicing was left unrefrigerated. Specimens of

Comparative Data For Cases of Specified Reportable Diseases: United States

[Numbers after diseases are International List numbers, 1948 revision]

Disease	Total for week ended—		5-year median 1946–50	Seasonal low week	Cumulative total since seasonal low week		5-year median 1945–46 through 1949–50	Cumulative total for calendar year—		5-year median 1946–50
	Nov. 24, 1951	Nov. 25, 1950			1950–51	1949–50		1951	1950	
Anthrax (062)	-------	1	1	(1)	(1)	(1)	(1)	56	42	47
Diphtheria (055)	86	116	240	27th	1,705	2,296	4,080	3,713	5,424	8,691
Encephalitis, acute infectious (082)	9	29	10	(1)	(1)	(1)	(1)	[2] 940	915	599
Influenza (480–483)	314	693	920	30th	5,769	9,039	9,039	121,824	147,803	136,851
Measles (085)	3,401	2,026	2,026	35th	20,144	12,700	12,596	489,055	300,871	572,953
Meningitis, meningococcal (057.0)	72	64	59	37th	644	601	574	3,705	3,400	3,128
Pneumonia (490–493)	824	1,070	(3)	(1)	(1)	(1)	(1)	54,120	73,251	(3)
Poliomyelitis, acute (080)	399	568	506	11th	[4] 25,951	30,226	25,865	[4] 27,163	31,357	26,215
Rocky Mountain spotted fever (104)	2	2	3	(1)	(1)	(1)	(1)	328	451	548
Scarlet fever (050)[5]	1,048	1,021	1,480	32d	8,856	9,321	12,510	62,242	49,491	68,358
Smallpox (084)	-------	4	2	35th	[6] 1	7	7	[6] 12	33	52
Tularemia (059)	6	10	21	(1)	(1)	(1)	(1)	580	802	873
Typhoid and paratyphoid fever (040, 041)[7]	48	49	50	11th	2,449	2,694	3,133	2,884	3,203	3,618
Whooping cough (056)	1,179	1,640	1,904	39th	8,477	13,066	13,066	62,252	110,261	89,685

[1] Not computed. [2] Deduction: Missouri, week ended November 3, 1 case. [3] Data not available. [4] Addition: Missouri, week ended November 3, 1 case. [5] Including cases reported as streptococcal sore throat. [6] Deductions: Ohio, weeks ended November 3 and 10, 1 case each. [7] Including cases reported as salmonellosis.

the turkey meat were negative. Two persons preparing the food were ill following the supper.

Anthrax

The human case of anthrax reported from California last week occurred in a known anthrax endemic area with cases in dairy herds. Another case previously reported was in a ranch employee who lived in an area where 30 sheep have been found to have the disease.

Botulism

Dr. Merrill has reported three fatal cases of botulism in Los Angeles County, California. A home-canned food is suspected as the source of infection. The three persons who died were the only ones who ate the suspected food.

Plague Infection in Lincoln County, Washington

The following was proved to be plague infected: A specimen consisting of 306 fleas, *Megabothris clantoni*, *Thrassis gladiolis johnsoni*, *Micropsylla sectilis*, *Catallagia charlottensis*, *Monopsyllus wagneri*, and *Malaraeus telchinum*, from 106 sagebrush voles, *Lagurus curtatus*, trapped October 26, 17 miles southwest of Davenport in Lincoln County, Wash.

Reported Cases of Selected Communicable Diseases: United States, Week Ended Nov. 24, 1951

[Numbers under diseases are International List numbers, 1948 revision]

