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ROCKY MOUNTAIN SPOTTED FEVER: SPONTANEOUS INFECTION IN THE TICK *AMBLYOMMA AMERICANUM*[1]

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The rickettsia of Rocky Mountain spotted fever has been recovered from a lot of 114 unfed *Amblyomma americanum* nymphs collected September 11, 1942, near Weathers, Okla. This proof of the spontaneous occurrence of the spotted fever rickettsia in this tick, together with accumulated suggestive case data, establishes *A. americanum* as the third species of tick transmitting spotted fever to man in the United States.

The nymphal ticks from which the rickettsia was recovered were collected from vegetation in a wooded pasture close by the home of a child, B. S., just recovered from spotted fever. The woods extended beyond the pasture and partially surrounded the dwelling. Dogs belonging to the family were heavily infested with *A. americanum* nymphs and also carried a few adults of this species and one adult each of *A. maculatum* and *Dermacentor variabilis.* Mrs. S. stated that she often found nymphs (which must have been *A. americanum*) on herself and children, including a baby 2 months of age.

RECOVERY AND IDENTIFICATION OF THE RICKETTSIA

The test nymphs of *A. americanum* were placed on a host guinea pig on September 17 and were removed, partially replete, on the 21st. The host animal was afebrile for 5 days and had temperatures of 40.0°, 40.6°, and 40.6° C. on the sixth, seventh, and eighth days, respectively. Heart blood cultured on the seventh and eighth days was sterile. The guinea pig was sacrificed the eighth day. The spleen was enlarged to twice its normal size; the lungs suggested intercurrent infection; grossly, the testes and adnexa appeared normal. Transfer by a spleen-liver suspension in saline was made intraperitoneally to six fresh animals.

[1] From the Rocky Mountain Laboratory (Hamilton, Mont.), Division of Infectious Diseases, National Institute of Health.

The partially replete nymphs were also triturated in saline and the resultant suspension divided and injected intraperitoneally into four fresh animals.

All guinea pigs in both groups became febrile on the third or fourth day and were sacrificed while febrile for further transfers to provide recovered animals for cross-immunity tests. Heart blood taken from animals before they were sacrificed was bacteriologically sterile. A passage strain was initiated from each group. Only male guinea pigs were used.

Characteristics of the disease in guinea pigs.—The two strain lines have each been carried through 15 passages, the inoculum since the first transfer having been 1 cc. of a spleen-tissue suspension from a guinea pig sacrificed on the third or fourth day of fever. The incubation period has averaged 4 days (shortest 2, longest 8), the febrile period 5 days (shortest 2, longest 8). Two passage guinea pigs have remained afebrile; one was later immune to spotted fever, the other to boutonneuse fever. Therefore, it is evident that inapparent infection may occasionally occur. There have been no fatalities except from intercurrent infections. The strains cross immunize reciprocally.

In animals sacrificed for passage transfer, the spleen has been occasionally of normal size, usually enlarged to less than twice normal size, and in one animal was two and one-half times normal size, the testes and tunicae have usually appeared grossly normal, but were slightly injected in a few animals. The tunicae have not been even slightly adherent to the parietal wall or to the testes, nor has there been any apparent swelling or reddening of the scrotum.

Demonstration of rickettsiae.—Rickettsiae indistinguishable from those of spotted fever have been observed in smears of infected guinea pig tissues stained by the Macchiavello method. They were present in the cytoplasm and occasionally appeared to be intranuclear in cells of the peritoneal lining and tunicae. They were also seen in impression smears of the spleen of a guinea pig sacrificed on the fifth day of fever.

Cross-immunity tests.—We have shown complete reciprocal cross immunity between the disease produced by the *A. americanum* rickettsia and spotted fever (three highly fatal strains, two from western Montana and one from Idaho), boutonneuse fever, South African tick-bite fever, and "maculatum" infection.

Guinea pigs recovered from endemic typhus were all susceptible to the *A. americanum* disease, while of 4 recoveries from the latter disease used in the reverse test, 2 remained afebrile and 2 had 3 and 6 days of fever, respectively, but no scrotal involvement. Of 15 epidemic typhus recoveries that received the *A. americanum* agent, 6 remained afebrile and 9 had fever for 1, 2, 2, 3, 3, 4, 4, 4, and 6 days,

respectively. In the reverse test using 12 animals, 4 remained afebrile and 8 had fever for 2, 3, 3, 3, 3, 4, 5, and 5 days, respectively.

There was no cross immunity in either direction between the *A. americanum* disease and American Q fever.

The complete reciprocal cross immunity between the *A. americanum* disease and spotted fever, boutonneuse fever, South African tick-bite fever, and "maculatum" infection, on the one hand, and the lack of complete reciprocal cross immunity with epidemic and endemic typhus on the other hand, place the *A. americanum* disease in the Rocky Mountain spotted fever group. This finding is further strengthened by the failure of epidemic typhus vaccine to protect against this disease.[2] The fact that spotted fever vaccine affords protection against it definitely identifies this disease as spotted fever, since this vaccine does not protect against other diseases of the spotted fever group (except the fevers of Colombia and of the States of São Paulo and Minas Geraes in Brazil, which are apparently identical with spotted fever).

CASE DATA SUGGESTIVE OF TRANSMISSION OF SPOTTED FEVER BY *AMBLYOMMA AMERICANUM*

In 1933 Parker, Philip, and Jellison (*1*) cited a possible Maryland case of spotted fever in 1926 (*2*), a case in Missouri in 1931 (*3*), and a group of four cases in Louisiana in 1931 for which the available evidence suggested transmission by *A. americanum*.[3] No further suggestive reports were received until 1941 and 1942. One of the 1942 cases has already been referred to in connection with the recovery of a strain of spotted fever from *A. americanum*. The other new evidence includes two especially significant groups of cases occurring in Oklahoma and Texas in 1941 and 1942, respectively, and an apparent case in South Carolina in 1942.

The Oklahoma cases, which were at Armstrong, Bryan County, have been discussed by Hassler, Sizemore, and Robinson (*4*) in a paper presented before the American Epidemiological Society, Baltimore, Md., on March 20, 1942. They included seven persons, the entire Q. family (grandmother, father, mother, and three children), and the attending physician. All were bitten by ticks on the Q. premises, including the physician, who found a tick attached to his body after

[2] This vaccine also failed to protect against a strain of spotted fever isolated from a Texas case occurring in 1942 (see below) which was presumably infected by *Amblyomma americanum*. See footnote 5.

[3] The four Louisiana patients, all ill during the same period, were a husband and wife, 66 and 53 years of age, respectively, and two grandsons each about 5 years old. The two children lived in separate houses within three-fourths mile of their grandparents. The three families intermingled freely. The grandparents and one of the children died within the 5-day period August 20 to 24; the second child recovered. The area was heavily wooded and heavily infested with ticks. Local collections made by the Federal Bureau of Entomology, including one tick from the bedroom of the grandparents, were all *A. americanum*. These cases were investigated by Medical Director L. L. Lumsden and Surgeon T. B. H. Anderson, of the U. S. Public Health Service, and by other physicians who concurred with the attending physician in the diagnosis. We are indebted to Dr. Lumsden for very kindly sending us the available records of these cases.

spending a night at the Q. home. The onsets all occurred during the 32-day period from August 13 to September 13. Three of the cases were fatal.

The premises were visited by F. R. Hassler and R. A. Robinson in early September 1941, and nymphal ticks were collected from the family dog and cat and from grass and sand around the house. Nine of these were forwarded to the Rocky Mountain Laboratory and were identified by R. A. Cooley as nymphs of *A. americanum*. Three were engorged and were tested for infectious agents with negative results.

Later in the same month, four pocket gophers (probably *Geomys breviceps dutcheri*) infested with *A. americanum* were trapped on the premises and apparent strains of Rocky Mountain spotted fever were established in guinea pigs from the tissues of one of the gophers and from the nymphs attached to it.[4]

Unfortunately, these strains were lost before cross-immunity tests could be made with a known strain of spotted fever. However, the strain data given by Hassler et al. strongly suggest that the infectious agent involved was that of spotted fever.

The locality was visited in early September of 1942. No ticks were found on the premises at that time. It was learned that the dwelling in which the Q. family resided was one of several new houses recently built at the edge of town on acreage previously used as pasture land. The Q. family took possession in the early summer of 1941 but immediately left for Texas, whence they returned about two weeks before the onset of the first case. The house and a converted trailer, in which one member of the family lived, were both located under three large live oak trees. These were the only trees in the pasture land fenced off for the new houses, and the localized *A. americanum* population on the Q. premises was probably owing to the former use of the shade by tick-infested cows. Neither the occupants of the other houses in 1941, nor the family occupying the Q. dwelling in 1942 were troubled by ticks.

None of the observations made in 1941 or again in 1942 indicated the local occurrence of *D. variabilis*.

The four Texas cases in 1942 occurred in two children in each of two families (B. and D.) living in a trailer camp on the edge of West Columbia. Onsets were within the 5-day period, June 15 to 19. The B. children, 4 and 5 years of age, both recovered; the D. children, 10 months and 3 years of age, both died. There were 12 children in the camp at this time, and numerous adult and nymphal ticks had been removed from all of them.

Clinical and epidemiological data for these cases and the histopathological changes in the two fatal ones have been discussed in

[4] This is thought to be the first record of pocket gophers as hosts of *A. americanum*.

papers by Reading and Klint (*5*) and by Anigstein and Bader (*6*) presented before the meetings of the American Society of Tropical Medicine, Richmond, Va., November 10 to 12, 1942, and in one by Anigstein and Bader (*7*) published in Science (1942). Epidemiological studies, including the collecting of ticks for testing for infectious agents, were made in late June and early July by Anigstein and Bader and independently by T. McGregor, of the Texas State Board of Health Laboratory (Austin), and in late August by one of us (G. M. K.) and McGregor.

The trailer camp, like the premises on which the Oklahoma cases became infected in 1941, had but recently been part of a cattle pasture and also contained large live oak trees under which cattle could seek shade. Adult ticks were abundant in late May. In late June nymphs were present, and McGregor collected several adults in the corners of the camp ground. At that time, and again in late August dogs and cows belonging to all nearby neighbors were examined; some nymphs and adults were collected on both occasions. On the latter occasion no ticks were found at the camp, but 5,500 nymphs were collected by dragging a small heavily wooded section adjoining the pasture land.

No species of ticks other than *A. americanum* was collected by any of these persons. Anigstein and Bader recovered a nymph of this species from the mother and another from the brother of the D. cases.

Anigstein and Bader (*6*) report that strains of infection were established in guinea pigs from blood samples from the D. cases and that these strains cross immunize with each other and with a strain of Rocky Mountain spotted fever sent them from the Rocky Mountain Laboratory.[5] One of the D. strains, kindly furnished by Anigstein, exhibits complete reciprocal cross immunity with our *A. americanum* strain of spotted fever.

A pool of seven adult *A. americanum* collected in late June from a cow and dogs in the vicinity of the camp was injected into guinea pigs by Anigstein and Bader (*6*). They believed that possible spotted fever infection resulted in one of the test animals, but unfortunately the strain was not maintained and the few animals available for immunity testing did not remain completely afebrile when tested against one of the D. strains.

The entire 5,500 *A. americanum* nymphs collected in late August were tested at the Rocky Mountain Laboratory for infectious agents.

[5] In July 1942, guinea pigs of the 145th passage of the Mastenbrook strain of spotted fever, established in 1940 from a western Idaho case, were shipped to Dr. Anigstein. This strain was used for the cross-immunity tests with the two strains established from the D. family. It is of interest to note that Anigstein and Bader report that this strain has, in their hands, at Galveston, Tex., killed only 15 percent of passage animals, whereas at Hamilton, Mont., guinea pigs of the 145th to 174th passage of this strain have shown a fatality rate of 90 percent.

Febrile periods occurred in numerous test animals, but quite unfortunately an intercurrent *Salmonella* infection made it necessary to destroy all the guinea pigs before they could be challenged with spotted fever virus.

The South Carolina case was that of an entomologist (O'K.) who spent the period April 11 to 17, 1942, on Bull Island, a few miles off Charleston, and then returned to New Hampshire. He became ill on April 20. The clinical findings suggested spotted fever. The patient has written us that ticks had been active on the island for about a month previous to his arrival and were "unbelievably" abundant during his stay. "A considerable number of ticks were found" attached to his body each of several nights. Unfortunately, none were saved for determination, but the patient was informed by F. C. Bishopp, of the Federal Bureau of Entomology and Plant Quarantine, that *A. americanum* was the prevailing local species. The probability that the attached ticks were of this species is enhanced by the fact that he found "a considerable portion of the ticks difficult to remove" and the mouthparts were left in the skin.

DISCUSSION

Since the studies of Parker et al. reported in 1933 (*1*), which included not only the suggestive case data referred to above but also data showing that *A. americanum* is an efficient vector of spotted fever under laboratory conditions, it has been felt that the evidence that would go furthest to convict *Amblyomma americanum* as a carrier of spotted fever both in nature and to man would be the demonstration of the spontaneous occurrence of the specific rickettsia in this tick. It was further felt that it would be particularly significant if this virus could be recovered from ticks that had not ingested blood (i. e., collected from vegetation rather than from a host), since this would show beyond question that it had persisted from an earlier stage or generation. In the hope of accomplishing this, some 5,000 specimens of *A. americanum* (larvae, nymphs, and adults) collected in Texas, Oklahoma, Arkansas, and Missouri have since been tested (through 1941), without obtaining convincing evidence. Many of the several hundred test guinea pigs exhibited fever, a few showed scrotal swelling and reddening, and a few were later immune when challenged with spotted fever virus. However, no infection that could definitely be identified as spotted fever was established, but several strains of American Q fever were isolated from ticks collected in Liberty County, Tex., in 1937.

