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# **PUBLIC HEALTH REPORTS**

**VOL. 43** 

#### MAY 11, 1928

NO. 19

# MENINGOCOCCUS MENINGITIS IN THE UNITED STATES

An increase in the number of cases of meningococcus meningitis this year over the corresponding period of last year has been noted in the Public Health Reports (issues of April 6, 1928, p. 807, and April 27, 1928, p. 999).

During the eight weeks from March 4 to April 28, 1928, and the corresponding eight weeks of 1926 and 1927, forty-two States reported cases of meningococcus meningitis as follows:

	Cases
1926	438
1927	477
1928	1. 036
	-,

These States had an estimated population of more than 104,000,000 in 1927.

The disease appears to be decreasing in the Mountain States, which have reported the highest case rates.

Reports of deaths for the year 1928 are available only from cities. The following table shows the numbers of cases of meningococcus meningitis and deaths from this disease reported by 7 large cities for the first 17 weeks of 1927 and 1928. The cities were selected for the reason that they reported a considerable number of cases.

Meningococcus meningitis cases and deaths reported by certain cities, January 1 to A pril 28, 1928, and corresponding period of 1927

	19	927	1	928		1927		19	)28
	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths
Chicago Cleveland	50 8 17	23 3 12	133 29	66 9	New York City. St. Louis	77 14	46 4	284 44	148 16
Kansas City, Mo. Milwaukee	5 71	12 3 34	22 34 41	24 16 25	Total	242	125	587	304

It should be noted that, while the increase over preceding years is considerable, the number of cases is not large in proportion to the population.

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(1123)

# THE INCIDENCE OF VARIOUS DISEASES ACCORDING TO AGE<sup>1</sup>

## Hagerstown Morbidity Studies No. VIII<sup>2</sup>

By EDGAR SYDENSTRICKER, Statistician, United States Public Health Service

In this report it is proposed to place on record in some detail the results of the morbidity study in Hagerstown, Md., which bear upon the incidence of various diseases and conditions at different ages.

The data are too voluminous to permit of a detailed discussion of each disease or a comparison with other morbidity records in a short paper. It is believed, however, that they will be of interest as they stand, not merely for the reason that they add to our morbidity experience, but also, and perhaps especially, because they are the results of the first study, of which we are aware, of the *incidence* of illness and disease during a period as long as 28 months in a general population group composed of persons as found in their homes—that is, of both sexes, all ages, engaged in the ordinary occupations of life, in a fairly typical inland small city in the eastern section of the United States.

#### I. Scope and Method of the Study and Definition of Illness and Disease

The scope and method of the study have been discussed in detail in the first paper of this series and need not be repeated here except in so far as they may affect some particular phase of the results here presented. For proper interpretation of the data, however, it may be well to invite attention to certain definitions and procedures, as follows:

1. For every case of illness recorded, an attempt was made to obtain as complete a statement as possible of the specific disease or diseases responsible for it or of the condition which most accurately described it. Only 170, or less than one per cent, of the 17,847 illnesses had to be classified as "ill-defined and unknown." Of the total number (17,217) for which information as to medical and other service was avialable, 7,953, or 46 per cent, were attended by physicians, and in practically

<sup>1</sup> From the Office of Statistical Investigations, United States Public Health Service.

<sup>2</sup> Other Hagerstown morbidity studies published arc-

IV. The Age Curve of Illness. Pub. Health Rep., vol. 42, No. 23, June 10, 1927. Reprint No. 1163.

V. A comparison of the Incidence of Illness and Death. Pub. Health Rep., vol. 42, No. 25, June 24, 1927. Reprint No. 1167.

VI. The Illness Rate Among Males and Females. Pub. Health Rep., vol. 42, No. 30, July 29, 1927. Reprint No. 1172.

VII. The Causes of Illness at Different Ages. Pub. Health Repts., vol. 43, No. -.

I. A Study of Illness in a General Population Group: Method of Study and General Results. Pub. Health Rep., vol. 41, No. 39, Sept. 24, 1926. Reprint No. 1113.

II. The Reporting of Notifiable Diseases in a Typical Small City. Pub. Health Rep., Vol. 41, No. 41, Oct. 8, 1926. Reprint No. 1116.

III. The Extent of Medical and Hospital Service in a Typical Small City. Pub. Health Rep., Vol. 42, No. 2, Jan. 14, 1927, Reprint No. 1134.

all of these cases the diagnosis given by the informant at the home was reviewed by the attending physician shortly after the visit was made. If we omit "colds" and minor digestive disturbances, which numbered about 7,500, 65 per cent of the illnesses were attended and the diagnoses were reviewed by physicians. The facts that repeated visits were made to the same households and that 67 per cent of the total population enumerated were observed for at least 24 of the 28 months, are evidence, we believe, of a real attempt to ascertain not only the incidence, but also the cause of illness.<sup>3</sup>

2. In the interpretation of the data presented in this paper it is essential to keep in mind the following qualification: The measure of the incidence of any specific disease was the extent to which it manifested itself in illness. If it did not manifest itself in illness, it was not observed and, therefore, was not recorded. It follows, of course, that our results are not comparable with the results of intensive medical or physical examinations, and that defects and conditions indicative of ill health are not revealed unless they were major causes of illnesses recorded. Similarly, those morbid conditions which ordinarily are described as "below par," "not feeling very well," etc., or were of short duration and occasioned little discomfort, were not For example, many minor respiratory attacks were not recorded. reported. Less than 5 per cent of the illnesses for which exact durations were stated were one day or less in duration. Comparisons of our results with other morbidity records indicate that, in general, the illnesses we recorded were those which lasted over two days.

Thus the definition of "illness" employed in this study was not, as we have already pointed out, rigidly precise. The records obtained were of illnesses as reported by the household informant (usually the wife), either as experienced by herself or as she observed them in her family; thus the definition of the term can not be refined any further than the common understanding of the word. Furthermore, the records as obtained were of *attacks*, rather than illness in

Number of months under observation	Persons servati fied n month Number	under ob- on speci- umber of
	Number	Per cent of total
28 months.         26 months or more.         24 months or more.         18 months or more.         14 months or more.         12 months or more.         9 months or more.         6 months or more.         4 months or more.         4 months or more.	3, 202 5, 140 5, 787 6, 824 7, 528 7, 794 8, 085 8, 340 8, 431	37. 3 49. 8 67. 4 79. 5 87. 7 90. 8 94. 2 97. 1 98. 2

Per cent of persons observed for specified number of months in the Hagerstown morbidity study

the sense of ill health. As already emphasized, of those persons affected with some chronic condition, only those who suffered ill effects of this condition *during the period* came to notice. "Normal" reactions of the individual, considered by some as not symptoms of disease, although accompanied by some discomfort, may be said to be unrecorded. Although the reader is cautioned against putting too fine a point on this definition of illness, we believe that the illness recorded undoubtedly was a fairly accurate indication of disease incidence.

3. In only 660, or 3.7 per cent, of the total illnesses was more than one cause or condition recorded. One reason for the comparatively small number of cases with "contributory" and "joint" causes was the method used in classification. Sometimes the informant mentioned more than one condition in telling about an illness: but when these conditions were in the nature of symptoms which simply amplified the information as regards a single cause of illness, they were not tabulated as complications or contributory causes. For example, a person may have reported "indigestion" and a "headache" as the cause of illness, but only the "indigestion" was used to denote the condition. In other words, symptoms were not made contributory causes unless it seemed quite certain that they apparently represented a condition separate and distinct from the primary diagnosis. In such cases, symptomatic indications were tabulated as disease entities, even though they were sometimes complications of the primary disease.' Thus, in the case of "colds" and "indigestion," the cold was made primary, but the indigestion was tabulated as a complication.

In the tables on the incidence of specific diseases which are presented in this paper, both primary and contributory causes are given as distinct diseases or conditions. Thus, in the foregoing instance, the "cold" is included under its appropriate title and "indigestion" under its appropriate title also.

The age groupings were chosen with the primary purpose of exhibiting the characteristic age curves of the various diseases. This was a rather difficult thing to do, and in some instances the groupings are probably not the best suited. It was thought best to retain one age classification throughout, however, except for a few diseases for which additional tables and graphs are given.

## II. The Record of Diseases and Conditions

The basic data used in this report are given in Table A, entitled "Number of illnesses, by age groups, in which specified diseases or conditions were the sole or primary or contributory cause in a group of white persons in Hagerstown, Md., observed from December 1, 1921, to April 1, 1924." The data are presented in considerable detail in order that they may be available to those who wish to use the statistics in various ways. For several diseases the numbers according to age groups are too small to yield dependable indications of age variations, but they are given for what they are worth in themselves, as well as to enable the student to make combinations to suit his particular purpose.

TABLE A.—Number of illnesses, by age groups, in which specified diseases or conditions were the sole or primary or contributory cause in a group of white persons observed in Hagerstown, Md., December 1, 1921–March 31, 1924

	Number of illnesses in which the specified disease or co dition was a cause								
Disease or condition (numbers in parentheses refer to those given in the International List of Causes of Death, 1920)	A11	All Age group							
	ages 1	0-4	5-9	10-14	15-24	25-44	45-64	65+	
Years of life observed	16, 517	1, 777	2, 105	1, 713	2, 526	4, 643	2, 575	810	
Epidemic, endemic, and infectious diseases (1-42, except 11 and 31)	1, 465 19 568 34 374 45 36 232 18 14 125	628 1 273 9 209 11 1 106 3 	618 4 261 16 142 18 1 115 12 1 48	87 5 28 7 12 7 4 10 2 1 11	40 3 4 2 3 2 5 5 	53 3 2 4 5 11 1 1 9 17	26 2 3 2 11	8 1  3 	
General diseases (43-69) Cancer (43-49) Rheumatism, acute and chronic (51, 52) Diabetes (57) Others (50, 53-56, 58-69)	381 22 290 16 53	6 1 5	15 11 4	14 11 3	22 17 5	103 6 75 1 21	150 10 114 14 12	63 5 55 1 2	
Diseases of the nervous system (70-84, part of 205). Cerebral hemorrhage and apoplexy (74) Paralysis (75). Epilepsy (78). Chorea (81). Neuralgia (part of 82). Neuralgia (part of 82). Neurasthenia and nervous exhaustion (part of 84). Headache (part of 82 and 205). Other nervous diseases (71-73, 76, 77, 79-80, 83, part of 82, 84).	802 15 27 11 20 121 95 216 251 46	11 1 1 1 3 2 3	47 	89 1 4 14 4 14 4 10 52 4	72 2 9 9 3 25 18 13	269 2 1 3 52 39 79 80 13	225 3 8 1 1 36 41 69 59 7	72 8 16  9 9 17 7 8	
Diseases of the eyes and annexa (85) Pink eye. Conjunctivitis (other) Sty Sore eye and "other eye"	139 33 19 18 69	15 4 5 3 3	34 9 3 4 18	29 9 4 3 13	11 2 2 7	25 5 2 6 12	17 3 5 9	6 6	
Diseases of ears and mastoid process (86) Otitis media Mastoiditis Earache	248 166 11 53	72 63 7	78 44 3 26	45 27 14	20 7 6 4	24 20 2	6 4	2 1 1	

<sup>1</sup> Including unknown ages.

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## **TABLE A.**—Number of illnesses, by age groups, in which specified diseases or conditions were the sole or primary or contributory cause in a group of white persons observed in Hagerstown, Md., December 1, 1921–March 31, 1924—Continued

	Num	ber of il	lnesses i d	in which ition wa	h the sp as a cau	ecified se	disease	or con-
Disease or condition (numbers in parentheses refer to those given in the International List of Causes of Death, 1920)	A11	All Age group						
	ages	0-4	5-9	10-14	15-24	25-44	45-64	65+
Diseases of circulatory system (87-96) Diseases of the heart (87-90) Arterioscierosis (part of 91)	397 222 32	22	23 5	31 17	28 18	73 45	113 65 4	95 60 28
Hemorrhoids (part of 93) Adenitis (part of 94) Nosebleed and other hemorrhage (95) High blood pressure (part of 96)	18 57 17 30	21 1	13 4	11		94	827	3
Other diseases of circulatory system (part of 91, 92, 93, 94, and 96)	21		1	2	1	11	6	
Total respiratory (excluding operations) (11, 31, 97-107, 109) Influenza and grippe (11) Pneumonia (100, 101) Pleurisy (102) Diseases of the pharynx (109)	10, 976 2, 382 144 38 1, 101	1, 651 206 71 2 79	1, 923 343 20 4 322	1, 336 278 12 1 266	1, 255 272 5 6 175	2, 641 755 14 10 181	1, 529 385 14 12 53	484 107 8 3 9
Sore throat Quinsy Other diseases of pharynx Diseases of the larynx (98) Croup	431 55 143 188 88	9 36 32	118 166 4 34 52 44	100 129 5 26 15 9	55 13 24 11	87 42 23 29 36 1	18 17 4 14 32 1	3 4 2 5
Other diseases of larynx Hay fever (part of 107) Asthma (105) Tuberculosis, pulmonary (31) Other diseases of respiratory system (in	84 16 33 67 55	4		4 2 9 1	7 3 7 7 14	31 4 11 24 25	25 6 9 14 8	5 5 10 1
cluding head colds, chest and bronchial conditions) (97, 99, 103, part of 107) Coryza <sup>2</sup> Bronchitis, acute and chronic <sup>2</sup> Chest colds, cough, and bronchial	6, 968 1, 791 1, 019	1, 257 352 262	1, 180 286 191	754 200 81	758 180 69	1, 585 462 199	1, 002 215 146	336 67 62
Conditions <sup>1</sup> Tonsillectomy and (or) adenoidectomy Other operations on throat and nasal fossæ.	440 120 8	87 13 	79 66	42 17	32 13 4	99 10 2	72 1 1	25 
Diseases of teeth and gums (part of 108) Teeth abscess Toothache	136 53 48	2 1 1	21 4 12	32 11 18	21 12 6	42 17 11	16 8	2
Diseases and disorders of the digestive system (110-127, part of 108 and 205) Ulcers of stomach and duodenum (111) Indirection "unset stomach" and program	1, 685 12	282	312	223	156 1	331 5	281 6	82
"Stomach trouble" and nausea (part of	739	123	164	101	62	133	114	39
112) Diarrhea (113, 114) Intestinal parasites (116)	137 219	13 104	40 16	24 17	7 16	25 38	19 21	8 6
Appendicitis (117)	23 99 27 14	13 1 1 2	9 1	13 1 	31 1	25 8 6	16 12 3	83
(part of 118 and 119) Billary calculi (123) Cholecystitis (part of 124) Jaundice (part of 124)	25 72 32 45	2 7	2 1 21	5 1 1 6	2 6 5	4 37 8 3	9 20 16 3	1 2 3
Other diseases of the liver (part of 124) "Billounness" (part of 205). Other diseases of the digestive system (110, 126, and 108 excluding teeth and gums)	31 172 38	i 8 7	2 44 5	2 47 3	1 22 2	3 20 15	16 22 4	6 9 2
I		1	1	1	1			

<sup>2</sup> This record covers the period Feb. 1, 1923-Mar. 31, 1924, and relates to the following years of observations: 0-4, 972; 5-9, 1,054; 10-14, 860; 15-24, 1,233; 25-44, 2,287; 45-64, 1,267; 65+, 384; total, 8,248.

#### **TABLE A.**—Number of illnesses, by age groups, in which specified diseases or conditions were the sole or primary or contributory cause in a group of white persons observed in Hagerstown, Md., December 1, 1921–March 31, 1924—Continued

	Num	ber of il	lnesses d	in which lition w	ch the sp as a cau	ecified se	disease	or con-
Disease or condition (numbers in parentheses refer to those given in the International List of Causes of Death, 1920)	A11	All Age group						
	ages	0-4	5-9	10-14	15-24	25-44	45-64	65+
Diseases of kidney and annexa (128-134) Nephritis (128, 129) Kidney diseases, unqualified (131) Calculi of urinary passages (132) Cystitis (part of 133) Bladder trouble (part of 133) Other diseases of kidney and annexa (134)	- 237 - 83 - 91 - 14 - 23 - 24 - 2	16 1 14 	12 1 7 4	11 3 8		50 8 27 3 4 6 2	78 32 19 8 10 9	54 31 10 3 7 3
Diseases of genito-urinary system (nonvene- real) (135-142) Diseases of male organs. Salpingitis (138) Tumors or cysts of ovary or uterus (137, 139) Menstrual trouble (part of 141) Menopause Other diseases of female genital organs (140, part of 141, 142)	215 12 21 18 52 41 71	22	321	14 1 12 1	43 1 6 3 21 12	98 1 12 11 13 15 46	45 1 2 2 6 24 10	6 4  1
Puerperal state (143-150) Abortion and stillbirth (part of 143) Confinements Other puerperal conditions (143-150)	402 33 324 45			21	112 4 99 9	275 28 216 31	3	
Diseases of skin and cellular tissue (151-154, part of 205) Furuncle (152) Abscess (153) Scabies and itch (part of 154) Impetigo contagiosa (part of 154) Sores on body (part of 205) Hives and rash (part of 205) Other and unqualified skin conditions (part of 154)	321 77 31 24 25 67 48 49	71 6 3 6 7 27 14 8	85 19 4 8 9 23 13 9	57 11 3 10 4 14 6 9	27 12 4 3 1 5 2	48 20 13 2 2 4 7	19 6 2  5 6	12 2 1  1 8
Diseases of bones and organs of locomotion (155-158, part of 205) Lumbago, myalgia, myositis (part of 158). Backache (part of 205) Other diseases of bones or organs of loco- motion (155, 156, part of 158)	116 52 38 26	2 1 1	5 3 	5 2 1 2	5 	49 22 19 8	35 19 9 7	13 5 5 3
Congenital malformations and infancy (159- 163)	19	13	2	3				
Senility (164)	14							14
External causes (165-203) All poisonings (175, 176, 177) Burns (178-179) Cuts (184) Falls (185) Automobile, street, railroad, etc. (188) Fractures, wounds, and other injuries (201, 202) Other external causes (165-174, 181-182, 189, 190-196).	656 46 35 61 73 56 348 37	51 6 8 6 5 4 21 1	96 10 5 11 6 8 54 2	75 8 5 13 9 2 36 2	82 4 9 3 10 47 - 5	151 13 8 12 15 15 78 10	142 2 5 8 18 14 82 13	38 2 1 10 1 21 3
Ill-defined and unknown	170	47	18	16	11	36	27	11

#### III. Incidence Rates of Specific Diseases at Different Ages

In the following series of tables the age specific rates of the different diseases are given on an annual basis. The discussion is confined largely to brief explanatory comment and, in some instances, contains supplementary details; but we have relied upon the graphs to depict the principal results and indications that the data appear to yield. The number of cases and "years of life observed" upon which any rate is computed may be found by reference to Table A.