Area	Diphtheria (055)	Encephalitis, infectious (082)	Influenza (480–483)	Measles (085)	Meningitis, meningococcal (057.0)	Pneumonia (490–493)	Poliomyelitis (080)
United States	**86**	**9**	**314**	**3,401**	**72**	**824**	**399**
New England	**2**	**1**	**5**	**541**	**4**	**44**	**12**
Maine			4	94		6	
New Hampshire			1	15		8	
Vermont				134			
Massachusetts	2	1		172	2		4
Rhode Island				52			
Connecticut				74	2	30	8
Middle Atlantic	**6**		**2**	**1,418**	**8**	**86**	**29**
New York	3		(1)	583	3		18
New Jersey			2	320	1	41	5
Pennsylvania	3			515	4	45	6
East North Central	**7**	**5**	**23**	**563**	**8**	**85**	**52**
Ohio				144	4		8
Indiana	1		23	39		10	9
Illinois		2		148	2	58	12
Michigan	6	3		178	2	17	12
Wisconsin				54			11
West North Central	**3**		**11**	**70**	**6**	**53**	**35**
Minnesota	2			12	2	3	6
Iowa				2	2	2	2
Missouri			1	3			12
North Dakota			9	31	2	30	3
South Dakota				7			1
Nebraska				6			4
Kansas	1		1	9		18	7
South Atlantic	**33**		**19**	**278**	**11**	**115**	**33**
Delaware				1			
Maryland				132	1	34	8
District of Columbia				18	1	14	
Virginia	7			44	1	57	4
West Virginia	2			16	2		6
North Carolina	8			2	2		7
South Carolina	4		8	2	1	2	
Georgia	12		11	48	1	8	3
Florida				15	2		5
East South Central	**22**	**2**	**6**	**84**	**10**	**38**	**23**
Kentucky	3		2	42			1
Tennessee	5	2		13	7		6
Alabama	10			22	2	21	6
Mississippi	4		4	7	1	17	10
West South Central	**11**		**85**	**57**	**9**	**267**	**62**
Arkansas	1		36	5		33	12
Louisiana	4				1	12	6
Oklahoma	4		49	3	1	21	2
Texas	2			49	7	201	42
Mountain	**1**		**111**	**199**	**3**	**61**	**39**
Montana				47			4
Idaho				6			3
Wyoming				1		4	8
Colorado			5	13		12	7
New Mexico			1	21	1	21	4
Arizona	1		105	20	1	24	
Utah				91	1		13
Nevada							
Pacific	**1**	**1**	**52**	**191**	**13**	**75**	**114**
Washington			28	67	2		8
Oregon			14	15	1	36	7
California	1	1	10	109	10	39	99
Alaska							
Hawaii			2	545	1	3	9

[1] New York City only.

Reported Cases of Selected Communicable Diseases: United States, Week Ended November 24, 1951—Continued

[Numbers under diseases are International List numbers, 1948 revision]

Area	Rocky Mountain spotted fever (104)	Scarlet fever [1] (050)	Smallpox (084)	Tularemia (059)	Typhoid and paratyphoid fever [2] (040, 041)	Whooping cough (056)	Rabies in animals
United States	**2**	**1,048**		**6**	**48**	**1,179**	**145**
New England		**66**			**4**	**114**	
Maine		8				2	
New Hampshire		5				9	
Vermont						13	
Massachusetts		33			4	76	
Rhode Island		6				6	
Connecticut		14				8	
Middle Atlantic		**154**			**4**	**207**	**21**
New York		77			1	67	12
New Jersey		22				77	9
Pennsylvania		55			3	63	
East North Central		**283**		**1**	**7**	**271**	**15**
Ohio		94			3	58	6
Indiana		23			2	49	5
Illinois		28		1	1	35	
Michigan		100			1	72	
Wisconsin		38				57	4
West North Central		**78**			**2**	**39**	**9**
Minnesota		14				7	4
Iowa		23			1	3	4
Missouri		14				9	1
North Dakota						2	
South Dakota							
Nebraska						2	
Kansas		27			1	16	
South Atlantic	**2**	**136**			**8**	**133**	**16**
Delaware		3					
Maryland		13				10	
District of Columbia		6				2	
Virginia	1	21			1	32	3
West Virginia		14				36	
North Carolina	1	59			5	13	3
South Carolina		1			1	3	2
Georgia		17			1	16	8
Florida		2				21	
East South Central		**80**		**1**	**3**	**41**	**22**
Kentucky		28				9	8
Tennessee		33		1	3	18	8
Alabama		13				7	2
Mississippi		6				7	4
West South Central		**31**		**3**	**6**	**236**	**62**
Arkansas		4		1	1	9	3
Louisiana		2			1	3	[3] 25
Oklahoma		7			3	6	4
Texas		18		2	1	218	30
Mountain		**48**		**1**	**2**	**46**	
Montana		11		1		3	
Idaho		10				4	
Wyoming		1					
Colorado		4			1	16	
New Mexico		4				10	
Arizona		5			1	10	
Utah		10				3	
Nevada		3					
Pacific		**172**			**12**	**92**	
Washington		21				8	
Oregon		26			1	1	
California		125			11	83	
Alaska							
Hawaii		1			1		