Aside from the evidence suggestive of *A. americanum* as the transmitting agent, the data for the seven Oklahoma cases in 1941 are of especial interest for two reasons: (1) they afford the first record in the United States of so large a number of cases of spotted fever in a single

household in the same year, and (2) if the infectious agent from pocket gophers established by Hassler et al. (*4*) in guinea pigs was that of spotted fever (Hassler's data and our subsequent demonstration of the spontaneous occurrence of the spotted fever rickettsia in *A. americanum* strongly suggest that it was), then this is the first record of the recovery of the rickettsia of spotted fever from our native fauna.

With respect to the first point, multiple cases of spotted fever in single households during the same tick season are of more frequent occurrence in the United States than it is generally supposed. In most instances such multiple infections have been limited to two cases, but there are several records of three cases and one record of four cases. However, the occurrence of seven cases on the same premises within a 32-day period is sufficiently startling to indicate some unusual epidemiological element that is not present when *Dermacentor andersoni* or *D. variabilis* is the transmitting agent. The evidence at hand suggests that this element consists in two factors, first that *A. americanum* nymphs bite man freely whereas those of the dermacentors do not and, second, that under favorable conditions these nymphs may occur in immense concentrations within relatively small areas. Another contributing factor may be an apparent tendency in the South to ignore the bites of immature ticks.

As previously pointed out, the epidemiological setting of the four Texas cases in 1942 was quite similar to that of the Oklahoma cases, except that the former group occurred in two families. However, these two families lived in trailers parked close together under the same tree.

While it is felt that the accumulation of circumstantial case data together with the proof that ticks are infected in nature is adequate for the conclusion that *A. americanum* is a vector of spotted fever, nevertheless there are not sufficient data on which to evaluate its importance as such.

The wide host relationship of this tick, which includes rodents and other animals known or presumed to be susceptible to spotted fever, the fact that larvae, nymphs, and adults all bite man (larvae and nymphs of *Dermacentor andersoni* and *D. variabilis* rarely bite man), and its occurrence on dogs and cats which often bring it into more or less intimate contact with persons in the home are points which, collectively, carry the implication that it could well be a transmitting agent of considerable importance within areas in which it is abundant. A detracting factor may be that a presumably large percentage of the immature ticks engorge on horses and cattle, which are supposedly not susceptible to spotted fever, whereas the larvae and nymphs of the two dermacentors engorge almost exclusively on susceptible small mammals.

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Hooker, Bishopp, and Wood (1912) (*8*) show *A. americanum* as occurring east and south of a line starting from a short distance west of the southernmost tip of Texas and extending northward and northeastward across the States of Oklahoma, Kansas (southeastern corner), Missouri, Illinois, and Indiana into southern Michigan, and thence almost directly eastward across New York and the southern portions of the three northern New England States. However, such evidence as we have suggests that it is extremely scarce in the northern portion of this area.[6] We also have recent reports of its occurrence in southern Iowa. Actually, there is very little published information concerning the distribution and abundance of this tick in any of the 18 States concerned. Apparently it is most abundant in parts of Texas, Louisiana, Oklahoma, Arkansas, and Missouri. Doubtless it is abundant, at least sporadically, in other southern States eastward to the Atlantic Coast.

The data of Hooker, Bishopp, and Wood (*8*) and observations by Kohls and other members of the staff of the Rocky Mountain Laboratory indicate that *A. americanum* is active from some time in the spring until some time in the fall, the seasonal limits apparently varying somewhat with the latitude. The adults are most prevalent during the spring and early summer, the nymphs and larvae thereafter. Therefore, the season of the year during which cases of Rocky Mountain spotted fever transmitted by this tick are likely to occur is essentially concurrent with that of cases caused by *D. variabilis*. However, the fact that larval and nymphal *A. americanum*, which bite man so freely, are abundant in the late summer and early fall when adult *D. variabilis* are decreasing in numbers suggests that in areas where both occur, the former could well be a more important late-season transmitting agent than the latter. However, there is no present evidence indicating that this is necessarily so. It is likely that the true importance of *A. americanum* as a spotted fever vector may prove difficult to determine. This problem is accentuated, first, because its range lies entirely within that of *D. variabilis* and, second, because individual ticks which cause human infections are seldom recovered and those recovered are rarely identified by competent persons. Another complicating factor is the question of differential diagnosis in sections where both endemic typhus and spotted fever are prevalent. Certain epidemiological considerations may prove helpful, e. g., whether the patient was bitten by a larva, nymph, or adult tick (if adult, either species is possible; if immature, *A. americanum* is strongly indicated), apparent presence of only one

[6] The State Entomologists of Ohio, Indiana, and Illinois (J. S. Houser, J. J. Davis, and W. P. Flint respectively), and R. E. Rebrassier, of the College of Veterinary Medicine of Ohio State University, have recently informed us that they know of no records of *A. americanum* in their respective States.

species in the locality where infection occurred (at West Columbia, Tex., only *A. americanum* was found), and the character of the local vegetative setting (*A. americanum* is much more abundant in wooded areas than *D. variabilis*).

SUMMARY

The rickettsia of Rocky Mountain spotted fever has been recovered from *Amblyomma americanum* nymphs collected from vegetation. Old and recent case data suggestive of the transmission of spotted fever by this tick are discussed. The evidence of spontaneous infection in *A. americanum*, together with the suggestive case data, is considered sufficient to establish this tick as the third species transmitting spotted fever to man in the United States.

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MORBIDITY AND MORTALITY FROM SPECIFIC CAUSES DURING 1942 AND RECENT PRECEDING YEARS

Morbidity

The following data concerning the prevalence of nine communicable diseases are based on weekly telegraphic reports from the health officers of all of the States and the District of Columbia. Although cases of each of these diseases are reportable by law, there is considerable variability in the completeness of the reports. While the number of cases reported is smaller than the number which actually occur during any given year, it is believed that the data indicate reasonably accurate trends and times of unusual prevalence of a disease.

DISEASES ABOVE MEDIAN PREVALENCE

Meningococcus meningitis.—The number of cases (3,769) of meningococcus meningitis reported during 1942 was 1.9 times the number reported in 1941, which figure (2,001) also represents the median incidence for the 5-year period 1937–41. For the country as a whole this disease was relatively high throughout 1942, with a rather sharp rise in the number of cases during the last weeks of the year which has continued into 1943. Each section of the country contributed to the high incidence except the East South Central and Mountain, the excesses ranging from about 1.2 times the median in the two North Central regions to almost 5 times the median in the New England region.

Measles.—The only other communicable disease more prevalent than usual during 1942 was measles. Although the number of reported cases (approximately 500,000) exceeded the median for 1937–41 by about 30 percent, it was about 40 percent less than the number reported in 1941. This disease reached the highest peak on record in 1941, with every section showing a large excess over the median except the New England, Mountain, and Pacific regions. In 1942 these three regions had excesses over the 5-year median and the South Atlantic, West North Central, and West South Central were again above the median.

DISEASES BELOW MEDIAN PREVALENCE

Diphtheria.—The incidence of diphtheria reached a new low level during 1942. The total number of reported cases (15,450) was about 10 percent below even the low incidence of the preceding year, and about 35 percent less than the median for 1937–41. The situation was favorable in all sections of the country, but the New England and Pacific regions reported slightly more cases in 1942 than in 1941. The three southern sections had more cases than any other three sections.

TABLE 1.—*Number of reported cases of 9 communicable diseases in the United States during the year 1942, the number for the year 1941, and the median number of cases reported for the years 1937–41*

Division	1942	1941	5-year median 1937–41	1942	1941	5-year median 1937–41	1942	1941	5-year median 1937–41
	Diphtheria			Influenza [1]			Measles [2]		
United States	15,450	16,937	24,180	109,229	630,670	291,000	506,252	868,771	384,853
New England	297	251	398	232	12,004	1,167	50,645	36,809	39,353
Middle Atlantic	1,502	1,678	2,985	916	7,658	2,431	72,576	288,337	115,198
East North Central	2,052	2,367	3,991	3,677	22,099	20,983	53,712	270,894	53,941
West North Central	1,057	1,163	1,495	1,466	21,038	10,870	47,908	51,597	31,597
South Atlantic	4,133	4,690	6,768	34,373	218,016	65,481	58,820	125,491	46,081
East South Central	1,823	2,056	2,713	9,494	77,825	28,084	8,667	40,193	10,822
West South Central	2,948	2,980	3,391	43,378	213,374	62,210	51,499	32,899	18,288
Mountain	686	903	989	10,715	31,600	23,649	35,583	20,528	20,528
Pacific	952	849	1,362	4,978	27,056	27,056	126,842	22,023	24,287
	Meningococcus meningitis			Poliomyelitis			Scarlet fever		
United States	3,769	2,001	2,001	4,193	9,082	9,082	126,395	127,482	161,975
New England	477	162	102	185	420	151	14,425	10,017	10,017
Middle Atlantic	1,068	443	499	700	2,255	1,185	30,389	33,985	43,653
East North Central	292	228	236	979	1,372	1,445	35,970	39,177	59,168
West North Central	158	108	132	502	470	901	13,464	11,647	17,905
South Atlantic	748	439	439	377	1,929	893	11,623	10,638	10,660
East South Central	253	287	287	440	1,812	380	6,698	8,439	6,626
West South Central	291	175	180	478	299	346	3,285	3,525	4,680
Mountain	94	43	101	166	143	344	4,120	3,639	5,107
Pacific	388	116	116	366	382	780	6,421	6,415	10,604
	Smallpox			Typhoid and paratyphoid fever			Whooping cough [2]		
United States	826	1,373	9,479	6,731	8,543	12,743	178,119	208,987	208,084
New England	1	0	0	276	264	286	21,280	16,143	16,378
Middle Atlantic	34	0	0	852	1,231	1,232	47,825	40,502	44,265
East North Central	206	455	2,103	798	993	1,633	45,688	49,184	44,016
West North Central	157	496	2,745	371	467	737	7,383	14,599	11,864
South Atlantic	37	37	51	1,587	1,917	2,656	17,904	29,141	27,043
East South Central	101	79	234	906	1,200	1,570	6,586	7,700	6,839
West South Central	223	125	372	1,350	1,685	3,052	9,051	13,759	12,777
Mountain	40	80	802	337	378	529	6,842	12,470	8,859
Pacific	27	101	919	254	408	653	15,560	25,489	20,081

[1] Mississippi. New York, and Pennsylvania excluded; New York City included.
[2] Mississippi excluded.

Influenza.—The number of reported cases of influenza in 1942 was less than 20 percent of the number for 1941 and less than 30 percent of the 1937–41 median. The largest numbers of cases were reported in the South Atlantic, West South Central, and Mountain regions, but the disease did not reach epidemic proportions in any section of the country and the total number of cases for the country as a whole was the lowest in recent years.

Poliomyelitis.—This disease also reached a comparatively low level during 1942, the total number of cases being less than 50 percent of the median for 1937–41. The numbers of reported cases in the two South Central regions and New England were above the 5-year medians, but there was no unusual occurrence in any part of the country. With the exception of 1938 when only 1,720 cases were

reported, the incidence in 1942 was the lowest since 1932 when the cases totaled approximately 3,800.

Scarlet fever.—This disease also reached a new low level in 1942. The number of cases (126,395) was, however, only slightly below that for 1941, but it was less than 80 percent of the median expectancy (approximately 162,000 cases). New England reported a considerable excess and the South Atlantic a smaller excess over the expectancy, but the incidence in all other regions either closely approximated or fell considerably below the 5-year median.

Smallpox.—The incidence (826 cases) of smallpox during 1942 was the lowest on record. From 1933 to 1938 a peak of approximately 14,000 cases was gradually attained, but since 1938 there has been a rapid decline until the low level of 1942 was reached. The 34 cases reported from the Middle Atlantic region were spread by a person from Ohio with an active case of smallpox who attended a wedding in the neighborhood of Lancaster, Pa. Vaccinations were widespread and numerous and there was no further spread of the disease. Other regions where the disease is normally high reported a low incidence.

Typhoid and paratyphoid fever.—The typhoid fever situation was very favorable in 1942. The number of cases (6,731) was less than 80 percent of the number recorded for 1941 and less than 55 percent of the median for 1937–41. For the country as a whole as well as for all regions except New England the incidence in 1942 was the lowest on record.

Whooping cough.—The number of cases (178,119) of whooping cough reported in 1942 was about 15 percent less than the normal expectancy (approximately 208,000 cases). Excesses over the 5-year medians were reported from the New England, Middle Atlantic, and East North Central regions, but in all other sections the numbers of cases were lower than the 5-year median.

Mortality

The annual mortality rates for specific causes for the past 5 years as shown in table 2 are based on preliminary data for 35 States and the District of Columbia. Similar mortality rates by quarters for the past 3 years are shown in table 3. Death rates for specific causes for each of the 35 States, the District of Columbia, and Hawaii are presented in tables 4 and 5.

This report is made possible through a cooperative arrangement with the respective States which voluntarily furnish provisional tabulations of current birth and death records to the United States Public Health Service. Because of lack of uniformity in the method of classifying deaths according to cause, and the impossibility of including a certain number of delayed certificates, these data are

preliminary and will differ in some instances from the final figures subsequently published by the Bureau of the Census. Data for preceding years from the same source, collected and tabulated in the same way as the current data, are included for comparative purposes. These provisional rates are used in preference to the final figures published by the Bureau of the Census because it is believed that they are more comparable with current provisional information.