#### 1. EPIDEMIC, ENDEMIC, AND INFECTIOUS DISEASES

(Int. List.	Nos.	1-42,	except	11	and	31	)
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TABLE	1
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	Annual rate per 1,000								
Diseases and conditions	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over	
Total	88.7	353.4	293.7	50.8	15.8	11.4	10. 1	9.9	
Typhoid Measles Scarlet favor Whooping cough Diphtheria Cholera nostras Chicken pox German measles Tuberguiste conputmentery	1.2 34.4 2.1 22.6 2.7 2.2 4.0 1.1	.6 153.6 5.1 117.6 6.2 .6 59.7 1.7	1.9 124.0 7.6 67.5 8.6 .5 54.6 5.7	2.9 16.3 4.1 7.0 4.1 2.3 5.8 1.2	1.2 1.6 .8 1.2 .8 2.0	.6 .4 .9 1.1 2.4 .2 .2	.8 1.2 .8 4.3	1.2  3.7	

Of the total 1,465 cases included under the above heading, 1,174 were measles, whooping cough, and chicken pox, so that the age curve for the total for the group is influenced largely by these three diseases. The number of cases of the other diseases are too small to yield dependable indications according to age although some of the rates are interesting from the viewpoint of interepidemic incidence.

In view of the fact that measles, whooping cough, and chicken pox were quite prevalent during the period of study, their actual incidence (as contrasted with the incompletely reported incidence usually available <sup>4</sup>) according to age is not without significance. The accom-

<sup>4</sup> The annual rates based on our records and annual rates based on reports of physicians to the local health department are compared below:

Observed and reported incidence of measles, whooping cough, and chicken pox in Hagerstown Md. December 1, 1921–March 81, 1924

		Annual per 1,0	incidence 00 as—
•	Disease	Observed in home visits	Reported by phy- sicians
	Measles Whooping cough Chicken pox	34. 4 22. 6 14. 0	9.0 3.3 2.2

See Hagerstown Morbidity Studies No. II.

1



FIG. 1.—Monthly incidence of measles, whooping cough, and chicken pox, from December 1, 1921-March 31, 1924, in a white population group in Hagerstown, Md.

panying diagrams (fig. 1) exhibit the monthly numbers of cases and reveal a definitely epidemic prevalence of measles and whooping cough and perhaps of chicken pox.<sup>5</sup> For each of these diseases a more detailed tabulation according to age was made as follows:

	Annual rate per 1,000					
Age	/ Measles (568 cases)	Whoop- ing cough (374 cases)	Chicken pox (232 cases)			
Under 1 year	118 160 153 197 153 165 165 165 168 43 16 1.6 .4	155 88 126 68 137 96 95 68 41 26 7 7 1.2 .9 1.2	45 39 63 80 78 80 90 59 26 7 6 .2			

TABLE 1a.—Measles, whooping cough, and chicken pox

These rates have been plotted in Figure 2 and tell their own stories. The dotted lines were drawn by inspection and serve merely to suggest what the age curves might be if the irregularities due to small numbers were smoothed out.

2. "GENERAL" DISEASES

(Int. List Nos. 43-69)

TABLE	2
-------	---

	Annual rate per 1,000								
Diseases	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over	
Total	23.1	3.4	7.1	8.2	8.7	22. 2	58.2	77.7	
Cancer Rheumatism Diabetes Others	1.3 17.6 1.0 3.2	.6 2,8	5. 2 1. 9	6.4 1.8	6.7 2.0	1.3 16.2 .2 4.5	8.9 44.3 5.4 4.7	6.2 67.9 1.2 2.5	

The true prevalence of all diseases classifiable under this heading is not, of course, revealed by a record of the illnesses that they cause during a period of 28 months. The prevalence of acute rheumatism, which forms a large proportion of the total, is probably adequately

<sup>6</sup> The chronological variations in the incidence of illness from various causes will be presented in some detail in a later paper.



FIG. 2.—Incidence of measles, chicken por, and whooping cough, among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924. The dotted, smooth lines were drawn by inspection

recorded, but certainly this can not be said of diabetes or cancer. Our record of cancer and diabetes may be interpreted as indicating the prevalence of cases severe enough to require a physician's attendance, since every case recorded was attended by a physician. (See fig. 3.)



FIG. 3.—Incidence of "general diseases" manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

#### 3. DISEASES OF THE NERVOUS SYSTEM

(Int. List. Nos. 70-84; part of 205)

TABLE (	3
---------	---

Disease	Annual rate per 1,000							
	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over
Total	48. 56	6. 19	22. 33	51.96	28. 51	57.94	87.37	88. 86
Apoplexy and cerebral hemorrhage	.91 1.63	. 56		. 58		. 43 . 22	1.16 3.11	9.87 19.75
Chorea. Neuralgia	. 07 1. 21 7. 33	. 56	1. 43 1. 43	2.34 8.17 2.34	.79 .79 3.56	.65 11.20	. 39 . 39 13. 98	14, 81
Neuritis and sciatica Neurasthenia and nervous exhaustion Headache	5.75 13.08 15.20	1.69 1.13	3. 33 14. 73	5. 84 30. 36	1. 19 9. 90 7. 13	8.40 17.02 17.23	15.92 26.79 22.91	11, 11 20, 98 8, 64
Other nervous conditions	2.78	1. 69	1.43	2.34	5.15	2.80	2,72	3. 70

The fact that "headache" is a symptom that characterizes no particular syndrome makes its inclusion under diseases of the nervous system rather doubtful. One has the choice of classifying illnesses described as "headaches" under "ill-defined and unknown" or of including them under some other group titles preferably (perhaps) the nervous system. We adopted the latter course after excluding, however, from the foregoing table all headaches that were reported as occurring in conjunction with a disease or condition of which headache may be a symptom. The rates given above are based on those indispositions and illnesses which were reported as "headache" without any other related condition, and the reader can reclassify them as he pleases. The other conditions specified in the table seem to be fairly definite from the diagnostic point of view, either because they are commonly recognized, as in the case of neuralgia or sciatica, or for the reason that the attending physician's diagnosis was recorded. The extent to which the specific conditions were attended by physicians is shown below:

 TABLE 3a.—Extent to which cases of nervous diseases and conditions resulting in illness were attended by physicians

Disease or condition	Number of cases	Per cent attended by phy- sicians
Apoplexy and cerebral hemorrhage Paralysis. Epilepsy Chorea	9 23 9 19	100 96 56 89
Neuralgia Neurasthenia and nervous exhaustion Headache Other nervous conditions	100 86 164 237 39	38 58 80 11 67

The age incidence of these conditions is shown graphically in Figure 4 and needs no further comment except on one or two details.

The high incidence of headache in the age group 10 to 14 is undoubtedly significant, although we are not able to say what specific condition it is directly associated with. It is corroborated by the more extensive records of absences due to "headaches" in the Hagerstown schools.<sup>6</sup>

Sickness resulting in absence from school due to "headache and neuralgia" as reported by child or parent, in white schools, Hagerstown, Md., December, 1921-May, 1925

Age	Annual • rate per 1,000	Age	Annual a rate per 1,000
6 7 8 9 10 11	142 196 255 296 321 318	12 13 14 15 16-18	402 384 377 357 267

Per school year of 180 days

The rate quite definitely exhibited a maximum in the ages 10 to 14.

<sup>&</sup>lt;sup>6</sup> Collins (1) reported the following:

Whether or not all of the chorea was true chorea, it is impossible to say; all except two of the 19 cases were diagnosed by attending physicians, and all of the attacks were severe enough to result in illness. While 80 per cent of the cases recorded as "neurasthenia" and "nervous exhaustion" were so diagnosed by attending physicians, it is probable that this diagnosis was not infrequently used as a generic or vague term to designate a condition due to more specific causes. The higher incidence of paralysis than of apoplexy and cerebral



FIG. 4.—Incidence of certain diseases and conditions of the nervous system manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

hemorrhage is due, of course, to the fact that the former included conditions continuing from lesions that occurred before our study was made, whereas the latter occurred during the 28 months of observation.

Lumbago and myalgia, in accordance with the International List of Causes of Death, are classified under "Diseases of the bones and organs of locomotion," but obviously belong with diseases of the nervous system. They are given immediately below.

#### 4. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION

(Int. List Nos. 155-158; part of205)

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ι.	Annual rate per 1,000								
Disease	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over	
Total	7. 02	1. 13	2. 38	2. 92	1.98	10. 55	13. 59	16.04	
Lumbago, myalgia, myositis Backache (part of 205)	3. 15 2. 30	. 56	1. 43	1. 17 . 58	. 79	4. 74 4. 09	7. 38 3. 49	6. 17 6. 17	

"Backache" may be regarded as a symptom of any of several causes or as an indeterminate name for lumbago. The "diseases of the bones" were too few to classify separately.

5. DISEASES AND CONDITIONS OF THE EYE AND ANNEXA

(Int. List No. 85)

TABLE 5	,
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	Annual rate per 1,000								
Disease	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over	
Total	8. 42	8.44	16.16	16. 93	4. 36	5.38	6.60	7.40	
Conjunctivitis, bacillary (pink eye) Conjunctivitis, other and "sore eye"	2.00 3.57 1.09	2.25 3.94 1.69	4.28 8.08 1.90	5.25 6.42 1.75	.79 1.52 79	1.08 1.94 1.29	1.16 3.88	1.23	
Other "eye trouble"	1. 70	. 56	1.90	3. 50	1. 19	1.08	1.55	6. 17	

In the absence of adequate eye examinations, it is impossible of course to interpret the rates given above except in a very general way. Most of the conditions classified under "other eye trouble" were attended by physicians and were eye defects rather than acute attacks of disease. We may, therefore, roughly divide the incidence of the eye conditions recorded into two categories: (a) Those of an acute nature due principally to infections, such as sties, pink eve, and other forms of conjunctivitis, and (b) those due to defects. The rates for these two groups have been plotted in Fig. 5, as well as the curve for markedly defective vision (20/50 or worse in one or both eves) which has been published for a large group by Collins and Britten (2). A comparison of the curve for defective vision with that for "other eye trouble" suggests that the conditions classified under the latter were due principally to defects. Although some of them occurred among children of school age, the "other eye troubles" increased with age; the incidence of acute disabilities, due principally to infections, on the other hand, occurred chiefly among children. The incidence of specific conditions in the latter group is shown graphically in Figure 6.



FIG. 5.—Incidence of certain eye conditions among persons of different ages in a white population group in Hagerstown, Md., and of markedly defective (20/50 or worse) vision according to Britten and Collins

#### 6. DISEASES OF THE EAR AND MASTOID PROCESS

(Int. List No. 86)

#### TABLE 6

	Annual rate per 1,000							
Disease	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over
Total	15. 01	40. 52	37.06	26. 27	7. 92	5. 17	2. 33	2.47
Otitis media Mastoiditis Earache	10. 05 . 67 3. 21	35. 46 3. 94	20. 91 1. 43 12. 35	15. 76 8. 17	2. 77 2. 38 1. 58	4.31 .43	1. 55	1. 23 1. 23

The fact that diseases of the ear so far as they are manifested in illness are largely confined to children is clearly apparent. The record of absences in the Hagerstown schools due to "earache and ear diseases" (1) exhibits the same curve in greater detail for children of school age.



FIG. 6.—Incidence of certain diseases and conditions of the eye manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

 

 TABLE 6a.—Absences due to "earache and ear diseases" in Hagerstown schools December, 1921–May, 1925

	Earache dise	and ear eases	Ear	ache	Ear diseases		
Age	Number of cases	Rate per 1,000 •	Number of cases	Rate per 1,000 •	Number of cases	Rate per 1,000 •	
6	88 131 128 107 69 63 40 33 316 13	102 76 73 66 43 43 46 49 34 33 323 13	71 116 112 93 54 52 54 32 24 11 11 6	82 67 64 57 33 33 35 42 27 24 6 6	17 15 16 14 15 15 17 9 8 9 8 9 5 7	19.8 8.7 9.1 8.7 9.3 11.4 7.0 6.8 9.1 7.3 7.1	

• Rate per 1,000 children per school year of 180 school days.

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Otitis media was shown quite definitely to be a disease of children, and followed closely the curve of infectious diseases (fig. 7). The number of cases of mastoiditis is too small to offer any evidence as to variations in incidence according to age. "Earache" must be regarded as a symptomatic term under the general title of ear diseases and conditions. Its relatively infrequent occurrence among children under 5 years of age as compared with its higher incidence in the age



FIG. 7.—Incidence of certain diseases and conditions of the ear manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

period 5 to 9 years is probably more apparent than real; it is doubtless due in part to the fact that it is a subjective rather than an objective symptom and in part probably to a tendency to call in a physician in cases of earache more frequently for younger children than for older. This possibly increases the recorded incidence of otitis media among young children.

#### 7. DISEASES OF THE CIRCULATORY SYSTEM

1141

(Int. List Nos. 87-96)

TABLE 7

	Annual rate per 1.000								
Diseases and conditions	All ages	0-4	5 <b>-9</b>	10-14	15-24	25-44	45-64	65 and over	
Total	24.04	12.38	10.93	18. 10	11.09	15.72	43.88	117. 24	
Diseases of the heart	13.44		2. 38	9.92	7.13	9.69	25.24	74.05	
High blood pressure	1.82				. 40 . 40	.86 1.94	8.15 3.11	4.94	
Adenitis Nosebleed and other hemorrhage Other circulatory	3.45 1.03 1.27	11.82 .56	6. 18 1. 90 . 48	6.42 .58 1.17	2.38 .40 .40	. 86 2. 37	. 78 2. 72 2. 33	3. 70	

The caution already emphasized, that our data are not records of defects as discovered by medical examination and clinical observation but records of illness due to more or less specific conditions, is particularly pertinent in interpreting the age incidence of illnesses



FIG. 8.—Incidence of diseases of the circulatory system manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

due to circulatory diseases. Yet, for the most part, these illnesses were real disabilities, and 83 per cent of the 287 cases were attended by physicians.

The incidence of illness due to circulatory diseases and conditions among children and adolescents was due in part to glandular inflammation, especially in the ages under 10 years. (Fig. 8.) Diseases of the heart were relatively more frequent causes of illness in the age period 10-14 than at younger ages or until adult life, an indication

which is reflected in the age specific mortality rate for this group of causes. This indication appeared also in the records of absences due to heart conditions among the Hagerstown school children during (1) the period 1921-1925. Although the number of cases (60) is small, a variation according to age seems to be manifested within the school-age period, as follows:

TABLE 7a.—Absences due to heart conditions in the Hagerstown schools, December,1921, to May, 1925

Age	Rate per 1,000 •	Number of cases	Age	Rate per 1,000 •	Number of cases
6 7 8 9 10 11	3.5 1.2 2.8 1.9 5.6 6.7	3 2 5 3 9 10	12 13 14 15 16–18	7.7 5.1 7.0 2.9 3.0	10 6 7 2 3

• Rate per 1,000 children per school year of 180 school days.

The familiar rise in prevalence of heart disease in middle and old age is evidenced in these morbidity records as well as in mortality experience, but the rise of mortality from heart disease as age advances is at a much more rapid rate than that of the morbidity rate. If we compare the curve shown in Figure 8 with the mortality curve, for example, in the original registration States for 1920, the ratio of illnesses to deaths is about 30 at 15-24 years, 20 at 25-44, 8 at 45-64, and only 2 after 64 years.

#### 8. RESPIRATORY DISEASES

(Int. List Nos. 11, 31, 97-107, 109)

TABLE 8

			Ar	nual ra	te per 1	<b>,00</b> 0		
Disease or condition	All ages	Un- der 5	5-9	10-14	15-24	25-44	45-64	65 and over
Total	664. 5	929. 2	913. 8	779. 9	496. 9	568.8	593. 7	597.3
Influenza and grippe Pneumonia Pleurisy Tonsillitis Sore throat Quinsy Other pharynx. Diseases of the larynx Croup. Laryngitis Other diseases of the larynx Hay fever. Asthma. Pulmonary tuberculosis. Other diseases of the respiratory system (including head colds, chest, and bronchial	114.2 8.7 2.3 66.7 28.6 26.1 8.3 8.7 11.4 5.3 5.1 1.0 2.0 4.1 3.3 421.9	115.9 40.0 1.1 44.5 31.0 8.4 5.1 20.3 18.0 2.3 707.5	163. 0 9. 5 1. 9 153. 0 56. 1 78. 9 1. 9 16. 2 24. 7 20. 9 3. 8	162.3 7.0 6 155.3 61.9 75.3 2.9 15.2 9 15.2 2.9 15.2 2.3 1.2 5.3 6 440.2	107.7 2.0 2.4 69.3 32.9 21.8 5.1 9.5 4.4 2.8 5.5 300.1	162.6 3.0 2.2 39.0 18.7 9.0 5.0 6.2 7.8 .2 7.8 .2 7.8 .2 7.9 2.4 5.2 5.4 341.4	149.5 5.4 4.7 20.6 7.0 6.6 5.4 12.4 9.7 2.3 3.5 5.4 3.1 389.1	132.0 9.9 3.7 11.1 13.7 4.9 
Conditions) Coryza •	217. 1 123. 5 53. 3 7. 3 . 5	362. 2 269. 6 89. 5 7. 3	271. 5 181. 3 75. 0 31. 4 	232. 6 94. 2 48. 9 9. 9	146. 0 56. 0 26. 0 5. 1 1. 6	202. 0 87. 0 43. 3 2. 2 . 4	169.7 115.2 56.8 .4 .4	174. 7 161. 7 65. 2

• Based on records from February 1, 1923-March 31, 1924.