[1] Including cases reported as streptococcal sore throat.
[2] Including cases reported as salmonellosis.
[3] Report for October.

FOREIGN REPORTS

CANADA

Reported Cases of Certain Diseases—Week Ended Nov. 10, 1951

Disease	Total	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Brucellosis	3	------	------	------	------	2	1	------	------	------	------
Chickenpox	963	4	------	18	1	125	495	31	47	124	118
Diphtheria	8	------	------	------	------	7	------	------	------	------	1
Dysentery:											
Amebic	6	------	------	------	------	6	------	------	------	------	------
Bacillary	11	------	------	------	------	------	2	------	------	------	9
German measles	108	------	------	4	------	21	25	1	11	36	10
Influenza	22	------	------	22	------	------	------	------	------	------	------
Measles	662	9	------	10	1	16	106	26	6	249	239
Meningitis, meningococcal	5	------	------	------	------	1	2	1	------	------	1
Mumps	519	5	------	2	------	110	259	19	31	26	67
Poliomyelitis	30	------	------	6	------	6	12	5	------	------	1
Scarlet fever	435	2	------	------	1	114	55	29	45	27	162
Tuberculosis (all forms)	299	15	------	2	30	104	29	18	32	9	60
Typhoid and paratyphoid fever	7	------	------	------	------	7	------	------	------	------	------
Venereal diseases:											
Gonorrhea	262	2	------	4	7	53	47	28	17	43	61
Syphilis	62	2	------	3	1	26	10	3	4	5	8
Primary	2	------	------	------	------	1	------	------	1	------	------
Secondary	3	------	------	------	------	------	2	------	------	1	------
Other	57	2	------	3	1	25	8	3	3	4	8
Whooping cough	256	5	------	------	------	101	58	28	7	36	21

NEW ZEALAND

Reported Cases of Certain Diseases and Deaths—5 Weeks Ended Sept. 29, 1951

Disease	Cases	Deaths	Disease	Cases	Deaths
Brucellosis	9	------	Malaria	1	------
Diphtheria	4	------	Meningitis, meningococcal	19	1
Dysentery:			Ophthalmia neonatorum	1	------
Amebic	3	------	Poliomyelitis	2	------
Bacillary	3	------	Puerperal fever	6	------
Encephalitis, infectious	1	------	Scarlet fever	88	------
Erysipelas	16	------	Tetanus	1	1
Food poisoning	5	------	Tuberculosis (all forms)	181	58
Influenza	3	2	Typhoid fever	13	1

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

The following reports include only items of unusual incidence or of special interest and the occurrence of these diseases, except yellow fever, in localities which had not recently reported cases. All reports of yellow fever are published currently.

Cholera

India. The number (632) of cases of cholera in India for the week ended October 20 was less than a third of the average (2,117) for the period of high incidence, from the middle of July to September 15. For the week ended November 10, 50 cases were reported in Calcutta.

Plague

India. During the week ended October 20, 100 cases of plague were reported in States of India as compared with 58 for the previous week. No cases of plague have been reported in the ports since August 18, when one imported case was reported in Calcutta.

Smallpox

French Equatorial Africa. During the period November 1–10, 18 cases of smallpox were reported as compared with 84 for the previous 10-day period. For the period November 1–10, one fatal case was reported in Fort Lamy.

Indochina. For the week ended November 10, eight cases each were reported in Haiphong and Hanoi, Viet Nam.

Typhus Fever

Iraq. One case of typhus fever was reported in Baghdad for the week ended November 17.

Italy. During the 3-week period ended November 3, 166 cases (4 deaths) of endemic typhus fever were reported in Genoa.