TABLE 2.—*Summary of mortality trends from certain causes in a group of 85 States,* [1] *1938–42 (estimated civilian population May 1, 1942, 95,494,428)*

[Rates provisional for all years]

Diseases (numbers in parentheses are from the International List of Causes of Death, 1938 revision)	1942	1941	1940	1939	1938
	Rate per 1,000 population				
Deaths, all causes	10.5	10.5	10.6	10.5	10.5
Births, exclusive of stillbirths	19.5	18.6	17.6	17.0	17.5
	Rate per 1,000 live births				
Infant mortality (live births, 1942, 1,863,878)	44	45	46	47	50
Maternal mortality	2.7	3.0	3.6	3.8	4.2
	Rate per 100,000 population				
Typhoid and paratyphoid fever (1–2)	0.52	0.79	1.00	1.50	1.75
Dysentery (27)	1.39	2.08	2.04	1.82	2.14
Diarrhea and enteritis under 2 years (119)	6.95	7.93	7.41	8.17	10.54
Appendicitis (121)	6.45	8.27	9.87	10.91	11.24
Scarlet fever (8)	.34	.35	.51	.66	.97
Diphtheria (10)	.86	.91	1.00	1.52	1.89
Whooping cough (9)	1.87	2.57	2.07	2.20	3.38
Measles (35)	.84	1.51	.50	.80	2.27
Cerebrospinal (meningococcus) meningitis (6)	.68	.50	.48	.48	.75
Acute poliomyelitis and acute polioencephalitis (36)	.39	.56	.69	.47	.34
Acute infectious encephalitis (lethargic) (37)	.42	.70	.52	.44	.56
Malaria (28)	.43	.58	.68	.83	1.19
Pellagra (69)	1.01	1.21	1.29	1.56	2.10
Tuberculosis, all forms (13–22)	43.0	44.3	44.9	46.0	47.9
Syphilis (30)	11.6	13.2	14.0	14.6	15.4
Influenza (grippe) (33)	8.2	15.8	14.7	16.2	12.1
Pneumonia, all forms (107–109)	46.6	47.4	54.0	59.3	66.7
Cancer, all forms (45–55)	124.3	121.1	118.9	115.4	113.9
Diabetes mellitus (61)	26.2	25.9	26.7	25.6	24.0
Intracranial lesions of vascular origin (83)	92.0	87.6	89.7	85.8	83.9
Diseases of the heart (90–95)	303.4	295.3	293.7	279.4	270.3
Nephritis, all forms (130–132)	72.6	74.2	77.6	73.2	75.8
All accidents, including automobile accidents (169–195)	68.8	73.9	70.1	68.7	70.1
Automobile accidents (170a, b, c)	20.1	28.4	24.6	22.9	23.4

[1] Includes all of the States listed in table 5. The District of Columbia is counted as a State.

TABLE 3.—*Mortality from certain causes in each quarter of 1942, 1941, and 1940, in the 35 States*[1] *with available data*

[Rates provisional for all years]

Period	All causes, rate per 1,000 population (annual basis)	Births (exclusive of stillbirths) per 1,000 population (annual basis)	Rate per 1,000 live births		Death rate per 100,000 population (annual basis)																		
			Total infant mortality	Maternal mortality	Typhoid and paratyphoid fever (1-2)	Dysentery (27)	Diarrhea and enteritis under 2 years (119)	Scarlet fever (8)	Diphtheria (10)	Whooping cough (9)	Measles (35)	Cerebrospinal (meningococcus) meningitis (6)	Acute poliomyelitis and polioencephalitis (36)	Acute infectious encephalitis (lethargic) (37)	Tuberculosis, all forms (13-22)	Syphilis (30)	Influenza (grippe) (33)	Pneumonia, all forms (107-108)	Cancer, all forms (45-55)	Diabetes mellitus (61)	Intracranial lesions of vascular origin (83)	Diseases of the heart (90-95)	Nephritis, all forms (130-132)	All accidents, including automobile accidents (166-195)	Automobile accidents (170a, b, c)
January–December:																									
1942	10.5	19.5	44	2.7	0.5	1.4	6.9	0.3	0.9	1.9	0.8	0.7	0.4	0.4	43.0	11.6	8.2	47	124	26.2	92	303	73	69	20.1
1941	10.5	18.6	45	3.0	.8	2.1	7.9	.4	.9	2.6	1.5	.5	.6	.7	44.3	13.2	15.8	47	121	25.9	88	295	74	74	26.4
1940	10.6	17.6	46	3.6	1.0	2.0	7.4	.5	1.0	2.1	.5	.5	.7	.5	44.9	14.1	14.7	54	119	26.7	90	294	78	70	24.6
January–March:																									
1942	11.3	17.8	50	2.9	.4	.8	3.5	.5	1.0	2.0	1.6	.7	.2	.4	45.1	12.3	15.7	69	124	29.2	99	332	80	68	22.8
1941	12.0	17.4	53	3.3	.5	[2]	3.6	.5	.9	2.9	1.6	.6	.3	.5	48.1	[2]	45.6	82	121	31.1	98	346	85	68	23.7
1940	12.1	16.4	53	4.1	.5	[2]	3.7	.9	1.4	1.9	.8	.7	.3	.5	47.7	[2]	34.5	88	120	31.7	102	340	88	67	20.0
April–June:																									
1942	10.3	17.7	44	2.7	.5	1.2	5.9	.3	.3	1.9	1.3	.8	.2	.4	46.1	11.6	6.6	41	123	25.6	88	292	71	67	18.6
1941	10.3	17.8	45	3.0	.6	[2]	5.9	.4	.5	3.0	3.5	.5	.3	.5	47.8	[2]	8.5	40	121	25.9	87	292	75	70	24.8
1940	10.4	17.0	47	3.9	.7	[2]	7.6	.5	.6	2.1	.9	.5	.2	.6	48.1	[2]	10.4	47	118	25.5	88	292	79	65	21.1
July–September:																									
1942	9.6	20.2	41	2.8	.7	2.2	10.9	.2	.5	1.7	.3	.4	.7	.4	39.9	10.6	2.4	27	123	22.7	81	262	64	69	19.4
1941	9.6	20.2	40	3.0	1.3	[2]	13.6	.2	.7	2.6	.7	.4	1.1	1.3	41.0	[2]	2.7	26	120	22.1	78	253	65	80	30.7
1940	9.6	18.7	41	3.4	1.9	[2]	11.4	.2	.6	2.1	.2	.3	1.4	.6	42.5	[2]	3.2	28	119	23.2	81	253	69	75	25.7
October–December:																									
1942	11.0	22.1	41	2.4	.5	1.4	7.4	.3	1.7	1.8	.2	.8	.5	.5	41.1	12.0	8.2	51	127	27.3	99	328	75	71	19.6
1941	10.2	19.0	44	2.7	.8	[2]	8.5	.3	1.7	1.8	.4	.5	.6	.5	40.2	[2]	7.0	43	122	24.6	88	291	72	77	34.3
1940	10.4	18.1	46	2.9	.9	[2]	7.0	.4	1.4	2.2	.1	.4	.9	.4	41.4	[2]	10.7	53	119	26.5	88	291	75	74	31.3
Industrial policy holders:[3]																									
1942	7.4	------	------	------	.4	-----	[4] 4.4	.4	.6	1.0	.5	------	------	------	41.7	10.5	4.2	29	106	28.0	61	[5] 158	[6] 50	50	16.8
1941	7.4	------	------	------	.5	-----	[4] 5.0	.4	.7	1.3	.8	------	------	------	42.8	11.5	7.8	31	105	27.4	61	[5] 156	[6] 52	50	20.8
1940	7.6	------	------	------	.7	-----	[4] 4.6	.6	.8	1.2	.3	------	------	------	44.6	12.0	7.9	36	104	29.8	61	[5] 160	[6] 57	47	18.2

[1] States included are those listed in table 5. The District of Columbia is counted as a State. [2] Data not available.

[3] These data are taken from the January 1943 Monthly Statistical Bulletin published by the Metropolitan Life Insurance Co. The figures are subject to correction, since they are based on provisional estimates of lives exposed to risk (17,700,000 persons in 1938). Data do not include all diseases reported to the Public Health Service.

[4] Classified as diarrhea and enteritis, age not specified. [5] Excludes pericarditis, acute endocarditis, acute myocarditis, coronary artery diseases, and angina pectoris.

[6] Chronic nephritis (Bright's disease) only.

TABLE 4.—*Trend of death rates from all causes, of birth rates, and of infant and maternal mortality rates, 1938–42*

[Rates provisional for all years]

State	Deaths, all causes (rate per 1,000 population)					Births, exclusive of stillbirths (rate per 1,000 population)					Infant mortality (rate per 1,000 live births)					Maternal mortality (rate per 1,000 live births)				
	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938
Colorado	11.4	10.8	11.1	11.2	11.4	20.7	19.2	18.9	18.3	18.3	51	51	60	53	59	1.8	3.3	4.4	5.1	4.3
Connecticut	9.2	9.1	9.5	10.0	10.3	17.1	13.5	11.8	12.5	13.8	30	32	38	38	36	2.1	2.4	3.5	2.9	2.7
Delaware	11.7	11.8	12.1	11.8	12.0	19.4	18.1	16.5	16.3	16.7	47	43	51	44	51	1.7	2.2	5.0	4.7	5.7
District of Columbia	11.0	11.7	13.0	12.7	12.6	26.0	24.4	22.8	21.5	20.6	44	50	47	47	48	2.2	2.2	2.8	4.7	5.4
Florida	11.4	12.0	11.9	11.4	11.6	20.6	19.0	17.2	17.0	16.9	47	54	54	57	58	4.2	6.4	6.3	6.4	7.3
Georgia	9.4	9.9	10.0	9.7	10.5	23.6	21.2	20.2	19.9	20.2	49	59	58	59	68	4.1	4.4	5.2	5.5	6.6
Idaho	9.5	8.9	9.3	9.2	9.0	24.1	23.9	22.4	21.9	22.3	35	34	41	45	45	2.7	2.3	3.2	2.5	3.7
Illinois	11.1	10.7	11.2	11.0	10.8	19.3	16.9	15.6	15.0	15.5	33	34	35	38	41	1.9	2.5	2.9	3.0	3.3
Indiana	11.4	10.9	11.3	11.1	10.9	21.4	17.5	16.9	15.6	16.2	37	38	39	41	45	2.7	2.8	2.7	3.9	3.8
Iowa	10.1	9.6	9.8	9.9	9.6	19.6	16.8	17.9	17.0	17.1	34	38	34	39	38	2.1	2.6	3.1	2.6	3.1
Kansas	10.7	10.5	10.2	10.3	10.2	19.4	17.5	15.9	16.0	16.3	35	37	38	39	43	2.4	2.4	3.6	3.4	4.0
Kentucky	9.8	10.5	10.3	10.4	9.8	22.8	21.8	21.7	20.8	24.6	49	58	46	54	49	2.8	4.0	3.8	4.4	3.8
Louisiana	9.6	10.0	10.9	10.4	10.6	23.6	22.6	21.0	20.5	20.6	49	58	65	61	66	3.1	4.1	5.3	6.0	6.0
Maine	12.6	12.7	12.4	12.8	12.3	21.1	18.6	17.5	17.6	18.2	43	51	54	51	49	2.0	2.6	4.2	4.2	4.2
Maryland	11.7	11.8	12.1	11.5	11.7	21.3	18.8	16.7	15.7	16.4	46	55	49	50	55	1.9	2.2	2.7	3.3	3.4
Massachusetts	12.0	11.9	11.8	11.6	11.2	(1)	16.3	15.3	14.5	13.8	(1)	35	38	37	40	(1)	2.9	2.8	3.5	3.9
Michigan	9.5	9.8	9.9	10.1	10.0	22.1	19.8	18.8	18.3	19.1	37	39	41	42	45	2.1	2.7	2.9	2.9	3.5
Montana	10.4	10.4	10.2	10.6	10.2	22.0	21.2	20.4	19.4	19.2	35	37	46	50	43	2.1	1.7	3.5	3.2	3.7
Nebraska	9.8	9.5	9.5	9.1	9.0	18.9	17.1	16.5	16.5	16.5	33	34	36	34	36	1.7	2.3	3.2	3.4	3.4
Nevada	13.3	11.7	11.9	11.3	11.7	21.7	17.2	18.6	17.3	17.2	59	41	50	44	45	.8	2.9	4.9	4.2	1.6
New Mexico	9.9	10.6	10.5	10.9	11.0	27.2	27.6	29.8	30.0	29.0	91	97	93	96	99	4.1	3.9	4.4	4.3	4.6
New York	11.6	11.2	11.1	11.1	11.0	19.0	16.0	14.6	14.1	14.2	32	33	37	39	40	2.2	2.3	2.9	3.0	3.8
North Carolina	8.6	9.1	9.0	9.0	9.7	26.1	24.3	23.0	22.7	23.0	48	59	56	58	68	3.4	4.1	5.3	4.8	5.6
North Dakota	7.7	8.3	7.9	8.4	7.9	22.0	21.7	20.9	20.8	20.2	37	39	41	48	48	2.5	1.8	1.6	2.3	2.2
Ohio	11.1	11.2	11.3	11.2	10.9	20.4	17.6	16.3	15.6	16.4	38	41	39	42	42	2.0	2.5	3.3	3.6	3.7
Oklahoma	9.5	8.9	8.7	8.9	8.5	21.7	20.0	19.0	18.8	19.2	40	49	50	52	43	3.5	3.0	3.5	4.2	4.0
Pennsylvania	11.1	10.8	10.9	10.7	10.8	20.9	18.1	16.3	16.3	16.8	36	39	44	44	46	1.9	2.2	2.5	3.2	3.5
Rhode Island	11.3	11.0	11.2	11.0	11.8	19.5	16.1	15.1	14.7	15.0	40	36	38	40	44	1.9	2.1	2.4	3.2	2.5
South Dakota	9.3	9.2	8.7	8.9	7.4	21.0	19.7	19.0	18.0	18.0	38	41	39	41	45	2.3	2.2	3.7	3.0	3.5
Tennessee	9.2	9.8	10.0	9.7	10.0	21.5	19.8	18.2	17.6	17.9	48	56	55	54	64	3.3	3.8	4.8	5.5	5.6
Texas	8.9	9.2	9.3	8.7	9.6	(1)	21.2	19.7	19.1	19.3	(1)	57	69	67	65	(1)	3.6	4.6	4.9	5.6
Utah	8.9	8.2	8.9	8.5	8.8	28.9	24.6	24.4	23.1	24.3	33	30	40	37	45	1.8	1.7	2.4	2.8	3.2
Vermont	11.3	11.7	11.6	11.7	11.6	19.1	18.4	18.4	15.9	15.7	43	44	46	46	48	1.8	2.2	3.8	3.3	3.0
Virginia	10.3	11.1	11.0	10.7	10.9	22.6	21.1	20.1	19.4	19.8	55	68	60	62	69	3.2	4.0	4.4	4.9	5.1
Wyoming	9.2	9.1	8.5	8.9	9.0	23.4	21.2	19.9	19.7	19.5	46	45	47	45	53	2.4	2.3	4.4	3.5	3.5
Hawaii	7.6	7.4	7.3	7.5	7.9	23.8	23.5	22.6	21.7	22.1	39	40	44	54	59	2.8	2.5	2.2	3.5	3.8

[1] Data not available.