F16. 9.—Monthly incidence of certain respiratory diseases and conditions in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

Many minor respiratory affections were not included in the records we obtained. This was evident at the time the study was made, and is also shown to be true by later studies of the United States Public Health Service, which, by obtaining reports at much shorter intervals, showed the respiratory rate to be much higher than that recorded for the Hagerstown group.<sup>7</sup> Again, attention may be invited to the fact that nearly all the cases recorded in the Hagerstown study were illnesses in the common understanding of the term and, therefore, excluded respiratory attacks which, however definite they may have been clinically, were not accompanied by that degree of malaise which ordinarily is denoted as illness.

Since only 34 per cent of the respiratory cases recorded were attended by physicians, it was difficult to designate many of them by a more specific diagnostic term than that which the lay informant would ordinarily use. During the first half of the study we obtained information that was specific enough to make a rough classification into (1) influenza and grippe, (2) pneumonia, (3) pleurisy, (4) tonsillitis, (5) sore throat, (6) quinsy, (7) other diseases of the pharynx, (8) hay fever, (9) asthma, and (10) pulmonary tuberculosis. The remainder were grouped under a general heading (11) "Other diseases of the respiratory system" which included bronchitis, "bronchial colds and coughs," "chest colds," etc. In the second half of the study an attempt was made to obtain more specific information with the result that we were able to refine our classification and add the following: (12) Coryza and rhinitis, (13) bronchitis, and (14) "chest colds," "cough," and "bronchial conditions." This refinement probably had the additional effect of increasing the number of specific tonsil and throat conditions in the second 14 months of our study over what would have been recorded had no change in method of inquiry been made.

As the classification finally stands, however, we feel that the differentiations are roughly accurate from the point of view of present clinical knowledge. Obviously the distinction between "colds" and "influenza and grippe" is not clear, as the accompanying graphs of their monthly incidence suggest (fig. 9), since peaks in "colds" occur simultaneously with peaks in influenza. The age curves for the two conditions (fig. 10) are also quite similar, except for children under 5 years of age—an exception that can be accounted for by the inability of small children to tell the subjective symptoms ordinarily associated with influenza or grippe. But the other classes or kinds of

<sup>&</sup>lt;sup>7</sup> A study based on semimonthly reports from a group of medical officers of the Army, Navy, and Public Health Service and members of several college faculties upon the incidence of respiratory attacks among themselves and members of their families showed a rate of 2.009 per 1,000 during 1924 (3). A similar study for several thousand college students reporting upon themselves showed a rate of 2,877 per 1,000 during the period June 1, 1924-May 30, 1925.



FIG. 10.—Incidence of respiratory diseases and conditions manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

respiratory affections and diseases seem to be fairly well differentiated. In the first place, a considerable proportion of each were diagnosed by attending physicians, as the following table shows:

 
 TABLE Sa.—Proportion of cases of various respiratory diseases that were attended by physicians

Disease or condition	Number of cases	Per cent attended by phy- sicians
Pulmonary tuberculosis Pneumonia	48 111 33 465 2,317 99 86 92 86 497 828 1,780	98 97 88 73 67 65 47 36 33 21 14 7

May 11, 1928

In the second place, the age curves suggest fairly definite differences. Referring first to Figure 10, bronchitis is in clear distinction to coryza and to influenza on the one hand, and to diseases of the pharynx and larynx on the other hand. Considering tonsil and throat conditions (fig. 11), the age curves for pharyngeal conditions is quite different from those for laryngitis and also for croup.<sup>8</sup>

The number of cases of asthma, hay fever, pleurisy, and tuberculosis is perhaps too small to be of general interest, but the rates



FIG. 11.—Incidence of throat and tonsil conditions manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

are plotted in Figure 12 as a record of our experience. In general, they conform to the indications afforded by such other morbidity data as are available. With respect to tuberculosis, it may be pointed out that only active cases resulting in some degree of disability during the period of observation were recorded.

<sup>&</sup>lt;sup>9</sup> The epidemiological and etiological evidence bearing on this point is presented and discussed in detail by Collins (4) in his monograph "An Epidemiological and Statistical Study of Tonsillitis, Including Related Throat Conditions." The Hagerstown data will be considered in greater detail in a review of the morbidity records from all sources bearing on respiratory attacks, which is in preparation.

## 9. DISEASES OF TEETH AND GUMS

(Int. List No., Part of 108)

TABLE 9
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FIG. 12.—Incidence of certain respiratory diseases and conditions manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

This record can not, of course, be interpreted as indicating the prevalence of defective teeth and diseased gums. It indicates nothing more than the incidence of diseases and conditions that manifested themselves in abscesses and in pain severe enough to result in temporary disablement. About 60 per cent of these cases caused the patient to go to a dentist or a physician.

#### 10. DISEASES AND DISORDERS OF THE DIGESTIVE SYSTEM

(Int. List Nos. 110-127; part of 108 and of 205)

TABLE 10

	Annual rate per 1,000								
Disease	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over	
Total	102.01	158.71	148.25	130. 18	61.76	71. 29	109. 11	101. 20	
Ulcers of stomach and duodenum Indigestion and upset stomach and nervous	. 73				.40	1.08	2. 33		
indigestion	44.74	69.23	77.93	58.96	24.55	28.65	44.26	48.13	
Diarrhea	13. 26	58.53	7.60	9.92	6.33	8.18	8.15	9.87 7.40	
Intestinal parasites	1.39	7.32	3.33	1.17		. 22			
Appendicitis	5.99	. 56	4.28	7.59	12.27	5.38	6. 21		
Hernia	1.63         .56         .48         .58         .40         1.72         4.66           .85         1.13							3.70	
Onsupation								3.70	
Diliory colorili								1.23	
Choleovetitie	1 04		49	59	4.00	1.51	A 21	2. 11	
Jaundice	2 72	3 94	9 98	3 50	1 98	65	1 16	0.70	
Other liver	1.88	. 56	. 95	1.17	40	65	6 21	7 40	
"Billousness"	10. 41	4.50	20. 91	27.44	8.71	4. 31	8. 54	11.11	

Since only 58 per cent of illnesses reported as due to digestive disorders and diseases were attended by physicians, anything approaching diagnostic exactness for every case was impossible in this group. In the foregoing table, the classification has followed rather closely the terminology of the information as given, excepting cases under the following titles, nearly all of which were attended by physicians: Ulcers of stomach and duodenum, diarrhea (under 2 years of age), appendicitis, hernia, biliary calculi, cholecystitis, and jaundice. For the other cases, perhaps a very broad classification may be attempted, as follows: (a) Indigestion, upset stomach, nervous indigestion, stomach trouble, nausea (when not a symptom of some disorder specifically stated) which we may designate as "indigestion and upset stomach"; (b) "biliousness," with which may be placed "other liver conditions"; and (c) diarrhea. The classification is made partly on grounds that are apparent and partly by reason of similarity and dissimilarity of age curves, so that, as shown in Figure 13, diarrhea exhibits a definitely high incidence among children under 5 years of age, and thereafter does not vary greatly according to age; "indigestion and upset stomach"-some of which may have been attended by diarrhea, it is true-had a high incidence among children under 15, with its peak between 5 and 10

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years; "biliousness" was less commonly reported, but was relatively frequent in the age period 5 to 9 years and was most frequent in the 10 to 14 years period. The incidence of illnesses classified under the last two headings was lowest in the young adult period, but rose gradually as age advanced.

The age curves of jaundice, appendicitis, biliary calculi, cholecystitis, and hernia have been plotted in Figure 14 and are in general accord with textbook observations. It is believed that they are





especially interesting for the reason that, so far as we are aware, they are based on a record of recognized cases (i. e., resulting in illness and attended by physicians) in a definitely enumerated general population group.

#### 11. DISEASES OF THE KIDNEY AND ANNEXA

(Int. List Nos. 128-134)

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	Annual rate per 1,000								
Disease or condition	All ages	0-4	5 <b>-9</b>	10-14	15-24	25-44	45-64	65 and over	
Total	14.35	9.00	5. 70	6. 42	4.36	10.77	<b>30. 29</b>	66. <b>64</b>	
"Kidney trouble," unqualified Calculi of urinary passages Cystitis Other "bladder trouble"	5. 51 . 85 1. 39 1. 45	7.88	3. 33 1. 90	4.67	1.98	5. 82 . 65 . 86 1. 29	7. 38 3. 11 3. 88 3. 49	12. 34 3. 70 8. 64 3. 70	

The rates in the table above, it may be emphasized, can not be interpreted as revealing the true prevalence of the diseases and conditions specified; they merely show the frequency of illnesses in which these diseases and conditions were stated to be causes during the period of the study. Of the 175 cases in which they were so recorded, 86 per cent were attended by physicians, and on approximately that proportion the attending physicians recorded the diagnoses as reported. The remaining 14 per cent consisted chiefly of cases reported as "kidney trouble."



FIG. 14.—Incidence of certain diseases of the digestive system manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

Except for some prevalence of a condition or conditions vaguely reported and diagnosed as "kidney trouble" in children and in the younger adult ages, it is quite evident that diseases and conditions in this group caused illness in middle and old age, especially in old age, to a greater extent than at younger ages.

The age curve of illness from nephritis is generally similar to that for mortality from acute nephritis and Bright's disease, but the ratio of cases to deaths decreases rapidly with age. Even if we include all illnesses from kidney conditions, such a ratio of cases to deaths would show a marked decline. Using the 1920 mortality rates for the registration area, the ratio of the Hagerstown illnesses rate (assuming it to be representative in some degree) to the death rate declined from about 70 under 15, to 40 at 15-25, 20 at 25-44, 10 at 45-64, and 5 at 65 and over. The morbidity rates and these ratios mean nothing more, of course, than that as age advances, not only does the incidence of the disease increase but its fatality does also. Our record of cases and deaths in the population observed is too scanty and too brief to permit of any attempt to ascertain or estimate fatality rates.

#### 12. NONVENEREAL DISEASES OF THE GENITO-URINARY SYSTEM

(Int. List Nos. 135-142)

	Annual rate per 1,000								
Disease or condition	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over	
Total •	13.02	1. 13	1. 43	8. 17	17.02	21. 11	17.47	7. 40	
Diseases of male organs b	1.50 2.47 2.11 6.11 4.81 8.34	2.12	1. 83 . 99	1. 18 13. 84 1. 15	. 83 4. 53 2. 26 15. 85 9. 06	. 46 4. 84 4. 44 5. 25 6. 05 18. 56	. 80 1. 51 1. 51 4. 52 18. 09 7. 54	11. 56 2. 15 2. 15 2. 15	

TABLE 12

• Rates computed on males and females. • Rates computed on males. • Rates computed on females.

The rates given above are probably based on too few cases to be in any degree typical, but they are not without interest. With the exception of 22 of the 47 cases of "menstrual troubles," practically all of the cases in this group were attended by physicians. The data represent, therefore, the prevalence of these conditions in our population to the extent that they come to the attention of physicians by reason of illness.

#### 13. THE PUERPERAL STATE

(Int. List Nos. 143-150)

TABLE 13

	Annu	al rate p	er 1,000 f	emales
Condition	10-14	15-24	25-44	45-64
Total	2. 31	84. 55	110. 98	2.26
Abortion and stillbirth	1. 15	3.02 74.73	11.30 87.17	
Other puerperal conditions	1. 15	6.79	12.51	2. 26

The annual birth rate for our population was 19.6. Based on females aged 15-44, the birth rate was 65.2. The stillbirth (and abortion) ratio was 10.2 per 100 live births—an extremely high ratio when compared with records ordinarily published in vital statistics.<sup>9</sup> Obviously this can not be taken to indicate the occurrence of an unusual frequency of stillbirths as there was every reason to believe that the ratio for the population studied would not be higher than the average. Rather, the reason lies in the fact that we were able to secure a record of a larger proportion of stillbirths than is ordinarily reported and, in addition, a partial record of abortions. Our record is, we believe, probably not far wrong, since the field assistants made repeated visits to the same households.

## 14. DISEASES OF THE SKIN AND CELLULAR TISSUE

(Int. List Nos. 151-154; part of 205)

	Annual rate per 1,000								
Disease	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over	
Total	19. 43	39.96	40. 39	33. 27	10. 69	10. 34	7.38	14. 81	
Furuncle	4.66 1.88 1.45	3.38 1.69 3.38	9.03 1.90 3.80	6.42 1.75 5.84	4.75 1.58	4. 31 2. 80	2.33 .78	2.47 1.23	
"Sores" on body Hives and rash Other and unqualified skin	1. 51 4. 06 2. 91 2. 97	3.94 15.20 7.88 4.50	4.28 10.93 6.18 4.28	2.34 8.17 3.50 5.25	1. 19 . 40 1. 98 79	. 43 . 43 . 86 1. 51	1.94	1. 23	

TABLE
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It was difficult to classify the various skin affections that were recorded except in those instances in which a physician's diagnosis was obtained. Hence the incidence of specific diseases included in the above table has probably been understated, although their variations according to age are roughly indicated. The percentages of the cases, as classified above, which were attended by physicians were as follows: Furuncle, 48 per cent; abscess, 82; impetigo, 71; scabies and itch, 52; rash, 39; hives, 47; "sores" on body, 28; other, 89; total 55. The incidence of rash, impetigo contagiosa, and "sores" was greatest among children under 10 years of age; of scabies in the age period 10-14; of furuncles and abscesses under 45 years of age, with its peak in the 5-9 age period. Some of the more specific diseases have been plotted on Figure 15.

<sup>•</sup> The stillbirth ratio for whites in the birth registration area was 3.8 per 100 live births in 1925 and for whites in Maryland was 5.8.





FIG. 15.—Incidence of diseases of the skin and cellular tissue manifested in illness among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924

#### 15. CONGENITAL MALFORMATIONS AND EARLY INFANCY, SENILITY, AND ILL-DEFINED AND UNKNOWN CAUSES

(Int. List Nos. 159-163, 164, 205)

TABLE 15

- Санзе	Annual rate per 1,000							
	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over
Congenital malformations and "early in- fancy"	1.15 .85	7. 32	0.95	1.75		7 75	10.48	17.28

The foregoing table requires little comment. The largest proportions of ill-defined or unknown causes of illness were, as might be expected, for young children and old persons. The senility rate of 17 is based on 14 persons, which is lower than we anticipated. However, since emphasis was laid on ascertaining the cause of every illness and

disability or the condition by which it might be described, this senility rate, plus the rate for ill-defined and unknown causes in ages over 64, represents the disability rate among persons whose chief trouble was their age.

#### 16. EXTERNAL CAUSES

(Int. List Nos. 165-203)

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Cause	Annual rate per 1,000							
	All ages	0-4	5-9	10-14	15-24	25-44	45-64	65 and over
Total	39. 72	28.70	45. 62	43. 78	32. 46	32. 52	55. 14	46.90
Poisonings	2.78 2.12	3. 38 4. 50	4.75 2.38	4.67 2.92	1.58 1.58	2, 80 1, 72	.78 1.94	2. 47
Cuts Falls	3.69	3.38	5.23	7.59	3.56	2.58	3.11	1.23
Auto, street railway, etc.	3. 39	2.25	3.80	1.17	3.96	3.23	5.44	1.23
Other external	21.07 2.24	11.82	25.06	1. 17	18.61	16.80 2.15	31.84 5.05	25.92 3.70

It will be noted that practically all of the disabilities resulting from external causes were accidents.

Since practically all of the accidents recorded resulted in some degree of disability, our data include the relatively more serious ones only. "Mere scratches," thumb bruised by hammers, bumps, falls without injury, and the like are not included. The age curve shown in Figure 16 indicates two periods of life in which these disabilities are most frequent—5–14 years of age and in middle age. This is in marked contrast to the usual age curve for mortality from violent causes which is higher among children under 5 years of age than in any age period until old age when it rises precipitately; the frequency of fatal accidents is thus clearly indicated to be greatest at the extremes of life.

It was not practicable to find out sufficient details about each accident to classify all under more refined headings than those given in the table, but the rates for such specific kinds of accidents as burns, cuts, falls, automobile and street-railway accidents are fairly accurate, and are plotted in Figure 17. Cuts and burns are, of course, concomitants of childhood, but they were most frequent in the age period 10-14 years. Falls were also most frequent in that age period, except in the older ages. Three ages of high incidence of automobile accidents are indicated—children 5-9, the age period 15-24, and persons of middle age (45-64), in which age group the highest incidence occurred. Although Hagerstown is a small city (30,000 population in 1922-23), the automobile and street-railway accident rate was 3.4 per 1,000 annually in the population studied.



FIG. 16.—Incidence of disabilities from external causes among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 31, 1924



F10. 17.—Incidence of certain kinds of accidents among persons of different ages in a white population group in Hagerstown, Md., December 1, 1921-March 3!, 1921 98247°—28—3

#### Acknowledgments

The continuous field observations upon which the foregoing report is based were made by the following assistants: F. Ruth Phillips, Mrs. Mary King Phillips, Louise Simmons, Mrs. Clara Bell Ledford, Clarice Buhrman, and Mrs. Alcesta Owen, under the immediate supervision of Passed Asst. Surg. R. B. Norment, jr., Acting Asst. Surg. A. S. Gray, and, later, Surg. C. V. Akin.