TABLE 5.—*Trend of death rates for various causes per 100,000 population, 1938–42*

[Rates provisional for all years]

State	Typhoid and paratyphoid fever (1–2)					Dysentery (27)					Diarrhea and enteritis under 2 years (119)					Appendicitis (121)				
	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938
Colorado	0.7	0.8	0.6	1.9	2.1	1.2	1.1	1.2	1.8	1.3	13.4	11.7	14.8	12.1	13.8	7.3	12.7	14.7	15.3	18.3
Connecticut	.1	.3	.3	.4	.4	(1)	.2	.1	1.1	.1	2.5	2.1	1.9	2.1	3.4	4.5	7.3	8.7	9.2	9.2
Delaware	.4	(1)	.7	2.6	1.5	.4	.8	.8	.4	1.2	14.9	10.3	4.9	5.3	12.2	3.3	8.6	10.1	12.2	11.7
District of Columbia	.4	.7	.7	.8	1.0	.4	1.2	1.5	.5	1.4	20.9	22.0	10.2	11.5	11.4	7.3	9.6	11.8	12.5	14.1
Florida	1.4	1.5	1.3	1.5	2.5	1.9	2.0	1.6	2.4	2.5	8.0	9.3	7.6	10.5	12.1	6.4	8.9	10.3	10.8	11.9
Georgia	.8	1.7	2.0	2.6	3.9	2.8	3.4	3.9	4.3	6.4	9.3	13.8	12.5	13.0	22.0	5.7	7.6	9.0	9.4	9.5
Idaho	1.0	1.0	1.1	3.1	2.9	(1)	.6	1.5	.6	.4	.6	1.6	6.5	5.8	4.9	4.8	12.4	16.0	16.7	14.5
Illinois	.2	.4	.4	1.4	.8	.7	.5	.7	.9	1.0	2.0	3.3	2.5	3.1	5.5	6.7	9.0	10.7	11.6	12.0
Indiana	.3	.6	.8	1.1	.7	.6	1.0	.8	.9	1.2	7.2	6.2	3.5	5.5	8.6	7.8	8.1	10.7	10.8	12.0
Iowa	(1)	.2	.4	.6	.8	.2	.4	.4	1.0	1.0	2.3	1.8	2.1	2.3	3.4	7.2	8.4	10.1	12.8	12.2
Kansas	.4	.3	.6	.7	.7	.5	.3	.6	1.3	1.2	3.8	2.8	3.8	4.0	5.1	8.1	10.7	11.7	14.0	12.0
Kentucky	1.6	2.8	2.5	4.3	4.9	4.8	8.9	4.1	6.8	7.5	13.0	20.9	13.7	19.0	30.4	6.4	9.1	10.4	10.8	11.6
Louisiana	1.8	2.5	3.7	5.8	5.0	1.9	2.4	3.0	2.8	3.9	8.0	9.6	14.9	12.4	16.3	6.3	8.5	9.7	12.5	13.1
Maine	.5	.4	.6	1.1	1.9	.2	.2	.1	.1	.7	7.8	6.2	5.3	5.6	7.8	8.0	9.9	12.7	11.6	11.1
Maryland	.5	.9	.6	.9	1.8	1.2	2.4	1.0	2.1	3.6	13.1	17.1	6.7	9.4	11.3	4.5	5.8	6.4	8.0	6.4
Massachusetts	.0	.1	.2	.3	.3	.0	.2	.1	.3	.5	2.7	4.0	3.0	2.0	2.7	5.0	7.3	9.8	9.9	10.6
Michigan	.1	.2	.2	.6	.6	.6	.8	.3	.5	1.0	4.3	4.9	3.3	5.2	6.2	5.7	8.5	9.8	11.1	10.7
Montana	(1)	.4	.7	2.2	.9	.6	1.1	1.6	1.3	1.5	3.6	5.0	7.0	5.2	5.8	7.3	11.1	14.7	15.8	13.6
Nebraska	.2	.4	.4	.4	.5	.2	.2	.5	.5	.6	2.3	1.3	2.4	2.2	2.4	6.2	8.1	12.6	12.3	10.8
Nevada	1.6	2.5	.9	.9	2.8	6.2	1.8	.9	(1)	2.8	13.3	4.2	3.6	3.7	4.7	12.5	16.3	13.6	7.4	18.0
New Mexico	1.2	1.9	3.0	3.2	4.1	10.0	19.7	14.1	11.3	14.2	36.3	48.3	41.7	38.0	43.3	6.7	10.7	12.2	11.5	13.0
New York	.2	.2	.3	.3	.5	.3	.5	.2	.3	.4	3.2	2.8	3.0	4.3	4.6	6.3	8.0	9.6	10.6	11.2
North Carolina	.6	.9	1.1	1.3	2.0	1.6	2.4	1.7	2.3	3.2	13.4	20.3	13.1	19.0	29.5	5.6	6.6	6.3	7.8	8.2
North Dakota	.2	.2	.6	.6	.3	.5	.2	.8	.3	1.2	6.1	3.6	5.8	7.0	7.6	7.4	7.5	11.1	13.1	12.0
Ohio	.3	.5	.7	.7	.8	.3	.5	.2	.6	.7	6.6	7.7	4.4	5.1	6.8	6.0	8.6	9.9	11.4	11.5
Oklahoma	1.6	1.6	2.5	3.9	4.1	3.7	2.7	3.4	4.1	2.5	5.8	4.8	10.4	9.4	10.3	8.4	10.7	12.0	14.7	11.7
Pennsylvania	.4	.5	.6	.6	.9	.2	.4	.2	.3	.3	3.7	4.6	3.8	4.5	5.4	5.9	7.1	8.9	9.8	10.4
Rhode Island	.1	.1	1.0	.1	.4	(1)	(1)	.1	(1)	.1	9.7	3.1	2.0	4.0	5.1	4.4	6.3	12.9	12.7	11.1
South Dakota	.9	.3	(1)	1.2	1.2	(1)	.5	.2	.8	.3	3.2	2.8	5.1	5.4	5.7	7.7	9.3	10.6	11.5	11.7
Tennessee	.7	1.5	2.1	3.3	3.7	2.4	4.1	5.7	4.8	8.9	9.4	12.9	10.6	12.8	22.1	6.5	7.4	8.6	9.8	10.7
Texas	1.2	2.1	3.1	4.5	6.2	(2)	5.3	10.1	6.5	5.7	17.7	15.8	29.1	25.7	28.6	(2)	8.6	9.8	11.8	12.3
Utah	.5	.7	.5	.4	.4	.4	.4	.5	.9	.4	3.3	2.5	3.6	2.2	5.3	9.2	10.0	12.4	16.6	18.6
Vermont	.3	.9	.8	.3	.3	.6	.5	.8	1.4	(1)	3.5	4.5	4.7	3.6	2.8	13.1	9.5	13.9	15.1	11.5
Virginia	1.0	1.1	1.0	1.8	2.1	3.4	5.4	2.9	3.9	5.1	11.3	17.1	8.8	11.1	16.2	5.4	5.6	7.3	7.5	7.2
Wyoming	(1)	1.2	.8	2.8	2.0	.4	.0	1.6	.8	.4	3.4	2.9	6.0	6.0	8.9	12.9	10.0	14.0	19.4	18.8
Hawaii	1.6	1.2	2.4	1.9	2.4	.5	(2)	.2	.2	.5	6.4	8.1	5.7	11.1	12.4	4.6	(2)	8.0	7.0	7.8

[1] No deaths reported. [2] Data not available.

State	Scarlet fever (8)					Diphtheria (10)					Whooping cough (9)					Measles (35)				
	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938
Colorado	1.0	0.6	0.5	1.0	1.1	2.1	2.1	1.2	2.9	3.3	2.5	5.5	2.9	4.6	4.2	1.5	1.4	1.3	1.3	2.7
Connecticut	(1)	.1	(1)	.2	.2	(1)	(1)	.2	.4	.7	.3	.5	.2	1.3	.7	.2	.1	.2	.5	.1
Delaware	1.5	.7	1.1	.4	.8	(1)	.4	(1)	.8	.8	4.4	2.2	2.2	3.0	5.4	(1)	2.2	(1)	(1)	.8
District of Columbia	.2	(1)	.3	.2	.5	.4	.3	.4	.8	1.1	2.1	1.3	1.6	2.3	1.0	(1)	.5	(1)	.3	.3
Florida	.2	.1	.1	.3	.2	1.5	1.1	1.4	1.9	1.9	2.4	1.9	1.7	3.1	3.6	2.8	.9	.3	.7	1.5
Georgia	.1	.3	.5	.5	.4	1.8	1.7	1.8	2.9	3.3	3.3	4.4	3.3	4.0	7.3	2.0	4.9	.7	1.6	4.8
Idaho	.2	.4	1.3	.4	1.0	.8	.2	.2	.8	.6	.8	3.8	1.3	1.9	2.7	.6	.2	.9	.8	.8
Illinois	.4	.5	.8	.9	1.7	.8	.7	1.1	1.5	1.5	1.2	1.1	.8	2.0	2.2	.5	1.1	.2	.0	2.6
Indiana	.4	.7	1.2	1.4	2.0	.5	.7	1.0	1.6	2.4	1.9	1.4	2.2	1.8	1.3	.3	1.6	.1	.2	3.1
Iowa	.3	.3	.7	.9	1.8	.4	.3	.5	.6	1.0	1.3	1.5	.9	1.7	2.6	.6	.6	.5	1.1	1.0
Kansas	.3	.3	.5	.7	1.4	.3	.5	.7	.4	1.0	1.0	3.2	1.8	.4	2.8	1.2	1.9	.9	.2	1.3
Kentucky	.8	.9	1.0	1.1	1.5	2.0	1.9	1.8	3.2	4.0	4.1	8.1	6.1	2.4	6.6	.9	5.5	.6	1.1	3.8
Louisiana	.1	.2	(1)	.2	.3	1.9	1.7	2.1	2.9	3.2	2.7	1.8	6.4	4.8	3.9	1.2	.1	.5	4.1	.9
Maine	.7	.1	.7	.4	(1)	.4	.4	.7	2.1	2.0	3.0	2.3	2.5	3.6	3.0	1.5	1.3	1.1	.6	2.1
Maryland	.2	.2	.4	.3	.5	.3	.4	.4	1.1	1.0	1.2	4.2	3.5	1.1	2.9	.7	.7	.1	.9	.4
Massachusetts	.2	.3	.3	.3	.6	.2	.3	.2	.3	.4	.7	1.0	.5	1.0	.8	.4	.1	.3	.4	.3
Michigan	.4	.6	.8	1.3	1.7	.4	.4	.4	.5	.9	1.2	1.6	1.2	1.5	2.3	.1	1.2	.3	.6	2.0
Montana	.6	1.5	1.6	1.6	1.8	1.0	2.6	1.1	1.6	1.6	2.3	1.1	.9	2.9	8.6	(1)	.2	.9	2.9	2.0
Nebraska	.3	.3	.9	1.0	1.1	.6	.3	.8	1.0	1.2	1.0	2.4	.8	1.0	2.6	.6	.3	.5	1.0	.8
Nevada	1.6	(1)	(1)	(1)	(1)	(1)	(1)	.9	(1)	2.8	6.2	3.4	2.7	(1)	2.8	1.6	(1)	(1)	1.8	(1)
New Mexico	.2	.4	.6	.4	1.0	2.7	1.7	1.3	2.9	3.3	6.9	10.1	9.5	7.1	12.3	6.0	9.5	.9	.8	10.0
New York	.2	.2	.3	.4	.5	.1	.1	.1	.2	.3	1.1	.8	1.0	1.0	1.3	.1	.4	.1	.4	.7
North Carolina	.3	.3	.3	.4	.6	2.0	2.5	3.3	4.9	5.1	2.9	5.7	2.5	6.4	7.6	1.6	2.8	.3	1.8	7.0
North Dakota	.5	.3	.8	1.1	2.8	.7	1.0	1.4	2.0	.9	2.0	2.4	2.2	2.0	9.7	3.4	.3	.3	3.4	2.9
Ohio	.5	.4	.6	1.1	1.2	.4	.4	.4	.9	1.3	1.8	2.6	1.8	1.2	1.8	.4	1.6	.0	.1	2.6
Oklahoma	.1	.2	.3	.7	.9	2.3	3.0	3.2	3.3	5.2	2.3	5.2	2.4	1.0	7.9	4.6	1.0	.2	3.2	2.4
Pennsylvania	.4	.3	.5	.6	1.2	.2	.2	.4	.7	1.0	1.5	1.5	1.3	1.5	1.7	.4	1.0	.1	.1	2.4
Rhode Island	.4	.3	(1)	(1)	.4	.8	.1	.3	.1	.1	1.2	.6	.3	2.0	1.1	.6	.1	.4	.4	(1)
South Dakota	.2	.2	.6	1.2	1.1	3.6	2.0	.8	3.2	1.5	4.9	4.4	.6	.9	7.8	(1)	1.0	.5	4.3	.8
Tennessee	.4	.5	.5	.6	.7	1.4	1.7	1.6	3.0	3.7	2.4	5.3	3.9	3.3	7.1	1.2	4.4	.6	1.5	6.9
Texas	.2	.1	.2	.3	.5	2.3	2.5	2.3	2.6	3.8	2.6	3.4	3.7	3.3	5.9	1.6	1.2	3.1	1.3	1.8
Utah	.7	(1)	1.1	.4	.9	.5	.2	(1)	.9	1.1	.7	1.6	1.8	1.1	2.8	2.3	(1)	.9	.4	2.0
Vermont	.3	.6	.3	1.1	.3	.3	(1)	(1)	.8	3.6	3.8	(1)	1.7	6.7	3.1	.9	.6	(1)	1.7	3.3
Virginia	.4	.3	.4	.3	.3	1.5	1.6	2.0	3.7	4.4	3.6	6.9	4.7	5.8	7.1	.6	6.1	.8	.8	3.4
Wyoming	1.7	.8	.4	.4	2.4	.4	2.5	1.6	1.2	2.8	2.6	1.7	.4	.4	13.4	1.3	.8	2.4	.4	(1)
Hawaii	.2	(1)	(1)	(1)	.2	.2	.5	1.4	1.0	.5	3.0	1.6	1.9	7.2	5.4	.2	1.2	(1)	(1)	.2

[1] No deaths reported.

TABLE 5.—*Trend of death rates for various causes per 100,000 population, 1938–42*—Continued

State	Cerebrospinal (meningococcus) meningitis (6)					Acute poliomyelitis and poliencephalitis (36)					Acute infectious encephalitis (lethargic) (37)					Malaria (28)				
	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938
Colorado	1.6	0.5	0.4	0.7	0.5	0.5	0.5	1.2	1.1	0.6	0.6	2.1	0.7	0.5	1.5	-------	-------	-------	-------	-------
Connecticut	.7	.1	.4	.2	.2	.1	.1	.1	.1	(1)	.2	.1	.2	.1	.1	-------	-------	-------	-------	-------
Delaware	(1)	(1)	.7	1.5	.4	(1)	.7	.7	.4	.4	1.5	.7	(1)	1.1	(1)	-------	-------	-------	-------	-------
District of Columbia	1.6	.5	.7	.6	1.4	.1	1.2	.4	.2	.5	.2	.1	.7	.2	.5	-------	.1	.1	.2	-------
Florida	.7	.8	.4	.5	.8	.2	1.8	.4	.3	.6	.1	.4	.3	.4	.5	2.6	4.4	5.2	6.1	8.9
Georgia	.6	.5	.3	.5	.6	.3	1.0	.2	.5	.6	.2	.2	.1	.1	.3	2.5	2.4	2.8	3.1	4.9
Idaho	.4	.6	.9	1.7	1.8	(1)	.2	.6	1.5	.2	.4	1.0	.9	1.5	1.2	-------	-------	.2	.2	-------
Illinois	.3	.2	.2	.2	.3	.4	.3	.7	.3	.2	.3	.3	.3	.2	.4	.2	.1	.2	.4	.4
Indiana	.1	.5	.3	.4	.7	.7	.4	2.1	.1	.3	.4	.1	.6	.5	.7	-------	-------	.3	.2	.3
Iowa	.1	.5	.6	.4	.6	.1	.2	2.2	1.1	.4	.2	.7	.8	.7	1.0	-------	-------	-------	-------	.1
Kansas	.2	.5	.6	.4	.3	1.2	.5	2.2	.3	(1)	1.0	1.6	.8	1.6	1.2	-------	.2	.3	.1	.2
Kentucky	1.0	1.1	1.2	1.2	2.2	.9	1.2	1.4	1.2	1.0	.4	.1	.5	.8	.3	.4	.6	.6	1.1	1.1
Louisiana	.7	.8	.6	.6	.9	.4	.3	.8	.4	.4	.2	.1	.2	.3	.4	1.8	3.0	3.7	5.0	7.9
Maine	3.0	1.2	1.1	.4	.1	.4	.6	.2	.7	.5	.7	.4	.4	.6	.1	.1	-------	.1	-------	-------
Maryland	2.4	1.1	.3	.6	.7	(1)	.3	.3	.1	.1	.4	.8	.4	.4	.9	.1	-------	-------	-------	.2
Massachusetts	.8	.6	.3	.4	.6	.0	.2	.1	.1	.2	.3	.3	.2	.2	.2	.1	.0	-------	.0	.0
Michigan	.4	.2	.2	.3	.4	.2	.3	1.3	.8	.2	.3	.3	.3	.1	.2	.1	.1	-------	.0	-------
Montana	1.3	.7	1.2	.9	1.8	(1)	1.9	1.4	(1)	.4	1.5	2.6	1.8	1.4	5.4	-------	-------	-------	-------	-------
Nebraska	.2	.5	.3	.2	.4	2.2	.9	1.6	.6	.5	.2	1.3	.5	.4	.8	-------	-------	-------	-------	-------
Nevada	2.3	(1)	.9	.9	(1)	.8	(1)	.9	(1)	(1)	1.6	.8	(1)	(1)	(1)	-------	-------	-------	-------	-------
New Mexico	.6	.2	.6	1.0	.8	1.3	.4	.6	1.5	.8	1.0	.4	(1)	.4	(1)	-------	1.5	.7	.8	.2
New York	.9	.7	.4	.5	.8	.2	.4	.1	.4	.2	.9	.8	.9	.4	.7	.0	.0	.1	.2	.3
North Carolina	.5	.5	.3	.5	.9	.3	.4	.3	.3	.3	.1	.3	.3	.2	.4	1.1	.9	1.8	1.7	2.2
North Dakota	.2	.2	.3	.5	1.4	.3	.2	.6	.3	(1)	1.9	21.5	2.0	1.7	4.2	-------	-------	-------	-------	-------
Ohio	.2	.2	.4	.2	.7	.3	.7	.8	.2	.2	.2	.7	.5	.6	.4	.1	.1	.0	.1	.1
Oklahoma	.5	.4	.9	.5	1.0	.7	.6	1.2	.4	1.0	.5	.4	.6	.6	.3	1.1	2.3	1.0	2.2	3.5
Pennsylvania	.7	.3	.6	.6	.7	.2	.6	.3	.5	.2	.2	.7	.6	.6	.7	.0	-------	-------	-------	-------
Rhode Island	1.0	.3	.3	.6	.9	.1	.4	.3	(1)	.1	.7	.6	.3	(1)	.6	-------	-------	-------	-------	-------
South Dakota	1.5	.3	.6	.8	.3	.2	.3	.8	.6	.3	.3	.9	.2	.5	1.1	-------	-------	-------	-------	-------
Tennessee	.6	1.2	.6	.7	1.7	.9	1.5	.3	.5	.7	.6	.5	.6	.7	.5	1.2	1.8	2.2	3.4	3.6
Texas	.5	.4	.5	.3	.6	.7	.8	.6	1.1	.7	.2	.3	.4	.3	(1)	1.4	2.1	2.4	2.2	4.0
Utah	.2	.4	.5	.9	1.3	(1)	.2	1.1	1.3	(1)	.5	.9	.4	.9	.2	-------	-------	-------	-------	-------
Vermont	.3	.9	1.4	.6	(1)	1.2	.3	.3	1.4	1.1	.3	(1)	.3	.3	.3	-------	-------	-------	-------	-------
Virginia	2.0	1.5	1.2	.9	1.6	.3	.4	1.0	.3	.3	.5	.1	.7	.3	.2	.2	.1	.2	.3	.1
Wyoming	.9	1.7	2.8	.8	.8	.9	(1)	2.8	1.2	1.2	(1)	2.9	1.6	(1)	.8	-------	.4	-------	-------	-------
Hawaii	.9	(1)	.5	.5	.5	(1)	1.4	1.2	1.4	.5	(1)	.5	(1)	.2	.5	-------	-------	-------	-------	-------

[1] No deaths reported.

State	Pellagra (63)					Tuberculosis, all forms (13-22)					Syphilis (30)					Influenza (grippe) (33)				
	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938
Colorado	0.2	0.1	0.1	0.1	0.1	52.3	48.3	52.9	55.5	57.6	9.7	13.0	12.0	14.6	15.6	9.8	18.5	13.7	22.8	13.4
Connecticut	.2	.2	.2	.1	.1	32.4	31.4	32.4	34.3	36.8	5.8	9.1	9.1	10.9	11.8	2.3	4.8	4.4	4.7	4.5
Delaware	----	.4	----	----	.4	49.4	54.2	46.8	57.1	50.1	14.9	18.8	21.8	17.1	22.6	9.1	11.8	10.5	12.9	10.7
District of Columbia	.2	----	.1	.2	.6	59.7	60.0	64.0	66.1	71.7	19.4	21.7	24.5	27.4	34.7	2.9	4.4	6.9	9.2	5.2
Florida	2.6	3.3	3.8	4.0	5.7	44.1	46.9	50.0	49.4	54.5	18.6	26.8	26.7	28.1	31.1	14.5	27.4	28.8	27.7	20.7
Georgia	5.9	6.3	7.3	8.5	11.6	41.4	42.3	47.2	46.4	50.4	15.1	16.3	20.6	20.2	20.4	15.8	32.3	28.7	23.1	24.9
Idaho	----	----	.6	.4	----	14.9	16.8	17.8	18.7	19.4	5.0	5.5	8.0	9.5	6.9	9.0	12.8	17.8	17.5	16.3
Illinois	.1	.2	.2	.3	.2	40.8	43.7	46.2	45.8	47.0	10.5	12.8	13.4	12.8	14.3	4.7	6.4	8.1	12.3	5.6
Indiana	.1	----	.1	.1	.1	36.7	36.3	37.6	41.4	39.4	10.0	13.6	14.4	14.0	14.9	16.0	19.8	21.9	26.0	12.7
Iowa	.1	.1	.1	.1	----	16.3	13.9	16.0	17.4	18.3	6.8	8.7	7.0	8.0	8.0	9.1	13.6	15.9	23.7	12.6
Kansas	.6	.5	.4	.3	.3	25.6	23.1	24.7	23.5	23.6	11.3	12.2	11.8	12.8	13.5	13.3	23.6	18.4	18.9	15.8
Kentucky	1.6	1.4	1.9	2.8	2.2	63.8	68.2	66.4	70.3	69.7	9.7	10.3	11.2	11.9	13.0	14.9	36.6	28.2	33.8	25.5
Louisiana	2.3	2.6	2.7	3.5	6.3	50.6	55.0	58.8	58.8	61.7	22.1	24.0	23.2	27.3	27.6	12.7	26.0	32.7	23.1	23.2
Maine	.6	.2	----	.5	.2	31.4	29.9	29.5	35.1	30.2	6.8	7.1	9.0	8.7	7.3	10.7	18.4	12.6	20.2	15.3
Maryland	.1	----	.2	.4	.3	72.0	73.5	78.6	72.1	74.4	18.4	20.4	21.5	26.9	26.2	5.5	9.7	8.4	9.7	7.4
Massachusetts	.2	.2	.1	.2	.2	38.6	38.7	37.4	37.1	38.1	5.8	7.4	8.6	9.4	9.3	2.4	6.7	3.4	5.4	3.6
Michigan	.1	.1	.2	.0	.1	32.9	32.0	33.3	36.5	37.0	10.1	10.6	11.5	13.1	13.8	4.0	8.1	5.1	14.5	6.3
Montana	----	.2	----	.2	----	37.4	37.2	40.2	42.7	42.5	10.7	10.9	11.8	13.2	13.9	5.9	16.8	13.7	23.3	19.1
Nebraska	.3	.1	.1	----	.1	14.0	15.8	17.0	16.5	16.4	6.2	7.1	7.8	6.8	9.0	11.6	23.7	19.9	17.1	11.3
Nevada	----	----	.9	.9	----	57.0	45.3	67.7	52.4	58.1	14.0	30.8	19.0	13.0	26.5	5.5	5.9	11.7	6.4	.0
New Mexico	.8	2.1	3.6	2.9	3.5	60.9	66.7	70.7	72.6	76.7	10.2	11.3	14.7	17.2	17.9	13.1	15.2	13.7	19.9	10.7
New York	.1	.1	.1	.2	.2	45.4	47.0	46.2	47.9	48.8	14.6	15.1	15.7	16.3	16.5	2.2	4.1	3.1	4.1	3.5
North Carolina	3.2	4.0	4.7	5.8	7.3	45.7	50.3	49.7	51.0	53.6	8.6	10.6	12.3	12.4	13.8	8.6	25.7	21.1	17.9	14.2
North Dakota	----	----	.2	----	----	19.7	19.1	20.0	21.9	21.6	2.2	5.6	4.2	5.6	5.0	4.4	11.3	9.2	17.5	11.7
Ohio	.1	.2	.1	.1	----	40.8	42.3	39.9	42.6	45.1	11.6	13.3	14.5	15.7	16.1	9.2	14.4	14.7	18.7	11.1
Oklahoma	1.2	2.2	2.2	4.2	4.5	47.2	46.7	47.6	45.7	48.9	7.5	10.1	12.1	11.8	13.8	12.6	24.7	24.4	21.9	17.2
Pennsylvania	.1	.1	.1	.1	.1	39.3	38.6	39.5	40.2	42.2	11.3	13.0	13.4	14.6	15.3	6.4	11.1	10.8	12.3	10.1
Rhode Island	.1	.1	.1	.3	.1	37.0	37.5	33.0	37.5	39.6	10.3	9.3	9.3	11.0	14.3	2.6	5.3	4.3	5.1	4.7
South Dakota	----	2	.2	----	----	28.6	30.1	34.3	29.2	36.4	5.8	6.4	5.6	6.2	7.1	7.7	14.1	15.4	21.1	14.7
Tennessee	3.6	4.9	3.6	5.1	7.1	69.2	77.9	72.8	78.5	76.2	13.2	15.4	14.5	15.4	16.7	16.4	32.6	31.0	31.8	26.0
Texas	3.8	4.8	5.1	5.7	8.6	54.0	55.1	56.4	57.0	65.5	(1)	12.4	14.5	13.1	14.5	13.3	30.2	26.4	20.7	24.3
Utah	----	----	.4	.2	----	12.3	11.6	15.8	16.3	18.3	7.2	6.2	4.9	5.3	6.9	8.5	8.8	19.8	12.8	9.4
Vermont	----	----	----	----	----	30.2	38.1	36.5	39.0	37.1	4.6	7.8	7.2	7.3	7.6	7.8	17.6	12.8	25.9	14.2
Virginia	1.9	1.7	2.1	2.2	4.2	56.4	59.5	58.5	60.0	66.5	15.3	15.6	17.7	17.6	20.0	11.8	28.2	25.1	22.2	19.1
Wyoming	----	.4	----	.4	----	16.4	14.9	15.9	22.9	23.2	11.2	16.8	14.8	14.1	12.2	10.8	23.6	10.7	11.3	12.6
Hawaii	----	----	----	----	----	62.5	60.2	61.2	66.9	65.1	13.5	(1)	11.1	16.8	21.2	3.7	2.6	8.5	3.8	5.4

[1] Data not available.