In the analysis of the data I am especially indebted to Miss Phillips and to Associate Statistician S. D. Collins and Assistant Statistician Dorothy G. Wiehl, and other members of the statistical staff, as well as to several officers of the Public Health Service for constant advice on medical points.

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## PUBLIC HEALTH ENGINEERING ABSTRACTS

Chara Fragilis and Mosquito Development. Robert Matheson and G. H. Hinman. American Journal of Hygiene, vol. 8, No. 2, March, 1928, pp. 279–292. (Abstract by L. L. Williams, jr.)

This article records observations made in central New York State from 1923 to 1927. Lake Dryden produced mosquitoes freely, whereas a spring-fed pool, cut off from the lake, did not produce mosquitoes. The pool contained much Chara fragilis.

For experimental purposes wooden pails were sunk in the ground, filled with rain water, and baited with dead leaves. Culex territans and Anopheles punctipennis laid eggs freely in the pails, and the resulting larvæ came through to emergence. Similar pails among the above, but containing Chara fragilis, showed some eggs and young larvæ, but none lived to pupate. In one such pail the Chara died and subsequently Anopheles punctipennis appeared and came through to emergence. The Chara apparently controlled breeding as long as it was alive.

Experiments were then conducted using known numbers of Anopheles punctipennis, Aëdes vexans, and Culex pipiens and territans. Glass aquaria were stocked with earth and stream water and proved excellent rearing pools for mosquito larvæ. Similar aquaria were prepared, but with the addition of *Chara fragilis*. In the *Chara* aquaria nearly all mosquito larvæ died within two days of their introduction therein. All young larvæ died; emergences were only from the pupæ or fourth stage larvæ introduced.

At the beginning of the experiment the water was practically neutral, having a hydrogen ion concentration of pH 7. Soon after the introduction of the *Chara* it rose to pH 7.6 and fluctuated (depending on time of day) between pH 7.6 and pH 9.8. The pH value was lowest between 3 and 5 a. m., and highest between 3 and 4 p. m.

Net cages containing large numbers of larvæ of *Culex pipiens* were placed in the natural *Chara* pool. In all, about twelve hundred larvæ were so placed. Four adults emerged; all of the remaining died.

Dried *Chara fragilis*, in concentration of two to four grams per liter, had a marked effect on larval development. When young larvæ were introduced, they all died within four days. When fourth stage larvæ were introduced into the solution, a few emerged, all being undersized adults; most of them died.

If larvæ are introduced into the *Chara* pool when the pH value is at its highest, the young larvæ are almost immediately paralyzed and death is relatively quick. However, in other aquaria, if the pH value be raised high—not with *Chara*, but with *Oedogonium*—the same pH values can be obtained; but there is no effect on mosquito larvæ, all coming through to emergence. In addition, if water of high pH value be taken from the *Chara* aquaria and put in a separate jar, larvæ added thereto are not disturbed. The authors believe that there is an unstable toxic substance in *Chara*, and that the toxic action is greatest when the pH value is at its highest.

Can B. Coli be Used as an Index of the Proper Pasteurization of Milk? J. C. Swenarton. Journal of Bacteriology (1927), v. 13, 419–29. Abstract by W. G. Savage in Bulletin of Hygiene, vol. 3, No. 1, January, 1928, p. 20.

"Sixteen Pasteurizing plants were studied with respect to the *B. coli* contents of the Pasteurized milk. The Pasteurizing temperature adopted as satisfactory is 143° F. for 30 minutes with prompt cooling to 40° F. The term *B. coli* is used broadly for lactose-fermenting (with gas), nonsporing aerobes. The test was found to be very helpful in checking up the performances of the different plants.

"The author suggests the following standard: Five quantities, each of 0.1 c. c., to be examined, and of these not more than 20 per cent to show the presence of organisms of the *B. coli* group. Apparently to guard against inequalities of sampling, etc., he adds: 'Occasionally three or more of the five equal 0.1 c. c. portions constituting a single sample may show the presence of *B. coli*. This shall not be allowable if it occurs in more than (a) 10 per cent of the standard samples when 10 or more samples have been examined; or in (b) one standard sample when less than 10 samples have been examined.' This standard is a more or less arbitrary one, based on the findings from the best plants examined."

Sanitary Production of Ice Cream. R. C. Fisher. Milk Plant Monthly, vol 16, No. 3, March, 1927, pp. 98-104. (Abstract by Harriet S. Ryan.)

This paper, which was read at the convention of National Association of Ice Cream Manufacturers, discusses the essential factors in sanitary production of ice cream.

It is the desire of all responsible ice-cream manufacturers to make an ice cream that meets all requirements from a health and sanitary standpoint. There is, however, difference of opinion as to just what is necessary to produce a product that is safe. Some have gone to extremes in taking sanitary precautions, while others have failed to appreciate the importance of certain processes of manufacture. The bacterial content of ice cream is a more valuable measuring stick
of the Pasteurizing process and the sanitary conditions prevailing in the plant than it is in the case of milk. There is some chance for bacterial growth after milk reaches the final package, but no such conditions prevail in the manufacture of ice cream, which is kept in a frozen condition from the time it reaches the can until it is consumed.

The cssentials in sanitary production, which are treated in detail in this article, may be summarized as follows: (1) Well-lighted and ventilated building; (2) simple construction of equipment for easy cleaning; (3) Pasteurizing equipment with flush and seepage-proof valves; (4) careful selection and care of ingredients; (5) Pasteurization of the entire ice-cream mix, excepting flavors and fruits, at not less than 50° F. for 30 minutes; (6) cooling and holding of milk below 40° F.; (7) thorough daily cleaning of all equipment; (8) flushing entire system with (a) hot water not less than 180° F., or (b) flush in freezers with chemical sterilizers; (9) routine bacteriological analysis of mix and ice cream, to determine the efficiency of the above processes; and (10) organization and building up of a strong working force.

Sanitary Control of the Montreal Dairy Company, Ltd. Fifth Annual Report of the Provincial Bureau of Health, Province of Quebec, Canada, 1926-1927, pp. 147-149. (Abstract by I. W. Mendelsohn.)

During the course of the typhoid fever epidemic in Montreal in the spring of 1927, the Montreal Dairy was placed under the absolute sanitary control of the Provincial Bureau of Health chemist. This control lasted from May 21 for 10 weeks, and embodied the following features: (1) Thorough disinfection of both The plant Pasteurizing milk and cream was disinfected plants of the company. twice; (2) continued and frequent examination of all employees of the plants who might come in contact with the products during or after processing or manufacture; (3) removal of all employees suspected of being infected, or who had typhoid in their families, from contact with the products of the plants; (4) maintenance of a close supervision over the raw materials entering the plants to insure that only milk or cream from sources authorized by the city food inspection division of the Montreal Department of Health enters the plants; (5) maintenance of close and constant supervision over every stage of the processing of the milk or cream, or of the manufacture of the ice cream or butter; (6) storage of butter until released upon bacteriological examination; (7) alterations and improvements effected in equipment and methods of processing better to insure the safety of the products; (8) bacteriological examination, at the plant, of the products in various stages of processing; (9) further bacteriological and chemical examinations of various products at the laboratories of the bureau.

A complete report of the epidemic is under preparation.

Befuse Collection and Disposal in Germany. Anon. The Surveyor, vol. 73, No. 1882, February 17, 1928, p. 237. (Abstract by H. W. Streeter.)

A review of a report by F. C. Cable, cleansing superintendent of the Westminster City Council, on his observations of methods of collecting and disposing of refuse in German towns, including Cologne, Mannheim, Frankfort, Weidenau, and Hamburg. The review deals mainly with the methods of collection observed.

At Cologne, the refuse was being disposed of by tipping on land 10 miles from the city, though a destructor, then nearing completion, was intended to burn all the refuse of the city. At this and other cities visited, the method of collection involved the use of standard dustbins, distributed to individual householders and collected, usually biweekly, by specially constructed trucks, in some cases equipped with trailers.

At Hamburg, where the Trommel-Wagen system is in operation, about 35 per cent of the refuse goes to a destructor, the remainder being tipped on land. With this system collection vehicles of a new type are used. When these wagons arrive at the destructor, the bodies are slung off and raised up, the refuse being tipped onto the floor and eventually fed into the furnaces. The system is entirely dustless, and, as far as the design of dustbins and receiving tanks is concerned, Mr. Cable considered it the best system in operation at the time. He recommends its adoption for Westminster. In general, he considers that portions of the Continent are ahead of England so far as methods of refuse collection are concerned, but that the latter is equally ahead of the former in methods of disposal.

Garbage Collection and Disposal. R. W. Stewart. *Pacific Municipalities*, vol. 42, No. 2, February, 1928, pp. 45-48. (Abstract by F. E. DeMartini.)

Due to a lack of intelligent study of garbage handling, some cities dispose of their garbage at considerable expense. Experience of Los Angeles with chemical reduction and with disposal of garbage on a hog farm is described. A landholding company pays \$0.60 per ton for garbage f. o. b. cars Los Angeles, and \$1.20 per ton for hauling the garbage to farm, and is still making a profit. Chief cost of garbage collection is caused by labor and delay necessary to enter premises to obtain the garbage. Comparison of collection methods in Los Angeles has shown that for any route within cruising radius of a team, a team is more economical than a motor truck for collecting garbage. On routes with steep grades, motor trucks are preferred. Rubbish collection and disposal are related problems. The value of rubbish lies chiefly in its content of bottles and tin cans.

The Court Rules upon an Exclusive Garbage-Removal Franchise Under an Ordinance Requiring Owner to Separate Refuse and Pay for Removal.<sup>1</sup> Anon. The American City, vol. 38, No. 1, January, 1928, p. 183. (Abstract by Harriet S. Ryan.)

A case came up in the Kansas City Court of Appeals in which the plaintiffs unsuccessfully sought to restrain the defendant from removing garbage which the plaintiff had refused to remove. They attempted to justify their refusal under a provision of the ordinance that purported to excuse them from removing garbage that had not been separated, or for persons who had not paid the required fee. The court held that this provision was void. The plaintiffs assumed a right under their franchise by taking into their own hands a method of punishment, where a legal method was provided. An ordinance permitting plaintiffs to refuse to remove garbage and to permit it to remain upon premises would defeat the purpose for which the ordinance was enacted.

Water Purification. P. H. Henderson. Journal of the Royal Sanitary Institute, vol. 48, No. 9, March, 1928, pp. 481-483. (Abstract by W. L. Havens.)

This article contains a brief summary of the methods used by the British Army prior to and during the World War in the provision of drinking water. Army units were provided with one of more water carts, the main tank of each cart containing 110 gallons of water. The water was pumped from the source by semirotary pumps through compressed sponge, contained in cylinders, into the main tank and thence through porcelain filter candles into a smaller tank from which the water bottles were filled. It was found that the sponges did not act as efficient clarifiers, that it was impossible to ascertain whether the filter candles were free from flaws or were allowing the passage of bacteria, and that it was difficult to secure a bacterium-proof junction between the candles and the caps of the cylinder to which they were attached. During the war, Sir William Horrocks introduced the use of aluminum sulphate as a precipitant and chlorine as a sterilizing agent. This method, however, had the following objections: (1) In the absence of perfect clarification, chlorine is deviated by the organic matter and either produces unpleasant tastes or is not available to kill the microorganisms; (2) if excess chlorine is added the strong chlorine taste is extremely

<sup>&</sup>lt;sup>1</sup> For fuller report of this decision see Public Health Reports, Oct. 21, 1927, p. 2603.

unpleasant; (3) if dechlorination is used, no chlorine is available in case subsequent accidental pollution takes place.

Polluted Water Causes Epidemic. Anon. Illinois Health News, vol. 14, No. 2, February, 1928, pp. 42-43. (Abstract by R. E. Tarbett.)

A short description of an outbreak of an intestinal disorder occurring in Marseilles, Ill. The outbreak involved 54 known cases, with an estimated number two to four times that. Epidemiological data implicated the public water supply, which is obtained from artesian wells flowing to a storage reservoir.

Samples of water collected the third morning after the outbreak started showed decided contamination in the water in the distribution system and slight contamination at the pumping station. Upon draining the reservoir, a hole in the bottom of the side wall adjoining a power race carrying polluted Illinois River water was found. This allowed race water to enter the reservoir when the water in the reservoir stood at a lower level than that in the race. An ice jam in the river just before the epidemic occurred had raised the level of the water in the race above normal and above the level of the water in the reservoir.

The Rôle of Ammonia in the Purification of Water. C. H. H. Harold. Journal Royal Sanitary Institute, vol. 48, No. 9, March, 1928, pp. 484-488. (Abstract by W. L. Havens.)

During the 1925 maneuvers of the British Army, Major Harold introduced a new method of purifying water. This method consisted in preliminary treatment with ammonia followed by sterilization with chlorine. In this way the absorption of chlorine is restrained and its germicidal powers are enhanced. The sterilizing agent is not unduly deviated by organic matter, and a safe water is produced, practically free from unpleasant tastes. The chlorine solution was given initial contact with the ammonia prior to dosing into water and the highest concentration which did not show evidence of available chlorine was fixed upon as the Two compounds were produced by the interaction of one equivalent of optimum. chlorine with one-half an equivalent of ammonia. In a foul water containing urine and nitrites in unreasonable amount some absorption of monochloramine was evident, but with all casual waters encountered, a dose of 1 p. p. m. has always sufficed. Dichloramine is slower in action, but possesses greater stability than monochloramine. Normally, each water cart having a capacity of 110 gallons is dosed with 1.25 grams of ammonium bicarbonate and about 3 grams by weight of dry chlorine gas.

New Waterworks at Merritton, Ontario. E. H. Darling. Contract Record and Engineering Review, vol. 41, No. 52, December 28, 1927, pp. 242-245. (Abstract by R. E. Thompson.)

The water supply of Merritton is obtained from a branch of the Welland Canal above Thorold at Lake Erie level. The turbidity at times is as high as 400 p. p. m. The original supply system consisted of an intake and a settling basin or reservoir of 3,000,000 gallons capacity, the water being delivered by gravity to the town 165 feet below. Owing to ice troubles, augmented by prevailing low water level, a new 18-inch intake, in 18 feet of water, and a pump were installed. When negotiations with neighboring municipalities for the construction of a joint filter plant had failed, it was decided to construct a filter plant, instructions being issued to this effect on February 1. The plant was put in operation in the open on April 23, i. e., in less than 12 weeks' time, the filter house being constructed later. The plant consists of mixing chamber providing 20 minutes' retention period, a coagulation basin providing 32/3 hours' retention period, four pressure filters of 11/2 m. g. d. total capacity, and chlorinating equipment. The total cost was \$66,300, and of the filter equipment alone, \$12,500. The old settling basin was converted into a filtered water reservoir.

### DEATHS DURING WEEK ENDED APRIL 28, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended April 28, 1928, and corresponding week of 1927. (From the Weekly Health Index, May 2, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended Apr. 28, 1928	Corresponding week 1927
Policies in force	71, 066, 816	67, 499, 046
Number of death claims	14, 249	13, 807
Death claims per 1,000 policies in force, annual rate.	10. 5	10. 7