TABLE 5.—*Trend of death rates for various causes per 100,000 population, 1938–42*—Continued

State	Pneumonia, all forms (107–109)					Cancer, all forms (45–55)					Diabetes mellitus (61)					Intracranial lesions of vascular origin (83)				
	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938
Colorado	78	66	78	88	102	124	111	119	113	113	18.5	15.9	18.2	18.2	17.1	96	84	86	87	86
Connecticut	25	28	38	42	51	132	131	136	139	143	28.0	31.3	22.8	29.2	30.1	80	79	99	82	88
Delaware	52	54	58	70	69	122	119	131	109	118	33.0	27.7	31.8	33.7	33.7	104	100	106	115	98
District of Columbia	62	66	80	72	87	135	144	151	156	138	28.4	24.9	32.2	26.8	26.0	70	80	93	84	84
Florida	51	49	56	56	69	99	103	94	93	84	20.0	20.8	19.5	20.6	18.2	111	111	112	99	96
Georgia	53	53	63	69	85	69	66	61	61	61	12.1	12.0	10.9	11.4	13.1	94	96	94	93	85
Idaho	53	33	41	57	76	92	93	89	89	83	16.1	20.0	17.8	20.0	13.7	92	80	62	61	61
Illinois	40	40	47	54	59	148	146	143	142	137	30.7	28.7	33.3	30.0	27.7	84	80	82	75	74
Indiana	51	49	59	69	71	129	122	122	112	114	14.5	14.5	14.7	16.6	16.1	144	137	141	132	123
Iowa	38	41	49	50	61	146	131	130	125	129	25.8	24.3	26.5	24.5	22.0	114	103	106	103	100
Kansas	33	37	36	44	51	132	124	122	124	124	26.8	24.7	26.0	26.7	24.6	119	108	101	101	102
Kentucky	61	58	62	73	76	86	85	83	81	74	15.5	16.1	14.3	13.0	13.3	91	95	104	107	100
Louisiana	53	60	77	80	91	87	85	88	77	81	16.2	15.5	18.1	16.3	16.2	71	67	68	68	64
Maine	55	56	55	74	76	151	156	152	152	151	29.4	32.1	31.1	27.3	27.5	127	127	129	127	116
Maryland	61	58	62	68	75	133	141	138	132	129	29.5	30.8	31.3	29.2	27.1	91	89	97	96	97
Massachusetts	58	61	61	71	74	176	177	171	160	160	35.0	36.4	36.5	35.1	33.3	110	106	106	103	98
Michigan	42	41	47	54	57	115	116	118	117	114	26.1	33.0	26.6	26.2	25.3	87	86	90	83	86
Montana	49	48	59	66	75	124	116	111	115	98	13.2	14.2	11.6	17.2	17.7	102	99	96	90	92
Nebraska	37	36	47	52	55	136	128	125	118	122	28.3	26.3	26.8	25.0	25.4	97	103	114	91	85
Nevada	66	50	70	82	103	102	107	115	112	102	12.5	16.8	20.8	16.6	12.2	95	67	66	67	77
New Mexico	62	57	58	84	79	52	57	58	53	53	8.8	10.8	9.4	8.6	7.2	41	42	40	39	43
New York	42	44	46	55	62	173	161	158	154	152	41.6	40.7	40.5	39.1	35.5	78	74	72	67	63
North Carolina	49	56	57	61	78	64	61	58	56	55	12.9	12.5	13.6	13.8	10.9	89	82	85	80	82
North Dakota	35	37	40	55	55	99	95	96	98	95	21.6	19.9	25.6	21.9	21.0	79	75	69	78	69
Ohio	46	44	56	60	61	137	137	135	132	128	31.0	29.0	31.2	29.2	27.0	112	105	111	108	104
Oklahoma	49	51	57	61	62	96	86	83	79	75	16.3	15.2	14.0	14.7	13.8	95	81	81	86	75
Pennsylvania	43	43	51	50	60	130	126	124	123	121	33.9	34.3	35.4	33.8	31.1	90	86	84	83	83
Rhode Island	51	44	54	57	79	151	150	157	151	155	38.8	38.1	38.7	36.9	40.4	103	88	100	88	94
South Dakota	43	40	37	55	56	114	104	105	104	91	22.6	26.7	23.9	26.7	19.6	90	85	82	76	71
Tennessee	55	62	71	71	81	78	87	74	71	73	12.9	12.4	14.0	13.4	11.1	87	80	83	81	81
Texas	42	47	53	53	69	81	80	76	68	73	12.8	13.1	13.6	11.8	11.9	65	61	62	61	69
Utah	32	31	44	45	63	95	87	91	92	85	13.9	19.6	19.6	18.3	19.9	67	61	58	54	52
Vermont	54	46	70	79	79	146	145	137	140	133	27.3	30.1	27.6	32.6	30.7	127	116	119	116	111
Virginia	57	59	70	67	72	84	83	81	80	81	18.3	19.0	20.3	17.5	16.6	102	102	104	104	97
Wyoming	41	45	39	50	63	85	86	85	75	83	15.5	12.4	14.3	16.5	13.8	61	70	66	58	57
Hawaii	44	39	46	54	75	65	77	67	71	67	16.5	20.2	14.4	16.6	16.8	46	53	44	48	55

State	Diseases of the heart (90–95)					Nephritis, all forms (130–132)					All accidents, including automobile accidents (160–195)					Automobile accidents (170a, b, c)				
	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938	1942	1941	1940	1939	1938
Colorado	277	276	250	255	236	78	79	71	73	84	93	77	91	87	89	26.2	26.3	32.7	28.6	30.6
Connecticut	308	308	299	296	255	59	61	56	76	81	56	61	55	61	72	14.4	21.6	18.0	20.7	19.8
Delaware	367	350	355	363	366	125	134	134	107	105	78	82	79	72	80	24.0	34.3	34.4	36.3	29.1
District of Columbia	283	298	347	344	342	91	102	110	105	102	66	70	72	76	65	15.0	23.2	22.2	22.8	20.7
Florida	270	285	285	244	242	81	88	89	91	91	104	110	96	93	93	26.4	39.6	36.9	36.5	39.4
Georgia	172	182	191	167	166	104	105	104	92	110	67	69	64	56	67	22.0	29.4	24.8	19.9	24.9
Idaho	269	219	243	242	203	62	62	57	53	55	98	98	101	97	88	23.1	37.9	36.4	33.7	33.5
Illinois	366	340	350	339	316	82	86	92	92	92	65	77	74	71	75	20.3	32.2	29.6	28.4	27.7
Indiana	266	269	304	250	238	82	67	74	65	65	81	90	82	72	74	28.1	40.5	33.4	29.3	31.6
Iowa	299	280	280	268	246	63	58	64	54	57	69	67	64	66	66	16.7	23.4	20.0	19.4	19.1
Kansas	301	287	275	259	247	89	96	96	97	96	79	81	75	104	107	21.3	30.5	27.2	23.1	24.6
Kentucky	233	227	216	218	188	79	78	74	66	72	69	81	78	77	66	17.9	30.7	26.0	23.0	22.0
Louisiana	231	245	251	215	201	70	84	87	91	93	47	70	68	64	66	18.1	27.8	23.2	20.3	20.7
Maine	368	378	361	377	344	88	91	88	81	84	83	82	75	72	69	19.0	26.1	23.6	22.1	22.2
Maryland	347	336	347	314	309	109	117	128	119	125	79	79	79	70	69	23.1	30.7	28.3	22.0	21.7
Massachusetts	421	432	422	407	373	62	63	70	67	69	76	67	61	63	61	13.6	18.4	15.2	15.4	15.4
Michigan	288	291	295	287	274	49	53	54	54	55	66	82	75	72	71	24.1	39.1	32.6	27.3	27.5
Montana	295	251	238	232	209	61	58	57	58	57	91	104	94	94	102	20.9	36.8	27.7	27.1	24.1
Nebraska	277	240	234	210	223	68	66	64	66	61	69	65	65	69	59	17.7	21.1	19.9	21.3	17.4
Nevada	339	283	310	264	267	56	49	59	41	72	212	217	173	200	135	84.3	95.6	76.8	69.9	56.2
New Mexico	127	119	116	109	113	48	50	47	44	51	87	102	88	85	80	31.3	42.8	39.8	38.6	28.9
New York	418	396	384	367	356	59	60	66	66	69	62	64	62	62	63	16.4	20.0	18.0	17.8	18.3
North Carolina	170	166	152	162	164	84	87	96	82	88	69	74	65	65	63	24.9	38.0	27.5	26.2	25.1
North Dakota	188	209	206	206	160	45	47	44	41	44	48	65	54	52	56	16.0	19.3	18.1	14.4	14.0
Ohio	324	313	315	298	277	77	73	77	76	76	81	89	87	83	81	26.1	35.2	29.7	27.7	27.4
Oklahoma	204	189	162	152	140	58	58	62	55	62	73	64	57	82	73	17.1	22.8	19.7	22.2	23.8
Pennsylvania	353	338	335	324	313	87	84	94	82	83	53	58	57	55	60	15.4	19.6	17.2	16.7	17.6
Rhode Island	385	378	373	363	353	84	98	98	96	102	59	56	51	51	91	11.0	12.4	12.2	10.9	11.3
South Dakota	230	217	207	201	172	52	57	48	43	41	68	76	65	55	66	15.1	25.5	19.5	21.5	21.4
Tennessee	183	179	187	174	163	61	66	65	60	64	60	66	62	62	62	17.4	24.2	18.6	19.4	19.8
Texas	191	189	179	166	119	60	63	58	53	56	71	72	69	62	72	21.4	30.7	27.0	23.3	28.3
Utah	254	244	246	233	224	54	51	50	54	52	93	86	84	79	94	29.8	38.0	33.4	29.8	39.8
Vermont	372	366	332	360	302	78	83	77	80	81	51	64	61	66	69	12.8	22.7	19.2	22.0	20.6
Virginia	237	249	248	246	237	85	98	105	85	84	79	92	83	74	71	24.5	39.0	31.1	30.2	25.2
Wyoming	240	228	201	209	207	66	67	53	70	55	114	119	106	113	109	32.8	51.8	53.7	47.4	39.4
Hawaii	134	135	129	126	127	59	53	67	65	63	107	69	55	48	59	21.8	19.8	13.9	14.2	18.3

In the past these preliminary reports have provided an early index of the trend of mortality for the country as a whole. While some deviation from the final figures for individual States may be expected, it is believed that trends of mortality within each State are reasonably accurate. Comparisons of specific causes of death among the States are subject to error because of differences in classification and tabulation procedures and in the completeness of these prompt reports. Such comparisons should be made from final figures published by the Bureau of the Census.

Populations of the different States used in computing rates were as follows: 1940—total U. S. Census enumerated population as of April 1, 1940; 1938 and 1939—official U. S. Census Bureau estimates of total population as of July 1 of each year, based on 1930 and 1940 census enumerations; 1942—official U. S. Census Bureau estimates of civilian population, based on sugar rationing data; 1941—mean of the above populations for 1940 and 1942. Although deaths in the armed forces in the continental United States are presumably included in these provisional data, it was not possible to include soldiers in the 1942 estimates of population; in 1940 the military population was negligible. With the extensive internal migration that has taken place since 1940, it seemed better to use the 1942 estimates even though they excluded the military populations.

GENERAL, INFANT, AND MATERNAL MORTALITY AND THE BIRTH RATE

For the year as a whole the death rate for 1942 was the same as in 1941—in fact, the rate was 10.5 per 1,000 for all 5 years included in table 2, except 1940 when it was 10.6. Of the 35 States included, 17 had a lower death rate in 1942 than in 1940, 17 had a higher rate, and in 1 State the rate was the same. Considered by quarters (table 3), the death rate from all causes in the first quarter of 1942 was below the same quarter of the two preceding years; in the second and third quarters the rates for 1942 were the same as in 1941; but in the fourth quarter the rate for 1942 was definitely above both 1941 and 1940.