Deaths from all causes in certain large cities of the United States during the week ended April 28, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, May 2, 1938, issued by the Bureau of the Census, Department of Commerce)

		death	1 y	Infant mortality	
City Total deaths	Death rate <sup>1</sup>	1,000 corre- sponding week 1927	Week ended Apr. 28, 1928	Corre- sponding week 1927	week ended Apr. 23, 1928 <sup>2</sup>
Total (66 cities)	14.8	13. 5	867	832	3 72
Albany '       46         Atlanta       75         White       40         Colored       35         Baltimore '       237         White       182         Colored       55         Birmingham       85         White       36         Colored       49         Boston       258         Bridgeport       42         Buffalo       165         Camden       43         Chicago '       912         Colored       70         Denver       30         White       33         Colored       71         Des Moines       229         Detroit       333         Brite       32         Colored       6         Grand Rapids       35         Houston       32         White       32         Colored       6         Grand Rapids       35         Houston       32         White </td <td>20. 0 15. 4 (3) 14. 9 20. 0 (3) 16. 9 15. 5 14. 5 16. 6 12. 5 16. 6 12. 5 16. 6 12. 5 16. 6 9. 6 (4) 17. 9 10. 0 13. 0 (5) 17. 8 (1. 3) 11. 1 (5) 14. 5 (6) 9. 6 (7) 17. 9 10. 0 13. 0 (9) 15. 7 17. 8 (1. 3) 11. 1 (1. 3) 11. 1 (3) 14. 5 (4) (5) 16. 9 (7) 17. 9 10. 0 13. 0 (1. 3) 11. 5 (1. 3) 11. 6 10. 0 (1. 3) 11. 1 (1. 3) 11. 1 (1. 3) 11. 1 (5) (6) (7) 17. 9 10. 0 13. 0 (7) 17. 9 10. 0 (7) 17. 9 23. 0 (7) 16. 2 16. 9 2 16. 9 16. 2 16. 2</td> <td><math display="block">\begin{array}{c} 19.6\\ 15.5\\ 12.8\\ 21.9\\ 14.3\\ 12.7\\ 23.4\\ 15.6\\ 11.4\\ 22.2\\ 16.2\\ 13.8\\ 14.7\\ 13.7\\ 12.4\\ 12.8\\ 17.5\\ 10.3\\ 15.6\\ 9.6\\ 9.1\\ 13.3\\ 15.7\\ 12.4\\ 12.8\\ 17.5\\ 10.3\\ 15.6\\ 9.6\\ 9.1\\ 13.3\\ 15.7\\ 14.0\\ 13.2\\ 10.0\\ 16.5\\ 9.1\\ 13.3\\ 15.7\\ 14.0\\ 13.2\\ 12.8\\ 17.5\\ 10.3\\ 10.3\\ 10.1\\ 12.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 17.9\\ 10.8\\ 17.2\\ 14.0\\ 17.9\\ 10.8\\ 17.2\\ 14.0\\ 17.9\\ 10.8</math></td> <td>6 5 3 2 2 2 2 1 5 7 1 3 4 9 2 8 7 2 1 4 5 5 5 5 9 2 2 2 8 7 1 1 1 0 9 1 4 0 2 9 3 5 10 4 4 0 3 10 6 4 8 5 3 13 5 3 2 5 1</td> <td>2 8 2 6 4 15 9 6 5 1 26 3 19 4 5 3 6 18 27 6 5 5 0 0 1 4 47 3 5 5 5 5 2 2 0 3 5 4 1 14 12 2 8 2 2 0 9 6 1</td> <td>123 70 60 100 111 55 203 77 128 90 71 80 119 81 83 76 65  17 62 86 128  47 47 47 47 47 47 47 62 86 128  61 45 52 77 70 70 70 70 70 70 70 70 70</td>	20. 0 15. 4 (3) 14. 9 20. 0 (3) 16. 9 15. 5 14. 5 16. 6 12. 5 16. 6 12. 5 16. 6 12. 5 16. 6 9. 6 (4) 17. 9 10. 0 13. 0 (5) 17. 8 (1. 3) 11. 1 (5) 14. 5 (6) 9. 6 (7) 17. 9 10. 0 13. 0 (9) 15. 7 17. 8 (1. 3) 11. 1 (1. 3) 11. 1 (3) 14. 5 (4) (5) 16. 9 (7) 17. 9 10. 0 13. 0 (1. 3) 11. 5 (1. 3) 11. 6 10. 0 (1. 3) 11. 1 (1. 3) 11. 1 (1. 3) 11. 1 (5) (6) (7) 17. 9 10. 0 13. 0 (7) 17. 9 10. 0 (7) 17. 9 23. 0 (7) 16. 2 16. 9 2 16. 9 16. 2 16. 2	$\begin{array}{c} 19.6\\ 15.5\\ 12.8\\ 21.9\\ 14.3\\ 12.7\\ 23.4\\ 15.6\\ 11.4\\ 22.2\\ 16.2\\ 13.8\\ 14.7\\ 13.7\\ 12.4\\ 12.8\\ 17.5\\ 10.3\\ 15.6\\ 9.6\\ 9.1\\ 13.3\\ 15.7\\ 12.4\\ 12.8\\ 17.5\\ 10.3\\ 15.6\\ 9.6\\ 9.1\\ 13.3\\ 15.7\\ 14.0\\ 13.2\\ 10.0\\ 16.5\\ 9.1\\ 13.3\\ 15.7\\ 14.0\\ 13.2\\ 12.8\\ 17.5\\ 10.3\\ 10.3\\ 10.1\\ 12.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 10.8\\ 17.2\\ 14.0\\ 17.9\\ 10.8\\ 17.2\\ 14.0\\ 17.9\\ 10.8\\ 17.2\\ 14.0\\ 17.9\\ 10.8$	6 5 3 2 2 2 2 1 5 7 1 3 4 9 2 8 7 2 1 4 5 5 5 5 9 2 2 2 8 7 1 1 1 0 9 1 4 0 2 9 3 5 10 4 4 0 3 10 6 4 8 5 3 13 5 3 2 5 1	2 8 2 6 4 15 9 6 5 1 26 3 19 4 5 3 6 18 27 6 5 5 0 0 1 4 47 3 5 5 5 5 2 2 0 3 5 4 1 14 12 2 8 2 2 0 9 6 1	123 70 60 100 111 55 203 77 128 90 71 80 119 81 83 76 65  17 62 86 128  47 47 47 47 47 47 47 62 86 128  61 45 52 77 70 70 70 70 70 70 70 70 70

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#### May 11, 1928

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Deaths from all causes in certain large cities of the United States during the week ended April 28, 1928, infant mortalily, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, May 2, 1928, issued by the Bureau of the Census, Department of Commerce)—Continued

				-			
	Week ei 28,	nded Apr. 1923	Annual death	Deaths under 1 year		Infant mortality	
City	Total deaths	Death rate 1	1,000 corre- sponding week 1927	Week ended Apr. 28, 1928	Corre- sponding week 1927	veek ended Apr. 28, 1928 2	
Los Angeles. Lowell. Lynn. Memphis White. Colored. Milwaukee. Milwaukee. Milwaukee. Solored. Nashville White. Colored. New Haven. New Gelord. New Haven. New Greans. White. Colored. New York. Bronx borough. Brooklyn borough. Manhatan borough. Manhatan borough. Machatan borough. Newark, N. J. Oakland. Oklahoma City. Omaha. Photland, Oreg. Providence. Richmond. White. Colored. Rochester. St. Louis. St. Lavis. St. Lavis. St. Lavis. St. Lavis. St. Lavis. St. Lavis. St. Paul. Sain Lake City 4. San Antonio. San Diego. San Francisco. Schenectady. Seatule. Spokano. Springfield, Mass. Spracuse. Treloto. Sprokano. Springfield, Mass. Spracuse. Toledo. Trenton. Washington, D. C. Wilien. Colored. Washington, Del. Workes. Suracuse. Toledo. Trenton. Washington, Del. Workes. Suracuse. Colored. Waterbury. Wilie. Colored. Washington, Del. Workes. Spracuse. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wilie. Colored. Waterbury. Wate	$\begin{array}{c} 287\\ 287\\ 73\\ 36\\ 37\\ 73\\ 36\\ 37\\ 73\\ 36\\ 37\\ 73\\ 36\\ 37\\ 73\\ 37\\ 149\\ 90\\ 103\\ 42\\ 24\\ 18\\ 38\\ 38\\ 56\\ 66\\ 66\\ 66\\ 66\\ 66\\ 66\\ 66\\ 66\\ 53\\ 30\\ 214\\ 66\\ 66\\ 69\\ 53\\ 30\\ 214\\ 66\\ 66\\ 69\\ 53\\ 30\\ 214\\ 66\\ 66\\ 69\\ 53\\ 30\\ 214\\ 66\\ 66\\ 69\\ 53\\ 30\\ 214\\ 66\\ 69\\ 53\\ 30\\ 227\\ 76\\ 76\\ 76\\ 76\\ 76\\ 76\\ 76\\ 76\\ 76\\ 7$	9.0 15.9 20.1 ( <sup>3</sup> ) 14.3 11.8 15.8 ( <sup>4</sup> ) 16.6 15.6 17.8 ( <sup>3</sup> ) 15.3 12.6 13.4 20.7 11.7 12.6 13.4 20.7 11.7 12.0 11.4 20.7 11.7 12.0 11.4 20.7 11.7 12.0 11.4 20.7 11.7 12.0 12.0 12.6 13.4 20.7 11.7 12.0 12.0 12.0 12.0 12.0 12.5 12.0 14.3 2 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 13.2 12.2 12.0 13.2 12.0 13.2 12.0 13.2 12.0 13.2 15.2 15.2 15.2 1	$15.6 \\ 12.9 \\ 18.1 \\ 12.2 \\ 28.8 \\ 12.3 \\ 11.5 \\ 18.9 \\ 14.2 \\ 30.8 \\ 14.4 \\ 13.3 \\ 18.7 \\ 13.1 \\ 34.5 \\ 12.0 \\ 17.8 \\ 8.4 \\ 21.3 \\ 13.1 \\ 9.2 \\ 12.0 \\ 17.8 \\ 8.4 \\ 21.3 \\ 13.3 \\ 18.7 \\ 13.1 \\ 9.2 \\ 12.0 \\ 17.8 \\ 8.4 \\ 21.3 \\ 13.3 \\ 18.7 \\ 13.1 \\ 9.2 \\ 12.0 \\ 12.0 \\ 12.0 \\ 12.0 \\ 12.0 \\ 12.0 \\ 12.0 \\ 13.1 \\ 13.1 \\ 13.1 \\ 13.1 \\ 13.2 \\ 12.0 \\ 12.0 \\ 12.0 \\ 12.0 \\ 13.1 \\ 15.6 \\ 15.8 \\$	27 2 7 3 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 8 6 5 5 1 1 6 6 1 1 1 8 8 10 0 173 2 3 6 7 7 2 3 2 6 5 2 3 3 6 7 4 3 4 18 3 4 2 1 4 7 2 2 4 1 2 9 7 3 9 5 4 4 3 5 0	<b>26</b> 6 6 6 6 6 6 6 6 6 6 6 7 1 5 9 6 6 6 5 19 6 6 6 3 3 1 3 25 12 13 15 2 2 6 4 4 0 8 13 5 27 10 7 1 9 22 4 6 6 7 7 18 7 19 9 22 4 6 6 7 7 19 9 22 4 6 7 7 19 9 22 4 6 7 7 19 9 22 4 7 7 19 9 22 4 6 7 7 19 9 6 6 6 7 19 9 6 6 6 7 19 9 6 6 6 7 19 9 6 6 6 7 11 3 11 3 5 12 11 11 11 15 2 2 6 6 7 11 2 5 11 11 11 11 11 11 11 11 11 11 11 11 1	77 42 176 355 19 63 94 48 94 48 94 48 94 107 60 130 155 87 76 35 87 88 93 93 93 108 88 92 25 25 25 25 26 29 81 110 130 63 26 55 87 76 44 81 118 82 82 91 81 119 63 25 87 65 76 76 76 76 76 76 76 76 76 76 76 76 76	
Youngstown	25 37	10.8 11.1	14.0 12.3	3	10	40	

Annual rate per 1,090 population.
 Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.

Data for 65 cities.

Data 101 of cities.
Deaths for week ended Friday, Apr. 27, 1928.
In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Memphis, 36; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

# **PREVALENCE OF DISEASE**

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

# UNITED STATES

#### CURRENT WEEKLY, STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended May 7, 1927, and May 5, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 7, 1927, and May 5, 1928

	Diphtheria		Influenza		Measles		Meningococcus moningitis	
Division and State	Week ended May 7, 1927	Week ended May 5, 1928						
New England States: Maine New Hampshire	7	3 2	£	5	116	52 26	0	0
Vermont					215	25	0	. 0
Massachusetts	81	79	12	49	373	1, 277	2	2
Rhode Island	3	6			2	256		0
Connecticut	22	23	4		94	918	1	2
Now Vork	507	-296	1.40	1 210	747	3 947		59
Now Iorsov	112	128	14	41	80	2,004	3	
Pannesslyania	174	165			667	2 665	4	16
Fast North Control States	114	100			~	2,000		10
Ohio		67		115		930		9
Indiana	21	24	29	163	182	683	0	م
Illinois	112	83	56	136	1.384	244	10	17
Michigan	97	60	4	10	316	892	0	Ö
Wisconsin	20	23	<b>6</b> 0	1,257	605	82	2	2
West North Central States:				l ·				
Minnesota	28	12	2	77	147	93	4	7
Iowa	22				313		1	
Missouri	49	34		- 69	273	409	1	11
North Dakota	2			259	111	21	0	1
South Dakota	6	1	2	13	103	45	0	1
Nebraska	3	9		42	391	55	0	1
Kansas	8	9	7	10	1, 154	236	- 4]	1
South Atlantic States:	_							•
Delaware	1					- 30 -		U U
Maryland 4	<b>£</b> 2	32	2/	10	29	-030	21	U
District of Comminia	20		z		12	1		
Virginia					172			
North Caroline	10	10	1	94	1 503	1 372		Ň
South Carolina	19	-20 5	799	460	42	392	n n	ŏ
Gaorgia	10	5	156	-105	200	367	ň	ň
Florida	12	o l	16	3	86	142	ž I	ĭ
* IVII40	14 1	31	10					•

<sup>1</sup> New York City only.

<sup>2</sup> Week ended Friday.

#### May 11, 1928

# 1164

Cases of	certain communicable	diseases	reported by telegraph	by State health officers
•	for weeks ended May	7, 1927.	, and May 5, 1928-	Continued

	Diphtheria		Influenza		Me	asles	Meningococcus meningitis			
Division and State	Week ended May 7, 1927	Week ended May 5, 1928								
East South Central States: Kentucky Tennessee	11	8	86	14 256	90	268 228	1	0		
Alabama Mississippi West South Central States:	18 7	12 13	62	165	248	251	01	12		
Arkansas Louisiana Oklahoma <sup>3</sup> Texas	21 21 11	3 18 18 50	48 19 68	429 13 468 388	140 54 341	449 258 346 354	0 0 0	1 0 3 1		
Mountain States: Montana Idaho	25	1			43	14	9	13		
Wyoming Colorado. New Mexico Arizona	2 9 2	12 8 7	3 1	101	111 273 63 46	22 184 139 9	0 4 0 0			
Utah <sup>1</sup> Pacific States: Washington	12	5		7	41	1	Ō	5		
Oregon California	14 119	7 95	20 33	21 34	341 2, 069	71 120	3 2 3	13 0 4		
	Poliomyelit		Poliomyelitis		Scarlet fever		Smallpox		Typho	id fever
Division and State	Week ended May 7, 1927	Week ended May 5, 1928								
New England States:		0					1			
New Hampshire Vermont	0	Ŏ	6	16 9	ö	Ŏ		02		
Massachusetts Rhode Island	2	2	469 14	292 33	0	0	7	3		
Connecticut Middle Atlantic States:	ŏ	ŏ	103	66	ŏ	5	ĭ	1		
New York New Jersey Pennsylvania	2 0 0	2 1 0	1, 133 372 500	638 251 482	6 0 0	2 8 1	21 6 15	11 2 17		
East North Central States: Ohio		0		306		60		5		
Illinois Michigan	0	1	260 293	279 230	105 53 56	123 61 12	9 5	9 9 0		
Wisconsin West North Central States:	0	1	134	179	11	5	ĩ	4		
Iowa			36	121	5		1	۱ ۲		
North Dakota	ő	ŏ	32	30	0	3	1	ō		
Nebraska Kansas	0 0 1	0	27 34 98	36 118 150	6 32	8 41 105	0 1 3	0 1 2		
Bouth Atlantic States: Delaware Mergland 1	0	0	9	0	0	0	2	1		
District of Columbia	ŏ		24		Ŭ.	·····	1	••••••••		
West Virginia	0	0	31	27	47	28	7	2		
South Carolina	2	0	25	23	17	6	15	11		
Florida	0	1	17	12	24 30	Ö	15	3 11		

\*Week ended Friday.

\* Exclusive of Tulsa.

	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
Division and State	Week ended May 7, 1927	Week ended May 5, 1928						
Post South Centrel States								
Kontucky	1 1	0		55		3		1 1
Tanneesoa		ň	28	19	16	16	17	
Alshama	Ň	ŏ	ii ii	10	27	īĭ	17	
Mississinni	Ň	Ň	12	ĝ	ō	9	9	
West South Central States		Ů		, i	°,	-	-	-
Arkansas	1 1	0	7	18	2	8	11	l (
Louisiana	i i	ŏ	10	- 8	4	11	11	19
Oklahoma 3	- Ô	ŏ	27	65	53	98	10	3
Teras		3 Å		101		99		
Mountain States								
Montana	0	0	111	47	8	26	. 1	1
Idaho	ŏ	Ŏ	12	7	3	11	Ō	Ċ
Wyoming	ō	Ó	19	21	2	1	0	6
Colorado	ň	ŏ	167	109	ō	10	33	1
New Merico	ŏ	Ŏ	4	25	i	4	Õ	· C
Arizona	i	Õ	11	4	Ō	5	1	5
Utah ?	Ō	Ó	25	2	4	14	0	0
Pacific States:	-							
Washington	1	0	51	43	49	35	3	- 4
Oregon	0	0	19	13	17	32	4	2
California	4	11	178	153	23	22	5	8

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 7, 1927, and May 5, 1928—Continued

<sup>2</sup> Week ended Friday.

\* Exclusive of Tulsa.

#### SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Menin- gococcus menin- gitis	Diph- theria	Influ- enza	Malaria	Measles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
March, 1928										
California	22	454	167	4	1,001	2	15	765	98	32
District of Columbia.	1	89	18		744		2	226	13	2
Idaho	10	- 4	5		2		1	149	41	5
Kansas	9	52	125		410		4	729	386	5
Montana	15	34	16		9		0	55	80	3
New Hampshire	0	17	42				Ŭ	93		10
North Carolina	1	237			14,823		Ŷ	120	9//	12
Oklahoma 1	12	99	2, 140	1 11	1,004	18	0	241	809	29
Oregon	13	55	208	2	490		9	90 21	01/	12
South Carolina	0	241	4, 880	597	3,043	301	0 F	072	49	10
South Dakota	0	11	110		108		9	213	20	
Virginia		193	3,013	60	3,735	40	2	105	202	24
Washington	21	04	41		1,200		2	1 149	118	14
w isconsin	38	147	112		- 585		3	ش11 رو	110	14

<sup>1</sup> Exclusive of Oklahoma City and Tulsa.

March, 1928	Cases
Actinomycosis:	
California	1
Chicken pox:	
California	3, 402
District of Columbia	115
Idaho	83
Kansas	5 <b>92</b>
Montana	54
North Carolina	848

Chicken pox—Continued.	Cases
Oklahoma 1	148
Oregon	238
South Carolina	427
South Dakota	90
Virginia	657
Washington	463
Wisconsin	1, 306
Dengue:	
South Carolina	1

<sup>1</sup> Exclusive of Oklahoma City and Tulsa.