It should be remembered in considering present mortality trends that a large number of healthy males of ages having low mortality rates are being withdrawn from the civilian population. This withdrawal of the young means that a larger percentage of the remaining population is in the older ages; therefore, the crude death rates for all ages may be increased without corresponding increases in the age specific death rates.

The infant mortality rate of 44 per 1,000 live births in 1942 was the lowest on record and represents a decline of more than 10 percent during the past 5 years. Twenty-seven of the 33 States reporting on infant mortality had lower rates in 1942 than in 1941.

The maternal mortality rate declined for the thirteenth consecutive year; the rate for 1942, 2.7 per 1,000 live births, was about 10 percent below the level of 1941, and 36 percent below the rate of 4.2 for 1938. Twenty-three of the 33 States reporting on maternal mortality had lower rates in 1942 than in 1941. The continuous decline since 1930 is in contrast to the two preceding decades during which there was little or no decrease in maternal mortality in the United States.

The birth rate was relatively high during 1942, 19.5 per 1,000 total population. With the exception of a slight drop in 1939, the birth rate has increased in every year since 1936. The rate for 1942 represents an increase of approximately 17 percent since 1936. Thirty-two of the 33 States reporting on births had higher rates in 1942 than in 1941. The greatest increases occurred in the southern and southwestern States.

DISEASES WITH LOWER DEATH RATES IN 1942 THAN IN 1941

For the following diseases the provisional mortality rates for the 35 reporting States were not only lower than in 1941 but were the lowest in the past 5 years: typhoid and paratyphoid fever, diarrhea and enteritis under 2 years, diphtheria, scarlet fever, influenza, pneumonia, whooping cough, and tuberculosis. The measles rate was lower in 1942 than in 1941, but was higher than in 1939 and 1940, while for poliomyelitis and encephalitis the rates were the lowest in 3 years.

When considered by quarters, some of the diseases that showed decreases for the year as a whole did not show decreases for every quarter. Tuberculosis was lower in each quarter of 1942 than in 1940 but in the last quarter of 1942 it was slightly higher than in the last quarter of 1941. While the increase was small, it represents a situation which should be watched. Quarterly rates for other causes may be seen in table 3.

There was a slight increase in deaths from influenza during the last quarter of 1942 over the corresponding period in 1941, but no epidemic of this disease was manifest during the year; the annual death rate (8.2 per 100,000 population) was the lowest on record since 1914. The annual pneumonia rate varied only about 2 percent from that of 1941, but it represented the lowest mortality from this disease in the 5 years included in table 1. The pneumonia rate in the first quarter of 1942 was well below the first quarter of the two preceding years; the second and third quarters were approximately the same as in the same quarters of 1941; but the rate in the last quarter of 1942 was well above that for 1941. As noted in connection with influenza, no epidemic situations were manifest during the year. Each of the 35 States reported a lower rate from influenza in 1942 than in 1941; 16 States reported a lower rate

from pneumonia in 1942 than in 1941, 16 a higher rate, and in 3 States the rate was the same in the two years.

Other diseases with relatively low death rates in 1942 were dysentery, malaria, pellagra and syphilis.

DISEASES WITH HIGHER DEATH RATES IN 1942 THAN IN 1941

The principal diseases for which a higher mortality rate was reported in 1942 than in 1941 were cancer, diseases of the heart, cerebral hemorrhage, and diabetes. In addition there was a rather sharp rise in the number of cases of meningococcus meningitis during the month of December which no doubt is responsible for the relatively high mortality rate from that disease. The increases in the death rates from meningococcus meningitis were from widely scattered areas. Of the 35 States included in this report, 18 reported an increase in 1942 over the 1941 death rate, 13 a decrease, and in 4 States the rate was the same as in 1941.

The other diseases with higher rates in 1942 are primarily diseases of adult life and old age, and part of the increased mortality is due to the aging population. Of the 4 diseases, cerebral hemorrhage increased about 5 percent, but heart disease, cancer, and diabetes increased less than 3 percent over 1941.

ACCIDENTAL DEATH RATES

The mortality from all accidents, including automobile accidents, was about 7 percent lower in 1942 than in 1941, but for automobile accidents alone the rate declined almost 30 percent. The automobile death rate was lower in 1942 than in 1941 in every one of the 35 States. A decrease in the number of fatalities from automobile accidents was anticipated in 1942 since the rationing of gasoline and tires was in effect during a considerable part of the year. Considering accidents other than automobile, the death rate for 1942 was higher than in any of the 5 years included in the table.

DEATHS DURING WEEK ENDED APRIL 24, 1943

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Apr. 24, 1943	Corresponding week, 1942
Data for 90 large cities of the United States:		
Total deaths	9,338	8,348
Average for 3 prior years	8,418	
Total deaths, first 16 weeks of year	160,113	146,156
Deaths under 1 year of age	625	565
Average for 3 prior years	541	
Deaths under 1 year of age, first 16 weeks of year	11,122	9,156
Data from industrial insurance companies:		
Policies in force	65,493,588	64,965,053
Number of death claims	12,121	12,361
Death claims per 1,000 policies in force, annual rate	9.7	9.9
Death claims per 1,000 policies, first 16 weeks of year, annual rate	10.6	10.2

PREVALENCE OF DISEASE

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

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED MAY 1, 1943

Summary

Reports for the current week show totals above the preceding week's figures for all of the nine common communicable diseases included in the following tables except influenza. However, the increases are slight, totals for most of the diseases remaining below or only slightly above the corresponding 5-year (1938–42) medians.

The total number of meningococcus meningitis cases reported for the current week is 591, as compared (after reallocation of delayed reports) with 569 for the preceding week and an average of 598 for the past 3 weeks. Increases over the preceding week's figures were shown in the Middle Atlantic, East and West North Central, and the South Atlantic groups of States; in the New England group the number was the same as for the preceding week (64); and decreases were recorded in the 4 other areas. As compared with the averages for the preceding 3 weeks, decreases were shown in all areas except the Middle Atlantic and East North Central groups. States reporting 20 or more cases for the current week (last week's figures in parentheses) were as follows: New York, 76 (76); New Jersey, 47 (23); Pennsylvania, 36 (29); California, 34 (48); Massachusetts, 30 (27); Illinois, 29 (22); Virginia, 26 (24); Michigan, 23 (38); Missouri, 22 (14); Maryland, 22 (20); Texas, 21 (3). The peak of incidence of this disease was recorded as late as in May only twice in the past 16 years (1928 and 1935, with totals for the peak weeks, respectively, of 187 and 179). A total of 8,212 cases has been reported to date this year.

A total of 97 cases of typhoid and paratyphoid fevers, including 32 cases of paratyphoid fever in Massachusetts, was reported for the current week, as compared with 80 for the preceding week and a 5-year median of 91. Poliomyelitis cases totaled 28 (including 7 in California and 5 in Texas), as compared with 23 last week and a 5-year median of 17. Of 35 cases of smallpox, 13 occurred in Ohio. One case of psittacosis was reported in Pennsylvania.

Deaths recorded for the week in 90 large cities of the United States aggregated 9,986, as compared with 9,338 for the preceding week and a 3-year (1940–42) average of 8,495. The accumulated total for the first 17 weeks of the year is 170,099, as compared with 154,794 for the same period of last year.

Telegraphic morbidity reports from State health officers for the week ended May 1, 1943, and comparison with corresponding week of 1942 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median 1938–42	Week ended		Median 1938–42	Week ended		Median 1938–42	Week ended		Median 1938–42
	May 1, 1943	May 2, 1942		May 1, 1943	May 2, 1942		May 1, 1943	May 2, 1942		May 1, 1943	May 2, 1942	
NEW ENG.												
Maine	0	1	1	1	1	1	24	148	148	7	3	1
New Hampshire	3	0	0	------	------	------	54	22	22	1	2	0
Vermont	0	0	0	------	------	------	278	134	84	3	0	0
Massachusetts	4	3	3	------	------	------	1,688	1,559	1,028	30	5	2
Rhode Island	0	1	1	------	------	------	4	323	26	12	1	0
Connecticut	1	0	0	------	------	3	481	447	380	11	2	0
MID. ATL.												
New York	20	20	20	[1]8	[1]7	[1]15	3,145	611	1,705	76	18	4
New Jersey	4	5	6	13	5	7	2,485	817	817	47	1	1
Pennsylvania	18	7	28	2	------	------	2,010	1,297	1,297	36	6	6
E. NO. CEN.												
Ohio	10	4	8	19	7	7	568	380	380	17	1	1
Indiana	6	3	8	2	11	16	688	148	148	12	0	0
Illinois	22	23	23	13	4	12	1,900	620	620	29	1	2
Michigan [2]	7	1	2	1	------	14	2,603	438	674	23	0	0
Wisconsin	1	0	1	26	52	52	1,703	1,183	1,193	15	1	1
W. NO. CEN.												
Minnesota	3	1	2	4	1	2	322	1,015	212	6	0	0
Iowa	2	7	3	------	1	1	334	273	268	1	0	0
Missouri	1	1	2	3	3	4	276	473	420	22	2	2
North Dakota	0	3	1	4	7	9	67	42	45	1	0	0
South Dakota	0	0	0	------	------	1	104	20	14	0	0	1
Nebraska	1	7	3	7	13	------	270	363	137	1	0	0
Kansas	3	3	6	2	1	7	532	616	616	8	0	0
SO. ATL.												
Delaware	0	0	0	------	------	------	110	13	13	3	1	0
Maryland [2]	6	4	3	10	3	8	327	489	348	22	7	1
Dist. of Col	0	0	3	1	------	------	132	84	84	5	4	0
Virginia	2	5	9	221	162	175	381	180	423	26	1	1
West Virginia	0	2	7	9	14	20	133	78	78	5	2	2
North Carolina	4	5	5	7	38	14	321	686	716	15	1	1
South Carolina	4	3	4	387	291	291	63	150	150	13	1	1
Georgia	1	10	6	29	29	29	352	211	211	7	0	0
Florida	3	2	4	15	1	8	67	363	259	7	0	0
E. SO. CEN.												
Kentucky	2	6	6	8	1	5	309	142	142	16	2	2
Tennessee	2	2	3	29	51	60	376	168	168	7	4	2
Alabama	7	2	8	149	65	65	141	263	263	8	4	3
Mississippi [2]	5	3	5	------	------	------	------	------	------	7	0	0
W. SO. CEN.												
Arkansas	4	4	4	39	44	92	152	133	133	[3]20	1	1
Louisiana	1	5	8	1	3	11	48	320	67	2	1	0
Oklahoma	8	2	2	32	46	76	42	242	184	2	0	1
Texas	20	24	24	721	544	544	739	1,720	1,260	21	4	2
MOUNTAIN												
Montana	2	2	2	22	1	4	197	158	49	0	0	0
Idaho	0	0	0	2	------	1	209	28	29	4	0	0
Wyoming	0	0	2	2	116	------	187	86	52	0	0	0
Colorado	12	8	9	27	22	14	748	308	356	4	0	0
New Mexico	0	5	1	5	------	------	12	72	72	0	0	0
Arizona	0	0	1	88	89	73	83	178	89	3	0	0
Utah [2]	0	0	1	5	5	7	154	1,446	334	5	0	0
Nevada	0	0	------	------	------	------	33	0	------	0	0	------
PACIFIC												
Washington	6	1	1	3	2	------	458	318	318	8	2	0
Oregon	4	0	2	35	17	17	362	190	190	9	0	0
California	15	6	18	80	84	81	854	6,524	812	34	2	1
Total	214	191	247	2,032	1,741	1,741	26,526	25,479	25,479	[3]611	80	56
17 weeks	4,554	4,878	5,970	68,336	71,036	138,406	314,834	305,155	305,155	[3]8,212	1,311	854

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended May 1, 1943, and comparison with corresponding week of 1942 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median, 1938–42	Week ended		Median, 1938–42	Week ended		Median, 1938–42	Week ended		Median 1938–42
	May 1, 1943	May 2, 1942		May 1, 1943	May 2, 1942		May 1, 1943	May 2, 1942		May 1, 1943	May 2, 1942	
NEW ENG.												
Maine	0	1	0	23	18	10	0	0	0	0	0	0
New Hampshire	0	0	0	7	17	2	0	0	0	0	0	0
Vermont	0	0	0	6	2	13	0	0	0	0	2	0
Massachusetts	0	0	0	547	326	222	0	0	0	32	0	2
Rhode Island	0	0	0	39	19	15	0	0	0	0	0	0
Connecticut	0	0	0	124	36	93	0	0	0	0	0	1
MID. ATL.												
New York	3	0	0	595	478	538	0	0	0	4	8	8
New Jersey	0	0	0	173	153	236	0	0	0	0	0	1
Pennsylvania	2	0	1	282	513	393	0	0	0	3	3	7
E. NO. CEN.												
Ohio	0	0	1	317	283	340	13	0	0	1	5	3
Indiana	1	0	0	127	90	118	3	1	3	2	0	1
Illinois	3	0	0	239	191	483	2	1	3	0	2	3
Michigan [3]	0	0	0	133	148	326	0	0	4	1	2	3
Wisconsin	0	0	1	366	171	171	1	1	2	0	0	2
W. NO. CEN.												
Minnesota	0	1	0	48	72	72	0	0	3	0	1	1
Iowa	0	0	0	44	40	66	1	1	26	0	2	2
Missouri	0	0	0	48	87	87	0	1	8	5	1	1
North Dakota	0	0	0	3	9	12	0	0	3	0	0	0
South Dakota	0	0	0	8	18	15	0	0	0	0	0	0
Nebraska	0	0	0	32	19	19	2	0	0	0	0	0
Kansas	1	0	0	53	75	75	1	0	0	0	1	1
SO. ATL.												
Delaware	0	0	0	6	32	14	0	0	0	0	0	0
Maryland [2]	0	0	0	164	96	48	0	0	0	3	3	1
Dist. of Col	0	0	0	20	13	18	0	0	0	0	1	0
Virginia	0	1	1	57	17	30	0	0	0	2	3	3
West Virginia	0	0	0	26	24	39	0	0	0	3	4	2
North Carolina	0	0	0	25	19	23	0	1	1	2	2	2
South Carolina	0	0	0	9	1	1	0	0	0	1	1	2
Georgia	0	2	2	12	15	6	0	1	0	2	8	3
Florida	0	0	0	10	5	6	0	0	0	2	6	1
E. SO. CEN.												
Kentucky	2	1	0	49	54	54	0	0	1	1	9	3
Tennessee	0	1	0	27	44	53	0	2	2	1	3	2
Alabama	1	2	2	2	13	12	1	1	1	1	0	2
Mississippi [3]	0	2	0	7	0	5	2	0	0	3	1	4
W. SO. CEN.												
Arkansas	0	0	0	24	1	6	0	2	3	1	1	1
Louisiana	0	0	0	9	4	5	0	1	1	1	7	8
Oklahoma	0	0	0	15	5	12	0	2	2	0	0	0
Texas	5	3	2	62	27	37	4	0	4	8	6	6
MOUNTAIN												
Montana	0	0	0	5	18	18	0	0	1	0	0	0
Idaho	0	0	0	42	0	7	0	0	0	1	0	1
Wyoming	0	0	0	29	5	5	0	0	0	0	1	0
Colorado	0	0	0	84	12	34	4	0	0	13	0	0
New Mexico	0	0	0	7	6	11	0	0	0	0	0	0
Arizona	1	0	0	4	2	8	0	0	0	0	0	1
Utah [3]	1	0	0	19	11	13	0	0	1	0	0	0
Nevada	0	0	-----	0	0	-----	0	0	----	0	0	-----
PACIFIC												
Washington	1	0	0	44	32	35	0	0	1	1	0	0
Oregon	0	0	0	16	6	13	1	0	6	2	1	1
California	7	1	1	116	107	145	0	0	6	1	3	5
Total	28	15	17	4,104	3,334	4,386	35	15	76	97	87	91
17 weeks	429	358	358	67,902	66,364	81,757	459	377	1,237	979	1,303	1,346