Dysentery:	Cases
California (amoebic)	. 1
California (bacillary)	. 2
Oklahoma <sup>1</sup>	. 4
Virginia	. 54
German measles:	
California	2, 450
Kansas	53
Montana	7
North Carolina	27
Washington	44
Hookworm disease:	
California	1
South Carolina	131
Virginio	22
Impetigo contegioso:	
	10
Washington	19
Taundica	10
California	
Camornia	2
Leprosy:	
California	1
Lethargic encephalitis:	_
California	7
Kansas	1
Oregon	2
Washington	1
Wisconsin	4
Mumps:	
California	1, 530
Idaho	100
Kansas	649
Montana	1
Oklahoma <sup>1</sup>	168
Oregon	96
South Carolina	79
South Dakota	57
Washington	449
Wisconsin	1.413
Ophthalmia neonatorum:	-,
Oklahoma 1	1
South Carolina	18
Paratynhoid fever	
California	4
Idaho	1
South Carolina	
Dink avo	-
Vancos	
Arlahama I	1
	2
<sup>1</sup> Exclusive of Oklahoma City and Tulsa.	

Puerperal septicemia:	Cases
Oregon	1
Rabies in animals:	
California.	48
Idaho	2
South Carolina	24
Rocky Mountain spotted or tick fever:	
Montana	1
Oregon	1
Sentic sore throat:	
North Carolina	11
Oklahoma 1	10
Oregon	18
Sachies	
Oregon	12
Weshington	24
	-
Tetanus:	
Vances	1
Kausas	4
Trachoma:	
California	13
Oklahoma 1	9
South Dakota	2
Trichinosis:	
California	10
Tularaemia:	
Idaho	1
South Carolina	1
Undulant (malta) fever:	
Kansas	1
Vincent's angina:	
South Carolina	18
Whooping cough:	770
California	112
Idebo	*)
Kansas	349
Montana	56
North Carolina	661
Oklahoma <sup>1</sup>	61
Oregon	6
South Carolina	463
South Dakota	55
Virginia	590
Washington	53
Wisconsin	495

#### GENERAL CURRENT SUMMARY AND WEEKLY **REPORTS FROM** CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,575,000. The estimated population of the 95 cities reporting deaths is more than 30,960,000. . The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

### 1166

	1928	1927	Estimated expectancy
Cases reported			
Diphtheria:		]	
43 States	1,431	1,776	
100 cities	829	1,065	859
Measles:			1
42 States	18, 550	14,628	
100 cities	8, 244	4,638	
Poliomyelitis:			
44 States	19	8	
Scarlet fever:			
43 States	3, 936	4,671	
100 cities	1, 598	2, 154	1,271
Smallpox:			
43 States	1,067	790	
100 cities	135	195	119
Typhoid fever:			
43 States	167	239	
100 cities	38	43	49
Deaths reported			
Influenze and uneumonie:			
05 cities	1 333	1 031	
Smallnor	1,000	1,001	
05 nities	1	0	
Innisvilla Kv	1	Ň	
10001071110, Abj		U	

#### Weeks ended April 21, 1928, and April 23, 1927

#### City reports for week ended April 21, 1928

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

• If the reports have not been received for the full nine years, data are used for as many years as possible but no year earlier than 1919 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

		Oh inh	Diph	theria	Influ	ienza			
Division, State, and city	Population, July 1, 1926, estimated	en pox, cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Cases re- ported	Deaths re- ported	Mea- sles, cases rc- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
NEW ENGLAND									
Maine:	76 400	5	1	0					2
New Hampshire:	10, 100	, v	•	v	-	, v			
Concord	1 22, 546	0	0	1	0	0	1	0	3
Manchester	84,000	0	2	1	0	0	0	0	5
Vermont:	1.10.000								
Barre	10,008	9 1	0	1	Ű	0	9	0	9
Massachusetts	- 27,003	U U	v	1	v	U U	3	U U	-
Boston	787,000	33	34	25	2	1	260	8	14
Fall River	131,000	2	3	1	Ō	Ō	1	0	1
Springfield	145,000	5	2	7	0	0	2	40	1
Worcester	193,000	3	4	4	0	0	58	41	7
Rhode Island:				1					
Pawtucket	71,000	0	1	3	0	0	19	29	7
Providence	275,000	0	8	5	0	1	264	0	6
Connecticut:									
Bridgeport	(2)	1	5	3	1	1	5	0	5
Hartford	164,000	7	5	5	0	0	30	31	8
New Haven	182,000	21	3	2	0	0	115	56 I	17

<b></b>	<b>_</b>		Diph	theria	Infl	uenza			
Division, State, and city	Population, July 1, 1926, estimated	Chick- en pox, cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Cases re- ported	Deaths re- ported	Mea- sles, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
MIDDLE ATLANTIC									
New York: Buffalo New York Rochester Syracuse New Jersey:	544, 000 5, 924, 000 321, 000 185, 000	28 211 7 21	8 246 9 5	21 277 2 4	94 1	0 35 0 0	72 1, 992 26 161	49 30 30 9	13 333 6 15
Camden Newark Trenton	131, 000 459, 000 134, 000	0 17 1	5 11 3	8 19 11	0 12 0	0 0 0	45 380 4	4 20 2	2 17 4
Pennsylvania: Philadelphia Pittsburgh Reading	2, 008, 000 637, 000 114, 000	73 37 10	69 17 2	60 16	0 0 0	12 5 2	910 143 10	69 38 0	69 37 1
EAST NORTH CENTRAL									
Ohio: Cincinnati Cleveland Columbus Toledo Indiana:	411, 000 960, 000 285, 000 295, 000	7 47 12 12	7 23 4 3	10 36 1 3	0 34 1 8	3 3 0 7	79 35 90 140	0 101 3 22	12 24 5 5
Fort Wayne Indianapolis South Bend Terre Haute	99, 900 367, 000 81, 700 71, 900	3 27 2 2	2 4 1 0	4 6 0 1	0 0 0 0	0 1 0 1	0 87 1 1	0 112 0 0	4 16 1 11
Chicago Springfield	3, 048, 000 64, 700	77 5	72 1	77 0	46 2	20 0	37 0	31 13	109 1
Detroit Flint Grand Rapids	1, 290, 000 136, 000 156, 000	48 15 1	48 3 4	28 4 2	10 0 0	7 2 3	786 113 13	25 54 8	77 4 8
Wisconsin: Kenosha Milwaukee Racine Superior	52, 700 517, 000 69, 400 1 39, 671	17 71 5 0	1 13 2 0	0 8 1 0	2 43 0 0	0 3 0 0	2 4 1 0	0 39 2 0	1 20 2 3
WEST NORTH CENTRAL									
Minnesota: Duluth Minneapolis St. Paul	113, 000 434, 000 248, 000	6 56 20	1 14 12	0 10 2	18 0 0	4 11 0	1 83 3	2 206 36	3 15 13
Davenport Des Moines Sioux City	<sup>1</sup> 52, 469 146, 000 78, 000	1 0	1 2 1	0 1	0 0		0 0	0 0	<b>-</b>
Waterloo Missouri: Kansas City	36, 900 375, 000	11 13	0 5	0 0	0	1	3 51	4 79	12
St. Joseph St. Louis North Dakota:	78, 400 830, 000	1 12	1 39	0 27	0 2	0 1	0 351	11 15	8
Fargo Grand Forks South Dakota:	<sup>1</sup> 26, 403 <sup>1</sup> 14, 811	1 2	0 0	0	0 0	0	0 0	1	2
A berdeen Sioux Falls Nebraska:	<sup>1</sup> 15, 036 <sup>1</sup> 30, 127	6 0	0 0	0 1	0 0		1 0	0.	
Lincoln Omaha Kansas:	62, 000 216, 000	4 8	12	2 1	0 0	0	0 2	22 1	0 14
Wichita	56, 500 92, 500	22 18	1	0	0	3 0	11	4	3 6

# City reports for weck ended April 21, 1928-Continued

1 Estimated July 1, 1925.

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City reports for week ended April 21, 1928-Continued

<u></u>			Diph	theria	Influ	ienza			
Division, State, and city	Population, July 1, 1926, estimated	Chick- en pox, cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Cases re- ported	Deaths re- ported	Mea- sles, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
SOUTH ATLANTIC									
Delaware: Wilmington	124, 000	1	2	. 1	0	0	9	2	3
Baltimore	805,000	90	25	21	10	1	738	35	41
Cumberland	1 33, 741	2	Ö	1	1	·ō	Õ	Õ	-Õ
District of Columbia: Washington	<sup>1</sup> 12, 035 528, 000	0 12	0 12	1 11	0	0	30 190	0	0 21
Virginia:									
Lynchburg	30, 500	3	1	2	0	0	39	1	4
Richmond	189,000	13	1	1	Ő	ŏ	135	3	3 4
Roanoke	61, 900	7	Ō	Ō	Ō	Ŏ	18	ĭ	î
West Virginia:	50 700	2	1	1	•	•	•		
Wheeling	1 56, 208	10	1	Ó	ŏ	ŏ	6	ŏ	3
North Carolina.	100.000								
Kaleign	<sup>1</sup> 30, 371 37, 700	1	0 0	2	0	1	49	0	1
Winston-Salem	71, 800	10	Ŏ	1	Ő	ò	24	18	Ö
South Carolina:	F4 100		•						
Columbia	. 41 800	1	0	Ű	14	0	0 2	16	2
Greenville	1 27, 311	ő	ĭ	ŏ	ŏ	ŏ	õ	1	2
Georgia:		10						_	
Brunswick	116,809	13	0	4	11	4	10	ő	6 0
Savannah	94, 900	ĭ	ŏ	ŏ	3	ŏ	2	ĭ	š
Florida:	1.60 724							10	
St. Petersburg	1 26, 847	14	0	2	4	0	6	19	2
Tampa	102, 000	3	ĭ	0	0	Ŏ	9	6	2
EAST SOUTH CENTRAL									
Kentucky:		_							
Louisville	58, 500	1	1	1	0	0	o7	0	10
Tennessee:	511,000	1		1	-	1	51		14
Memphis	177,000	18	3	1	0	5	42	26	10
Nashville	137, 000	4	0	1	0	3	41	8	- 3
Birmingham	211.000	13	1	2	50	3	119	7	7
Mobile	66, 800	0	0	1	1	1	1	Ó	1
Montgomery	47,000	5	0	1	3		6	0	
WEST SOUTH CENTRAL		İ		1				i	
Arkansas:	1 31 643	2	,		0				
Little Rock	75,900	3	i	2	ŏ.	0	6	2	5
Louisiana:									
New Orleans	419,000	5	7	16	6	4	1 20	0	17
Oklahoma:			1	۲I	U U	۲	29	•	
Oklahoma City	(2)	6	1	0	19	2	14	4	5
Tuisa Teras	133, 000	14	1	0	0		4	18	•••••
Dallas	203, 000	14	4	6	2	2	4	0	5
Fort Worth	159,000	7	1	5	1	Õ	9	3	4
Houston	49,100	0	2	1	0	0	3 40	0	25
San Antonio	205, 000	ŏ	ĩ	4	ŏ	5	12	ĭ	10
MOUNTAIN					-				
Montana:									-
Billings	17,971	10	0	0.	0	0	0	0	0
Helena	1 12,037	0	ō	ŏ	ŏ	ŏ	õ	ŏ	ŏ
Missoula	1 12, 668	Ō	il	οl	οl	Ō	<u></u>	<u>ŏ</u> l	2

<sup>1</sup> Estimated July 1, 1925.

<sup>2</sup> No estimate made.

•

					I	Diph	the	ria	ĺ	Influ	enza			
Division, State, city	and	Populati July 1 1926, estimat	ion, Cl en ed po	nick- pox, ases re- rted	Ca es ma exp an	ses, iti- ited oct- icy	C po	ases re- orted	C P	Cases re- orted	Deaths re- ported	Mea- sles, cases re- ported	Mumps cases re- ported	Pneu- monia, deaths re- ported
MOUNTAIN-conti	nued													
Idaho: Boise		1 23. 0	42	0	•	0		0		0	0			
Colorado: Denver		285, 0	00	66		10		5			6	74	121	4
Pueblo New Mexico:		43, 9	00	20 12		1		1		0	0	9	0	3
Utah: Salt Lake City		133 0	m	16		3		3			0	20		0
Nevada: Reno		1 12, 6	65	0		0		0		0	0	0	ò	0
PACIFIC	Í			Í							-			
Washington: Seattle		(II)		35				1				09		1
Spokane Tacoma		109, 0 106, 0	00	0 10		2		23		0.	0	0	• 0 70	
Oregon: Portland		282, 3	83	25		2		7		0	0	19	5	7
Los Angeles		( <sup>1</sup> ) 73 A		90		40		28		18	1	36	56	20
San Francisco.		567, 0	00	80		20		6		2	.0	30	60	0
	Scar	let fever		Smal	llpoz					т	vphoid f	ever		
		1		1				Tube	er-			1	Whoop-	
Division, State, and city	Cases esti-	Cases	Cases esti-	Cas	es	Deat	hs	deat	is, hs	Cases esti-	Cases	Deaths	cough, cases	Beaths, all
	expect ancy	-ported	expect ancy	port	be	porte	ed	porte	ed	expect ancy	ported	ported	re- ported	Cuuldo S
NEW ENGLAND						<u></u>	-		-					
Maine:														
Portland New Hampshire:	3	4	0		0		0		1	0	1	0	9	25
Concord Manchester	0 3	0 5	0 0		00		00		3	0	0	0 0	0 0	1 <b>2</b> 33
vermont: Barre Burlington	0	1	0	ĺ	0		0		0	0	0	0	0	2
Massachusetts: Boston	66	47	9		0		0			1		0	37	10 254
Fall River	3 5	8 12	0 0		0		0 0		3	Ĩ	1 0	Ŏ	0	24 35
Worcester Rhode Island:	9	4	0		0		0	i	3	0	0	0	9	76
Providence	8	30	0		0		0	i	3	0 0	0	0 0	$\frac{1}{2}$	24 78
Bridgeport Hartford	17 4	1 6	Ő		0		0	1		0	0	0	11	33 44
New Haven	9	Í	ŏ		Ó		ŏ	2	2	ŏ	Ô	ő	26	73
New York														
Buffalo New York	22 270	30 345	0		0		0	120		0	0	0	23	111
Rochester Syracuse	15 11	10 12	Ŏ		0 0		ŏ	4		1	0	Ô	140 7 22	1, 500 91 73
New Jersey: Camden	7	4	õ		0	1	0	1		Ō	0	· 0	4	24
Trenton	4	29	1		0	1	0	13 0		1 0	1	0 0	24 0	143 30

# City reports for week ended April 21, 1928-Continued

1 Estimated, July 1, 1925.

\* No estimate made.

	Scarle	t fever		Smallp	DX .		Ту	7phoid f	ever	Whoop-	
Division, State, and city	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported	Tuber- culosis, deaths re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported	ing cough, cases re- ported	Deaths, all causes
MIDDLE ATLANTIC			-								
Pennsylvania: Philadelphia Pittsburgh Reading	96 28 3	109 24 24	0 0 0	0 0 0	0 0 0	43 9 0	3 1 0	2 0 0	1 0 0	91 34 2	609 213 24
EAST NORTH CENTRAL											
Ohio: Cincinnati Cleveland Columbus Toledo Indiana:	22 36 9 14	29 23 13 3	2 0 1 3	0 0 0 0	0 0 0 0	13 - 16 6 2	1 0 0 1	0 0 1 0	. 0 . 0 0	7 55 1 17	149 214 83 71
Fort Wayne Indianapolis South Bend Terre Haute Illinois	5 9 4 2	0 7 0 0	3 9 0 0	5 9 1 4	0 0 0 0	· 9 0 2	0 0 0 0	0 1 0 0	0 0 0 0	0 7 1 1	31 94 12 29
Chicago Springfield	115 2	120 17	2 1	1 13	0 0	67 0	2 1	1 0	0 0	102 1	854 17
Detroit Flint	87 6 7	128 19 3	2 1 2	2 11 0	0 0 0	24 0 1	2 0 0	1 0 0	0 0 0	87 4 3	373 27 50
Wisconsin: Kenosha Milwaukee Racine	2 27 4	2 40 1	1 2 1	1 1 0	0 0 0	0 6 0	0 1 1	0 1 0	0 1 0	0 14 5	4 148 16
Superior West North CENTRAL	2	13	1	0	0	1	0	0	0	0	. 10
Minnesota: Duluth Minneapolis St. Paul	7 48 27	6 39 19	0 6 3	0 0 0	0 0 0	4 4 3	0 1 1	0 0 0	0 0 0	2 7 27	27 132 71
Davenport Des Moines Sioux City Waterloo	2 6 2 1	4 9 2	4 1 2 0	0 10 0			0 0 0 0	0 0 0		0 0 0	
Missouri: Kansas City St. Joseph St. Louis	12 3 36	37 0 24	2 0 4	3 1 3	0 0 0	11 4 15	0 0 1	0 0 3	0 0 0	14 0 32	113 31 234
Fargo	2 0	6 2	0	0	0	1	0	0	1	6 0	9
South Dakota: Aberdeen Sioux Falls	2 1	2 1	0	0			0	0		1 0	·····
Nebraska: Lincoln Omaha	0 2	3	0	3 4	0	02	0	0	0	42	14 63
Kansas: Topeka Wichita	3	5 2	1	12 8	0	20	0	0	0	10 8	19 25
SOUTH ATLANTIC											
Delaware: Wilmington	5	1	0	0	o	0	0	1	o	3	28
Baltimore Cumberland Frederick District of Colum-	34 1 0	30 0 0	0 0 0	0 0 0	0 0 0	20 0 0	2 0 0	2 0 0	0 0 0	61 0 0	258 14 5
Washington	23	30	1	0	ol	14	1	1	ol	6	154

# City reports for week ended April 21, 1928-Continued

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·											
	Scarle	t fever		Smallp	0X		Тз	phoid f	ever	Whoon	
Division, State, and city	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported	Tuber- culosis, deaths re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported	ing cough, cases re- ported	Deaths, all causes
SOUTH ATLANTIC											
Virginia: Lynchburg Norfolk Richmond Roanoke West Virginia:	1 3 2 1	0 7 5 0	0 1 1 • 0	0 1 0 0	0 0 0 0	1 0 10 0	0 0 0 0	0 0 0 0	0 0 0 0	11 0 0 0	18 0 63 14
Charleston Wheeling	.0 1	2 3	1 0	0 0	0 0	3 0	0 1	0 0	0	0 0	17 15
North Carolina: Raleigh Wilmington Winston-Salem.	0 . 0 . 1	0 1 1	0 0 5	0 - 1 0	0 0 0	1 0 1	0 0 0	0 0 0	0 0 0	7 5 0	18 19 19
South Carolina: Charleston Columbia Greenville	0 0 1	0 1 2	1 1 1	1 0 0	0 0 0	2 1 2	0 0 0	0 0 0	0 0 0	1 2 1	21 4 13
Georgia: Atlanta Brunswick Savannah	4 0 0	14 0 0	5 0 1	2 0 2	0 0 0	4 0 2	0 1 1	1 0 0	0 0 0	1 0 0	83 4 19
Florida: Miami St. Petersburg	1	2	2	0	0	0	1	1	0	3	26 12
Tampa EAST SOUTH CENTRAL	i	0	i	0	ŏ	5	Ŏ	0	ŏ	0	33
Kentucky: Covington Louisville	2	5 24	0	1	0	4	1	0	0	1	36
Tennessee: Memphis	5	6	3	0	0	8	0	0	0	1	91
Alabama: Birmingham	1	2	7	1	0	8	1	1 2	0	2	75 69
Mobile Montgomery	0	3 0	1	10.	0	2	0 1	0 0 -	0	0	27
WEST SOUTH CEN- TRAL											
Arkansas: Fort Smith Little Rock	1 0	0 14	0 1	0 0	0	5	0 0	0 0	0	0 -	ō
New Orleans Shreveport	5 1	<b>4</b> 0	1	0	0	11 2	2 0	3 0	1	4 0	162 34
Oklahoma City Tulsa	1 2	8 13	3 1	12 7	0	2	0	0.	0	04	34
Texas: Dallas Fort Worth	2	19 13	3	1	0	4	1	0	0	17	51
Galveston Houston San Antonio	1 0 0	0 3 1	0 1 0	0 0 1	Ŭ O O	1 3 13	1 0 0	1 0 1	1 0 0	0 0 0	23 71 80
MOUNTAIN											
Montana: Billings Great Falls Helena Missoula	1 2 0 1	0 0 4 2	0 1 0 1	0 6 1	0 0 0	0000	0000	00.00	0 0 0	3 0 0	5 7 10
Idaho: Boise	2	2	1	0	0	0	1	0	0	0	5
Denver Pueblo	10 2	9. 5	1	1	0	6	0	0	0	39 0	<b>8</b> 3
New Mexico: Albuquerque	0	2	0	0	0	8	0	1	0	0	18

# City reports for week ended April 21, 1928—Continued

	Scarle	t fever	i	Smallp	)X		Ту	phoid f	ever	Whoop	
Division, State, and city	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported	Tuber- culosis, deaths re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported	ing cough, cases re- ported	Deaths, all causes
MOUNTAIN-con.											
Utah: Salt Lake City. Nevada	1	2	1	10	0	1	1	0	0	9	39
Reno	0	0	0	1	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	2	27	2					Ň		4	
Тосото	4		0	20			Ň	Ň		Ŷ	
Oregon:	- 4	v	7	-		1	v	v	v	1	- 20
Portland	8	2	6	34	0	1	0	0	0	0	69
California:			-		-	_	-	-			
Los Angeles	22	28	5	0	0	26	1	1	0	45	270
Sacramento	1	1	0	0	0	3	1	0	0	1	28
San Francisco.	16	21	2	0	Ó	12	1	0	1	21	144

# City reports for week ended April 21, 1928-Continued

									1
-	Me co men	ningo- occus ningitis	Let	hargic phalitis	Pe	llagra	Polion tile	yelitis paraly	(inf: n- /sis)
Division, State, and city	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
NEW ENGLAND									
Massachusetts: Boston	0	0	2	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York: New York Rochester	35 0	18 0	5 1	3 0	0 0	0 0	1 0	0	1 0
New Jersey: Newark	1	2	0	0	0	0	0	0	0
Pennsylvania: Philadelphia Pittsburgh	2 2	1 2	0 0	0 1	0 0	0 0	0 0	0 0	0 0
EAST NORTH CENTRAL									
Ohio: Cleveland Columbus	4 0	1 0	0 1	0 1	0	0	0 0	0 0	0
Indiana: Indianapolis	0	1	0	0	0	0	0	0	0
Illinois:	0	1		0		0	0	0	0
Michigan:	9	3	0	1			0	1	0
Wisconsin:		2		1	0		0	1	0
Superior	42	2 0	0	Ő	ŏ	ő	Ő	ŏ	0
WEST NORTH CENTRAL									
Minnesota:						<u>_</u>		0	n
Missouri:	1								
Kansas Ulty	3	0	ő	0	Ő	0	0	0	· 0

	Me co mer	eningo- occus ningitis	Let	hargic phalitis	Pe	ellagra	Polion tile	nyelitis paral;	s (infan- ysis)
Division, State, and city	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
SOUTH ATLANTIC									
Maryland: Baltimore North Carolina:	1	0	0	1	0	0	0	0	0
Raleigh Wilmington South Carolina:	000	00	0	00	0	1 1	0 0	000	0
Charleston Greenville Georgia:	0	0	0	0	1 0	1	0 0	0	0 0
Savannah Florida:	0	0	0	0	1	1	0	0	0
Miami Tampa	0 0	0	0 0	0 0	2 0	0 1	0 0	0 0	0 0
EAST SOUTH CENTRAL									
Tennessee: Nashville	0	0	1	0	1	1	0	0	0
Birmingham Mobile Montgomery	2 0 0	2 0 0	0 0 0	0 1 0	0 2 2	0 0 0	0 0 0	0 0 0	0 0 0
WEST SOUTH CENTRAL									
Louisiana: New Orleans Oklahoma:	1	0	0	0	0	0	0	0	0
Oklahoma City Texas:	0	1	0	0	1	0	0	0	0
Houston	ő	1	0	1	0	Ő	0	0	0 1
MOUNTAIN								.	
Colorado: Denver Utah:	2	0	0	1	0	0	0	0	0
Washington: Seattle	1	. O	0	0	0	0	U 0	0	0
Tacoma Oregon: Portland:	0	0	0	0	0	0	0	1	0
California: Los Angeles. Sacramento	3 0	1	1 0	1 0	0 0	0	1 0	0	0 0

#### City reports for week ended April 21, 1928-Continued

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended April 21, 1928, compared with those for a like period ended April 23, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1927 and 1928, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,050,000 in 1927 and 31,657,000 in 1928. The 95 cities reporting deaths had nearly 30,370,000 estimated population in 1927 and nearly 30,961,000 in 1928. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, March 18 to April 21, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927 <sup>1</sup>

DIPHTHERIA	CASE	RATES
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		Week ended-												
	Mar. 26, 1927	Mar. 24, 1928	Apr. 2, 1927	Mar. 31, 1928	Apr. 9, 1927	Apr. 7, 1928	Apr. 16, 1927	Apr. 14, 1928	Apr. 23, 1927	Apr. 21, 1928				
101 cities	178	158	190	139	200	132	174	144	179	<b>*</b> 137				
New England	130	124	137	110	181	126	105	168	135	131				
Middle Atlantic	226	222	263	181	269	188	271	209	270	204				
East North Central	178	148	159	146	169	121	135	116	131	116				
West North Central	121	132	158	84	170	101	109	101	141	² 82				
South Atlantic	146	112	157	121	117	88	141	82	135	82				
East South Central	41	60	61	85	66	25	86	40	30	40				
West South Central	174	116	178	108	335	132	141	160	124	124				
Mountain	81	80	108	115	170	44	108	133	188	80				
Pacific	193	105	170	74	125	77	115	74	157	102				

#### MEASLES CASE RATES

	1	1	11	1	11		1		1	1
101 cities	. 943	1,326	837	1, 388	867	1, 277	766	1, 340	788	² 1, 365
New England	. 198	1,536	205	2,014	270	1,874	223	1,726	295	1,743
Middle Atlantic	114	1,393	127	1,491	159	1,504	172	1,739	145	1,824
West North Central	1, 100	725	1.821	748	1.300	762	1.314	861	1. 552	2 1.016
South Atlantic	972	2,893	1,091	2,905	936	2,285	1, 311	2, 115	1, 589	2,358
East South Central	436	1,426	284	1,696	608	958	396	1, 117	517	1, 536
West South Central	1,754	1,120	935	836	2,114	436	1,005	428	1,249	380
Mountain	2 162	504 907	3,443	752	2,788	708	2,080	743	1,793	761
racine	3, 103	001	2, 101	000	5,051	11/	2,201	024	2, 100	385

#### SCARLET FEVER CASE RATES

101 cities	423	309	440	303	394	273	391	226	362	2 265
New England Middle Atlantic East North Central West North Central South Atlantic	423 479 580 347 400 179	411 374 306 292 224	530 612 329 467 197	303 405 398 266 257 221	394 367 594 272 433 177	331 366 252 263 179	423 581 285 396 150	220 301 273 194 277 154	362 346 528 298 342 161	264 287 272 297 170
East South Central West South Central Mountain Pacific	162 58 1, 130 360	234 124 177 202	172 54 1, 210 340	204 144 186 207	177 99 941 243	100 148 239 133	218 50 950 243	234 128 239 123	167 41 932 209	200 164 212 151

#### SMALLPOX CASE RATES

101 cities	30	25	28	25	26	18	24	20	33	² 22
New England Middle Atlantic East North Central West North Central South Atlantic East South Central West South Central Mountain Bosific	0 0 29 69 41 106 74 18 99	0 0 18 125 23 25 36 62 61	2 0 33 61 122 62 9 68	0 0 24 64 68 30 36 142 23	0 0 37 42 25 86 103 27 55	0 0 24 84 14 10 4 106	0 0 32 55 27 96 87 27 28	0 0 24 49 11 35 16 150 74	0 0 29 40 65 162 95 54 97	0 0 31 262 12 20 8 168 59

<sup>1</sup> The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1927 and 1928, respectively. <sup>2</sup> Sioux City, Iowa, not included.

#### Summary of weekly reports from cities, March 18 to April 21, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

#### TYPHOID FEVER CASE RATES

		Week ended-										
	Mar. 26, 1927	Mar. 24, 1928	Apr. 2, 1927	Mar. 31, 1928	Apr. 9, 1927	Apr. 7, 1928	Apr. 16, 1927	Apr. 14, 1928	Apr. 23, 1927	Apr. 21, 1928		
101 citics	.8	4	8	5	8	4	8	5	7	*6		
New England	5	9	12	5	7	2	9	9	0	7		
Middle Atlantic	7	4	6	4	6	1	5	5	7	6		
East North Central	4	3	1	2	5	3	1		3	3		
West North Central	4	11	10	2		10	12	8	4	46		
Fast South Control	41	11	20	10	25	12	10	20	20	15		
West South Central	20	Ř	25	12	37	16	17	20	12	20		
Mountain	Ĩŏ	ŏ	ĩ	10	ő	10	9	-ñ	27	<b>1</b> 0		
Pacific	1Ŏ	5	24	3 3	8	Š	18	3 3	10	3 3		

#### INFLUENZA DEATH RATES

95 cities	27	32	22	29	23	34	21	30	18	28
New England	7	9	12	11	7	16	16	9	12	7
Middle Atlantic	26	22	21	29	26	31	21	27	20	26
East North Central	16	35	15	24	9	40	11	27	11	28
West North Central	14	16	4	18	17	16	12	24	21	41
South Atlantic	65	39	38	21	40	19	38	30	22	16
East South Central	96	89	106	78	74	73	90	84	58	68
West South Central	25	98	30	86	51	107	42	90	30	45
Mountain	27	133	27	53	36	80	18	53	0	53
Pacific	28	7	24	14	17	7	14	14	10	14

#### PNEUMONIA DEATH RATES

95 cities	167	213	163	222	162	215	153	207	159	108
<b>00 000</b> 0000000000000000000000000000000										
New England	156	182	156	225	140	179	156	177	151	166
Middle Atlantic	198	245	186	264	198	244	175	243	199	242
East North Central	141	211	147	207	131	241	141	199	135	192
West North-Central	101	118	93	130	137	122	128	175	124	155
South Atlantic	218	240	225	230	150	179	184	209	179	181
East South Central	197	240	133	288	218	397	138	183	160	235
West South Central	136	275	161	242	140	185	76	238	81	197
Mountain	170	168	161	106	242	97	152	186	161	106
Pacific	110	101	128	118	117	105	117	88	97	81
			1	1 1			1			

<sup>2</sup> Sioux City, Iowa, not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1927 and 1928, respectively

Group of cities	Number of citics	Number of cities	Aggregate r cities repo	opulation of rting cases	Aggregate population of cities reporting deaths		
· · · · · · · · · · · · · · · · · · ·	cases	deaths	1927	1928	1927	1928	
Total	101	95	31, 050, 300	31, 657, 000	30, 369, 500	30, 960, 700	
New England. Middle Atlantic. East North Central. West North Central. South Atlantic. East South Central. West South Central. Mountain. Pacific.	12 10 16 12 21 7 8 9 6	12 10 16 10 21 6 7 9 4	2, 242, 700 10, 594, 700 7, 820, 700 2, 634, 500 2, 890, 700 1, 028, 300 1, 250, 700 581, 600 1, 996, 400	2, 274, 400 10, 732, 400 7, 991, 400 2, 683, 500 2, 981, 900 1, 048, 300 1, 307, 600 591, 100 2, 046, 400	2, 242, 700 10, 594, 700 7, 820, 700 2, 518, 500 2, 890, 700 980, 700 1, 227, 800 581, 600 1, 512, 100	2, 274, 400 10, 732, 400 7, 991, 400 2, 566, 400 2, 981, 900 1, 000, 100 1, 274, 100 591, 100 1, 548, 900	

# FOREIGN AND INSULAR

#### THE FAR EAST

Report for the week ended April 7, 1928.—The following report for the week ended April 7, 1928, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE	SMALLPOX
Egypt.—Suez. Aden Protectorate.—Aden. India.—Bassein, Bombay, Calcutta, Rangoon. CHOLERA India.—Bassein, Calcutta, Madras, Rangoon, Tuti- corin. French India.—Pondicherry. Siam.—Bangkok. French Indo-China.—Saigon.	India.—Bombay, Calcutta, Madras, Moulmein, Rangoon. French India.—Pondicherry. China.—Shanghai, Hong Kong. Japan.—Shimonoseki. Kwantung.—Dairen.

Returns for the week ended April 7 were not received from the following ports:

Ceylon.—Colombo. China.—Canton. Dutch East Indics.—Banjermasin, Belawan-Deli, Menado, Samarinda. Iraq.—Basta. Union of Societ Socialist Republics.—Vladivostok.

#### ANGOLA

Communicable diseases—December, 1927—January, 1928.—During December, 1927, and January, 1928, communicable diseases were reported in Angola as follows:

		Decem	ber, 1927			January, 1928					
Disease	Coast district	Land frontier	Interior	Total	Coast district	Land frontier	Interior	Total			
Ancvlostomiasis	5	5	7	17	10	17		27			
Beriberi	6	4		10	2			2			
Bilharzia	5		6	11	2	5	31	38			
Chicken pox 1	19		4	23	13	1	1	15			
Dysentery	36	20	12	68	27	21	9	57			
Ervsipelas	2			2							
Hemoglobin fever	11	2	9	22	10	2	5	17			
Influenza	58	189	98	345	44	353	69	466			
Leprosy	i 4	1		5							
Malaria	353	167	165	685	359	212	104	675			
Measles	116		4	120	60	6	4	70			
Meningitis			14	14		1		1			
Mumps	4	1		-5	2	_		$\overline{2}$			
Plague	3	_		3	_						
Puerperal senticemia	ĩ			ī	1	1		2			
Pneumonia	11	3	15	29	25	12	7	44			
Relansing fever		4		4		14		14			
Ringworm		-		-		4		4			
Scables	9	75		84	6	50		56			
Smallnov	7			7	1Ŏ			10			
Tetanus	i			i	3			3			
Tuberculosis	39	3	3	45	27	4	3	. 34			
Typhoid fever	1	2	ĩ	4	2	-	-	2			
Trypanosomiasis	57	27	38	122	74	70	7	151			
Vanereal diseases	152	216	16	384	178	237	27	442			
Whooning cough	7	-10	10	7			2	2			
Yaws	89	33	69	19i	82	19	5	106			

<sup>1</sup> Including alastrim.

#### ARABIA

Aden—Plague.—Under date of April 1, 1928, continued prevalence of plague was reported at Aden, with a total of 1,170 cases and 830 deaths from the outbreak of the epidemic. It was stated that the epidemic had spread to a point 25 miles north of Aden.

#### CANADA

Fort William, Ontario—Vital statistics and communicable diseases, 1927.—The annual report of the department of health of the city of Fort William, Ontario, Canada, for the year ended October 31, 1927, gives the following statistics:

Population (estimated)	23, 544	Death rate per 1,000 births	54.63
Births	604	Deaths (all causes)	1 196
Stillbirths	25	Death rate per 1,000 population	18.32
Deaths under 1 year	33		
t Including nonnesidente			

<sup>1</sup> Including nonresidents.

Communicable diseases—Cases and deaths at Fort William, Ontario, Canada, year ended October 31, 1927

Disease	Cases	Deaths	Disease	Cases	Deaths
Broncho-pneumonia Chicken pox Diphtheria Erysipelas Gonorrhea Influenza Measles Mumps	8 66 27 3 51 3 32 5	6 2  1 1	Pneumonia (lobar) Poliomyelitis. Scarlet fever. Smallpox. Syphilis Tuberculosis. Typhoid fever Whooping cough	1 32 0 22 24 10 69	15  12 

Quebec Province—Communicable diseases—Week ended April 21, 1928.—The Bureau of Health of the Province of Quebec reports cases of communicable diseases for the week ended April 21, 1928, as follows:

Disease	Cases	Disease	Cases
Chicken pox	67	Scarlet fever	95
Diphtheria	36		25
German measles	12		51
Influenza.	6		15
Measles	302		12

#### ITALY

Messina—Vital statistics—Year 1927.—The following table gives vital statistics for the city of Messina, Italy, for the year 1927:

Population	197, 866	Deaths from—Continued.	
Births	4,843	Influenza	33
Still-born	125	Measles	1
Deaths	3, 049	Smallpox	1
Deaths from—		Tuberculosis	102
Cerebrospinal meningitis	14	Typhoid fever	27
Diphtheria	19		

#### MALTA

Communicable diseases—March, 1928.—During the month of March, 1928, communicable diseases were reported in the Island of Malta, as follows:

Disease	Cases	Discase	Cases
Bronchopneumonia Cerebrospinal meningitis Chicken pox Diphtheria Erysipelas Influenza Malta (undulant) fever Malaria <sup>1</sup>	19 1 .36 4 6 28 46 1	Pneumonia Puerperal fever Scarjet fever Trachoma. Tuberculosis. Typhoid fever. Whooping cough	8 3 6 41 28 20 6

<sup>1</sup> Contracted abroad.

Population, civil, estimated: 228,575.

#### NIGERIA

Lagos—Plague—Plague-infected rats—February 26-March 3, 1928.— During the week ended March 3, 1928, two cases of plague with two deaths were reported at the port of Lagos, Nigeria. During the same period, of 8,246 rats taken in Lagos, 1,186 were examined, 51 per cent of these being found infected.

Inland localities—Smallpox.—During the same period, 103 cases of smallpox were reported, with 7 deaths, in 12 inland localities of the northern provinces of Nigeria, with high mortality reported at Mokwa. In the southern provinces 7 cases were reported from 3 localities.

Other transmissible diseases.—Ten cases of relapsing fever and 72 cases of trypanosomiasis were reported in the northern provinces of Nigeria.

#### **PORTO RICO**

Smallpox—Correction.—The unofficial report of smallpox in the vicinity of Fajardo, Porto Rico, which was published in the Public Health Reports dated March 23, 1928, page 723, was erroneous. The Commissioner of Health of Porto Rico states that smallpox has not been reported there for several years.

#### UNION OF SOUTH AFRICA

Orange Free State—Flague—Weeks ended March 10 and 17, 1928.— During the two weeks ended March 10 and 17, 1928, three fatal cases of plague were reported on Allemanskamp farm, Theunissen Area of the Winburg District, Orange Free State. A further suspect case, in a native, was reported found on the Theunissen-Theron Road. The case ended fatally.

Smallpox.—A fresh outbreak of smallpox was reported during the week ended March 10, 1928, in the State of Natal.

Typhus fever.—During the week ended March 10, 1928, fresh outbreaks of typhus fever were reported in the Orange Free State, occurring in Harrismith district, and two sporadic cases in Europeans, one of which was imported, in Durban, Natal.

During the week ended March 17, 1928, fresh outbreaks were reported in the Cape Province, occurring in four districts; in Natal, at Port Shepstone; and in the Transvaal, in Potchefstroom district, on a farm.

Month of February, 1928—Typhus fever.—During the month of February, 1928, 65 cases of typhus with 9 deaths were reported in the native population of the Union of South Africa. The distribution of the occurrence was as follows: Cape Province—cases 36, deaths 6; Natal—cases 6, deaths 1; Orange Free State—cases 23, deaths 2. There were reported two cases in Europeans occurring in the State of Natal.

#### VIRGIN' ISLANDS

Communicable diseases—March, 1928.—During the month of March, 1928, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks
St. Thomas and St. John: Chancroid Gonorrhea Malaria. Pellagra. Syphilis. Tuberculosis Whooping cough. St. Croix: Chancroid Gonorrhea. Syphilis. Tuberculosis	1 5 3 1 11 1 5 1 10 5 2	2 from St. John. Malignant tertian. Chronic pulmonary. Secondary. Chronic pulmonary.

#### YUGOSLAVIA

Communicable diseases—March, 1928.—During the month of March, 1928, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax Cerebrospinal meningitis. Diphtheria. Dysentery Lethargic encephalitis. Leprosy. Measles.	27 11 224 16 1 3, 932	2 3 51 1 78	Poliomyelitis Scarlet fever Rabies. Tetanus Typhoid fever. Typhus fever.	1 1, 597 1 18 150 21	276 1 8 10 1

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service. American consuls, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

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[C, indicates cases; D, deaths; P, present]

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Place	July 31- Aug. 27, 1927	Aug. 28- Sept. 24, 1927	Sept. 25- Oct. 22, 1927	Oct. 23- Nov. 19, 1927	Nov. 20- Dec. 17, 1927	Dec. 18, 1927- Jan.	Janu 192	ary,		Februa	y, 1928			Mar	ch, 19	*		Api 192	Ŧ.ss
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Madras Presidency	2,660	3,056	2,050	3, 073	3, 702	1,864	1, 163	1, 301	1, 305	912 912	8 <sup>30</sup>	839	621	-		N .	-	1	4
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1181

<b>FEVER</b> —Continued
YELLOW
AND
FEVER,
TYPHUS
SMALLPOX,
PLAGUE,
CHOLERA,

CHOLERA-Continued

[C, indicates cases; D, deaths; P, present]

Week ended-	Oct.         Nov.         Dec.           23-         1927-         1927-           Nov.         Dec.         1927-           13, 1927         1, 3005         1, 3005	xx, 1200         21         28         4         11         18         25         3         10         17         24         31	6 6 1 1 1 1 1 1 1 1 1 1 1 1 1	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
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	· Place		India (French): Chandernagor	Philippine Islands: Manila	On vessel: S.S. Adrastus: At Yokohama, Japan. C S.S. Hawaii Maru at Singapore from Saigon, French Indo-China C S.S. Tabaristan: At Basra, Iraq C

<sup>1</sup> From Vily 19 to Dec. 26, 1927, 1,479 cases of cholera were reported in Iraq, with 1,063 deaths, as follows: Amarah Liwa, 261 cases, 205 deaths; Baghdad Liwa, 80 cases, 60 deaths; Basra Liwa, 421 cases, 330 deaths; Diwaniah Liwa, 122 cases, 72 deaths; Diyalah Liwa, 1 case, 1 death; Dulaim Liwa, 100 cases, 69 deaths; Hillah Liwa, 105 cases, 71 deaths; Kerbalah Liwa, 79 cases, 60 deaths; Kut Liwa, 66 cases, 44 deaths; Muntafiq Liwa, 241 cases, 151 deaths.

Ē	July-	October.	Not	ember, 1	927	Dec	ember, l	927	Jar	uary, 19	83	Э́Н	bruary,	928		Marc	1, 1928	
LIACO	ber, 1927	1927	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-29	1-10	=	នុ	21-31
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Place			28- 28- Sept. 24 1927	25- 25- Oct. 1 201927115	23- 23- Vov. D 1927 17	00. 0- 192 192 192 192	gr- Jani	1928, 1928		Februar	y, 1928		Ň	larch, 19	8		A pril,	1928
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May 11, 1928

FEVER-Continued	
YELLOW	
AND	
FEVER,	-
TYPHUS	
SMALLPOX,	
PLAGUE,	
CHOLERA,	

PLAGUE-Continued

[C indicates cases; D, deaths; P, present]

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<sup>1</sup> See monthly table below.										do Train	0				-	1	ŝ

<sup>2</sup> During January, 1928, 5 cases of plague were reported in interior of Senegal; 17 cases with 13 deaths during last 2 weeks in February; 8 cases and 4 deaths, Mar. 11 to 20, 1928.

May 11, 1928

1185

FEVER-Continued
ND YELLOW
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E, SMALLP
A, PLAGUI
CHOLER

# PLAGUE-Continued

[C indicates cases; D, deaths; P, present]

Aug.         Sept.         Oct.         Nov.         Dec.         Week ended-           25-         25-         20-         18,         20-         1927-         January, 1928         February, 1928         March, 1928         April, 1928	27, 100     20, 10     14, 1928     21     28     4     11     18     25     3     10     17     24     31     7     14     2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							- 1 acata and tua. C r r 1 0. Argentina. C r
Aug. Sept. Oct. Nov. 28- 25- 23- 20- 26 Oct. Nov. Dec. 2010 Nov. Dec.		13 9 1 2 3 1 3 3		1		× ∞ ∞		14 1	
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<sup>1</sup> See monthly table below. <sup>3</sup> 8 cases of plague with 6 deaths were reported in Bengardane region, Tunisia, Mar. 17 to 27, 1928.

April, 1928	322
March, 1928	
Feb- ruary, 1928	£41 [2] [2] [2] [2] [2] [2] [2] [2] [2] [2]
Janu- ary, 1928	19 155 129 16
Octo- ber- becem- ber, 1927	88.88 8488 857 858 858 858 858 858 858 858 858 8
July- Sep- tem- ber, 1927	38222-881-1212
Place	Madagascar-Continued.       C         Moramanga Province.       C         Tananarive Province.       C         Mauritius.       C         Mauritius.       C         Nigeria.       C         Peru.       C         Callao.       C         Lima.       C         Syria: Befrut.       C
April, 1928	
March, 1928	νc 20
Feb- ruary, 1928	342 317 317 317 108 108 108 108 108
Janu- ary, 1928	266 268 268 268 268 268 268 268 268 268
Octo- ber- Decem- ber, 1927	2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
July-Sep- tem- ber, 1927	8 9 <b>4 2 8 8 2 4</b>
Pisce	lgeria: Algiers.
<b>9</b> 8241	т°285

# **XO411VWS**

	July	Aug.	Sept.	Oet.	Nov.	Dec.						Veek en	ded							
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Arabia: AdenC				1	m	-					-									:
Para. C	- 0 4	01 6																		

<sup>1</sup> See monthly table below.

1187

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FEVERContinued
ID YELLOW
FEVER, AN
TYPHUS.
SMALLPOX
PLAGUE,
CHOLERA,

# SMALLPOX-Continued

[C indicates cases; D, deaths; P, present]

Place Titish East, Africa: 1 Trangaryki, Tangya-Monbasa. Tangaryviki Southern Rhodesia. Southern Rhodesia. Southern Rhodesia. D D D D D D D D D D D D D D D D D D D	July 31- 31- 27, 11927 55 55 13 13 55 55 117 117 117 117 117	Aug. 284 289 t. 292 223 294 t. 294 t.	S50 1 255 255 255 255 255 255 255 255 255 2	Oct. 23-1. 23-1. 197.	N 200 V 200 V 117. 117. 117. 11027 252 P 252 P 252 V 253 V 253 V 253 V 253 V 253 V 253 V 254 V 257 V 2	Dec. 1987. 1987. 1987. 1987. 1978. 88 88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Januaa 21 22 52 52 3 3 3 3 3 3	Y, 1928           28           28           28           28           28           28           28           29           31           11           11           11           15           5           5	<b>4</b> 1 882 1 1 1 1 8 8 7 1 1 1	Februar 33 51 11 11 12 8 8 6 6 6 6	7, 1928           18           79           11           21           21           25.5           21           21           21           21           22           23.5	Week e           25           25           32           32           32           32           32           33           32           33           32           33           32           32           33           32           33           32           33           32           33           32           33           32           33           32           33           32           33           32           33           33           34           35           35           36           37           37           38           37           38           37           38           38           39           39           31           32           33           37           38	2464 25 2 2 - 3 32 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Marc 18 4 1 7 7 3 3 3 3 4 4 1 4 1 7 7 1 8 3 9 7 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9	<sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup>	**************************************		April 1 1 5 5	, <u>τ</u> το του το το το το το το το το το το το το το
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May 11, 1928

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<sup>1</sup> See 10-day and monthly tables below.

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FEVER-Continued
YELLOW
AND
FEVER,
TYPHUS
SMALLPOX,
PLAGUE,
CHOLERA,

SMALLPOX-Continued [C indicates cases; D, deaths; P, present]

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-	July	Aug.	Sept	0	Ž	- <u>A</u>						-	Veek en	ded-							1
Place	31- Aug. 27,	28- Sept. 24,	ж <u>е</u> к	<sup>8</sup> 2 <sup>6</sup>	8 <u>6</u> 2	-ສຸດ- ຼຸ່.	-12-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	anuary	, 1928	-	ebruar	y, 1928			Marol	D, 192	<b>"</b>		April	1, 192	
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<sup>1</sup> See 10-day and monthly tables below. <sup>2</sup> The report of the presence of smallpox in the vicinity of Fajardo, Porto Rico, which has appeared in the Public Health Reports was erroneous. No smallpox has been reported in Porto Rico for several years.

<b>FEVER</b> —Continued
YELLOW
AND
FEVER,
TYPHUS
SMALLPOX,
PLAGUE,
CHOLERA,

SMALLPOX-Continued

[C, indicates cases; D, death; P, present]

	July	Aug.	Sept.	Oct.	Nov.	Dec.		-			M	eek end						
	Aug. 27, 27,	Sept.	45 <b>8</b> 8	Nov. 1927	26 17, Dec	18, 1927- Jan. 14,	January	, 1928	<b>H</b>	ebruar	y, 1928			March	1, 19 <b>2</b> 8		- Pi	pril, 16
						1928	21	8	4	п	18	25	3	10	17	3		
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<sup>1</sup> See 10-day and monthly tables below.

80 ~ March, 1928 --------------------100 100 100 100 100 100 60 Feb-1928 4 21-31 ------..... -March, 1928 11-20 7 ~ -Janu-8ry, 1928 358-48 ø 8 12 12 ;;;; 401 1-10 -----15 15 81 1921 - De 8 ...... 21-29 23880 -11 ដន 1927. 1927. February, 1928 11-20 31 ສ 2234 Octo-ber. 1927 25225223 i \$⊒ 12 -...... 1-10 July-Sep-tem-ber, 1927 38882 88 85 21-31 18 15 DACOARCAR CO 00 Spain: Madrid..... U. S. S. R.: Railways, etc..... Other territories in Europe Transcaucesus, Siberia, and Portugal..... Central Asia January, 1928 Persia 11-20 ie \$ -11 Place -1-10 8 ..... 21-31 --0 December, 1927 8 11-20 ..... . ..... 10 -----March, 1928 -----\*\*\*\*\*\* ....... ..... -----161 1-10 Novem-ber, 1927 88 13 Feb-ruary, 1928 ...... ;;;;; -----; 12 × × 0 i⊒∾ 22 Janu-ary, 1928 10 -----...... ..... ; ..... 2 **\***201 ø Septem- October, ber, 1927 1927 Sg = % ..... -..... ~ -----44 ivo Der Der 1927 5 5°23 -----C3 7 No-ber, 1927 August, 1027 3 890 m 61 Octo-ber. 1927 103 4:01-01 ----376 14 ----July, 1927 5-1 1-21 21 34 10 10 10 10 i July-Sep-tem-ber, 1927 51 000 000 CACCCCCCCAC 000 COA Beirut Indo-China (French) Aleppo. Damascus ..... ....... uanza-Sul Zaire Brazil: Porto Alegre. British East Africa: Zanzibar. .oanda..... Chosen ..... Gold Coast Greece Ecuador: Guayaquil..... -------Algeria Angola..... Place **Place** Oran France Syria:

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May 11, 1928
FEVER-Continued
YELLOW
AND
FEVER,
TYPHUS
SMALLPOX,
PLAGUE,
CHOLERA,

## TYPHUS FEVER

[C, indicates cases; D, death; P, present]

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Place	Jury 31- 27, 27,	Sept.	in the second	202 Nov.	26. 26.	18, 1927- Jan. 14,	Janus 192		Å	bruary	, 1928			Mar	rch, 19;	8		A pril,	1928
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Oran . Č						4		3			73	-	9	-	-		5		
Austria: Vienna. Bulgaria: <sup>1</sup> Sofia.			-11	¢-	1	9	-		-						ę		~	14	
Chile: Antofagasta			-		2	1													
China: <sup>1</sup> Manchuria— Dairen	N			N															
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Czechoslovakia <sup>1</sup> Egypt	01 m		<u>6</u>	4	4 4	<b>∞</b> ₹	6	20		<b>,</b>		<u>6</u>	~~~~	-			-		6
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		19	21		Ň	vember,	1927	Å	cember,	1927		January	, 1928		Febr	18ry, 19	8
Place	July	Au- gust	Sep- tember	Octo- ber	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-2	0 21-	31	-10	11-30	21-29
Algeria. Bulgaria. Morocco.	67 13 2 12 148	33 24 76	10 6 72 72	1-22-1	ŝ	14	2	c	9	262						61 61 61 61	10 CN
1See 10-day and monthly table below.																	

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CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER-Continued

TYPHUS FEVER-Continued

[C indicates cases; D, deaths; P, present]

Febru - ary, 1928	137
Janu- ary, 1928	86 10 41 533 33 7 7 7
De- Cem- ber, 1927	27 1 1 1,408 1,408
No- vem- ber, 1927	28 <sup>118</sup> 33 1988 1988 1
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July- Sep- tember, 1927	1, 8295 208 1, 8295 208 1, 8295 208 208 208 208 208 208 208 208 208 208
Place	Lithuania
Febru- ary, 1928	44
Janu- ary, 1928	1 19 19 11 1 1 1 2
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July- Sep- tember, 1927	G∞20 €-320-0
Place	Argentina: Rosario

**YELLOW FEVER** 

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Belgian Congo: Boma																			
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October	September	August	July	Place	
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<sup>1</sup> See monthly table below.

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