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended May 1, 1943, and comparison with corresponding week of 1942 and 5-year median—Continued

Division and State	Whooping cough			Week ended May 1, 1943								
	Week ended		Median 1938–42	Anthrax	Dysentery			Encephalitis, infectious	Leprosy	Rocky Mt. spotted fever	Tularemia	Typhus fever
	May 1, 1943	May 2, 1942			Amebic	Bacillary	Unspecified					
NEW ENG.												
Maine	48	17	19	0	0	0	0	0	0	0	0	0
New Hampshire	2	0	0	0	0	0	0	0	0	0	0	0
Vermont	23	37	23	0	0	0	0	0	0	0	0	0
Massachusetts	140	240	215	1	0	2	0	4	0	0	0	0
Rhode Island	28	39	20	0	0	0	0	0	0	0	0	0
Connecticut	50	83	70	0	1	0	0	0	0	0	0	0
MID. ATL.												
New York	190	499	486	0	6	23	0	0	0	0	0	0
New Jersey	187	350	211	0	0	0	0	0	0	0	0	0
Pennsylvania	243	246	246	0	0	0	0	0	0	0	0	0
E. NO. CEN.												
Ohio	190	171	229	0	0	0	0	0	0	0	0	0
Indiana	95	83	39	0	0	0	0	0	0	0	0	0
Illinois	126	217	126	0	0	0	0	2	0	0	0	0
Michigan [2]	227	150	196	0	0	2	0	0	0	0	0	0
Wisconsin	209	197	170	0	0	0	0	2	0	0	0	0
W. NO. CEN.												
Minnesota	104	40	44	0	1	0	0	0	0	0	0	0
Iowa	51	16	28	0	0	0	0	0	0	0	0	0
Missouri	24	16	16	0	0	0	0	0	0	0	0	0
North Dakota	1	3	16	0	0	0	0	0	0	0	0	0
South Dakota	8	0	4	0	0	0	0	0	0	0	0	0
Nebraska	22	3	16	0	0	0	0	0	0	0	0	0
Kansas	77	41	43	0	0	0	0	0	0	0	0	0
SO. ATL.												
Delaware	1	1	6	0	0	0	0	0	0	0	0	0
Maryland [2]	123	45	61	0	0	0	0	1	0	0	1	0
Dist. of Col	33	27	22	0	0	0	0	0	0	0	0	0
Virginia	104	52	79	0	1	0	24	1	0	0	0	0
West Virginia	48	14	35	0	0	0	0	0	0	0	0	0
North Carolina	185	105	293	0	0	0	0	0	0	0	1	0
South Carolina	58	81	84	0	0	6	0	0	0	0	0	1
Georgia	50	32	28	0	1	2	0	0	0	0	2	9
Florida	44	30	30	0	1	0	0	0	0	0	0	2
E. SO. CEN.												
Kentucky	22	91	91	0	0	0	0	0	0	0	0	0
Tennessee	69	42	42	0	0	0	3	0	0	0	1	0
Alabama	66	16	39	0	0	0	0	1	0	0	1	6
Mississippi [2]	----	----	----	0	0	0	0	0	0	0	1	1
W. SO. CEN.												
Arkansas	39	13	33	0	1	13	0	0	0	0	0	0
Louisiana	6	12	12	0	2	0	0	0	0	0	0	3
Oklahoma	36	58	37	0	0	0	0	0	0	0	0	0
Texas	602	213	318	1	22	119	0	1	0	1	0	10
MOUNTAIN												
Montana	5	14	14	0	0	0	0	0	0	1	7	0
Idaho	1	0	7	0	0	0	0	0	0	0	0	0
Wyoming	0	19	3	0	1	0	0	0	0	4	1	0
Colorado	35	22	47	0	0	0	0	1	0	1	0	0
New Mexico	39	33	33	0	0	0	0	0	0	1	0	0
Arizona	19	24	31	0	0	0	26	0	0	0	0	0
Utah [3]	72	22	57	0	0	0	0	0	0	0	0	0
Nevada	0	0	----	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington	45	56	81	0	0	0	0	0	0	0	0	0
Oregon	14	44	20	0	0	0	0	0	0	1	0	0
California	320	375	455	0	1	2	0	0	0	0	0	0
Total	4,081	3,889	3,889	2	38	169	53	13	0	9	15	32
17 weeks	68,264	65,384	69,070	25	510	3,288	782	189	8	26	284	788

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Delayed report of 20 cases in Arkansas for week ended Apr. 24, 1943, included.

WEEKLY REPORTS FROM CITIES

City reports for week ended April 17, 1943

This table lists the reports from 85 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENG.												
Maine:												
Portland	0	0	------	0	4	0	0	0	2	0	0	7
New Hampshire:												
Concord	0	0	------	0	4	0	1	1	0	0	0	0
Vermont:												
Barre	0	0	------	0	1	0	0	0	1	0	0	0
Massachusetts:												
Boston	0	0	------	0	206	18	31	1	203	0	0	26
Fall River	0	0	------	0	123	0	0	0	2	0	0	6
Springfield	0	0	------	0	5	1	2	0	75	0	0	0
Worcester	0	0	------	0	349	1	15	0	12	0	1	7
Rhode Island:												
Providence	0	0	1	1	2	6	3	0	13	0	0	43
Connecticut:												
Bridgeport	0	1	------	0	2	2	3	0	7	0	0	1
Hartford	0	0	------	0	22	1	12	0	4	0	0	0
New Haven	0	0	1	0	5	2	0	0	5	0	0	5
MID ATL.												
New York:												
Buffalo	0	0	------	2	98	2	11	0	16	0	0	18
New York	33	0	17	3	852	48	114	0	426	0	0	80
Rochester	0	0	------	0	98	3	2	0	8	0	0	21
Syracuse	0	0	------	1	84	0	7	0	4	0	0	9
New Jersey:												
Camden	1	0	2	1	10	0	1	0	5	0	0	1
Newark	0	0	2	1	348	3	15	0	9	0	0	24
Trenton	0	0	------	0	91	0	2	0	6	0	0	1
Pennsylvania:												
Philadelphia	3	0	------	0	351	17	29	0	129	0	4	73
Pittsburgh	0	0	------	1	25	5	13	0	10	0	0	34
Reading	0	0	1	0	217	0	2	0	2	0	0	6
E. NO. CEN.												
Ohio:												
Cincinnati	0	0	------	0	85	1	3	0	30	0	0	4
Cleveland	1	0	2	1	18	5	10	0	66	0	0	51
Columbus	0	0	1	1	52	0	0	0	17	0	0	3
Indiana:												
Fort Wayne	1	0	------	2	8	1	4	0	8	0	0	1
Indianapolis	4	0	------	2	232	5	6	0	23	0	0	29
South Bend	0	0	------	0	5	0	0	0	1	0	0	3
Terre Haute	0	0	------	0	9	0	3	0	2	0	0	1
Illinois:												
Chicago	28	0	2	0	956	9	29	0	96	0	2	61
Springfield	0	0	------	0	14	0	3	0	1	0	0	1
Michigan:												
Detroit	2	0	------	0	1,188	19	13	0	33	0	2	101
Flint	0	0	------	0	41	0	3	0	2	0	0	14
Grand Rapids	0	0	------	1	9	0	4	0	4	0	0	12
Wisconsin:												
Kenosha	0	0	------	0	1	0	0	0	5	0	0	2
Milwaukee	0	0	1	1	491	0	4	0	197	0	0	61
Racine	1	0	------	0	7	0	1	0	29	0	0	1
Superior	0	0	------	0	3	0	0	0	2	0	0	2
W. NO. CEN.												
Minnesota:												
Duluth	0	0	------	0	2	0	6	0	3	0	0	0
Minneapolis	2	0	------	0	98	2	4	0	33	0	0	21
St. Paul	0	0	------	0	5	0	8	0	5	0	0	44
Missouri:												
Kansas City	0	0	------	0	74	4	10	1	38	0	0	1
St. Joseph	0	0	------	1	2	0	2	0	0	0	0	1
St. Louis	0	0	2	2	50	9	18	0	11	0	0	14
Nebraska:												
Omaha	0	0	------	0	8	1	2	0	8	0	0	1
Kansas:												
Topeka	0	0	------	0	236	0	0	0	2	0	0	23
Wichita	1	0	------	0	170	0	6	0	0	0	0	10

City reports for week ended April 17, 1943—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
SO. ATL.												
Delaware:												
Wilmington	0	0	------	0	13	4	2	0	0	0	0	1
Maryland:												
Baltimore	0	0	2	2	110	8	16	0	71	0	0	90
Cumberland	0	0	------	0	0	0	1	0	0	0	0	0
Frederick	0	0	------	0	4	0	0	0	0	0	0	0
Dist. of Col.:												
Washington	0	0	1	1	83	2	15	0	16	0	1	28
Virginia:												
Lynchburg	0	0	------	1	6	0	0	0	0	0	1	8
Richmond	0	0	2	1	15	4	5	0	5	0	0	0
Roanoke	0	0	------	0	0	0	1	0	0	0	0	0
West Virginia:												
Wheeling	0	0	------	0	54	0	3	0	5	0	0	4
North Carolina:												
Wilmington	0	0	------	0	33	4	3	0	0	0	0	10
Winston-Salem	0	0	------	0	0	0	4	0	2	0	0	11
South Carolina:												
Charleston	0	0	18	0	1	1	0	0	1	0	0	2
Georgia:												
Atlanta	1	0	13	0	31	0	9	0	5	0	0	7
Brunswick	0	0	------	0	2	0	2	0	0	0	0	3
Savannah	0	0	3	1	2	1	0	0	0	0	0	2
Florida:												
Tampa	0	0	1	1	5	0	2	0	2	0	0	0
E. SO. CEN.												
Tennessee:												
Memphis	0	0	5	3	171	3	2	0	4	0	0	10
Nashville	0	0	------	1	40		4	0	2	0	0	4
Alabama:												
Birmingham	1	0	5	1	10	0	6	1	1	0	0	1
Mobile	1	0	1	1	3	0	1	0	1	0	0	0
W. SO. CEN.												
Arkansas:												
Little Rock	0	0	4	0	10	0	2	0	0	0	0	1
Louisiana:												
New Orleans	1	0	4	2	42	1	5	0	5	0	1	4
Shreveport	0	0	------	0	0	1	1	0	2	0	0	0
Texas:												
Dallas	1	0	------	0	3	2	2	0	0	0	0	11
Galveston	0	0	------	0	1	0	1	0	1	0	0	0
Houston	2	0	------	0	10	1	9	1	1	0	0	11
San Antonio	2	0	6	4	6	0	2	0	0	0	0	1
MOUNTAIN												
Montana:												
Billings	0	0	------	0	0	0	0	0	2	0	0	0
Great Falls	0	0	------	0	28	0	2	0	0	0	0	2
Missoula	0	0	------	0	10	0	2	0	0	0	0	0
Idaho:												
Boise	0	0	------	0	4	0	0	0	0	1	0	0
Colorado:												
Denver	3	0	13	0	495	3	4	0	7	0	0	2
Pueblo	0	0	------	0	9	1	6	0	2	0	0	9
Utah:												
Salt Lake City	0	0	------	0	94	1	0	0	4	0	0	36
PACIFIC												
Washington:												
Seattle	1	0	------	2	176	0	3	0	3	0	0	11
Spokane	0	0	------	0	114	0	1	0	0	0	0	1
California:												
Los Angeles	2	0	14	3	121	10	10	3	24	0	0	35
Sacramento	1	0	------	0	11	3	2	0	3	0	0	4
San Francisco	0	0	2	0	94	2	6	0	17	0	0	44
Total	93	1	126	45	8,472	217	530	8	1,741	1	12	1,177
Corresponding week, 1942	60	4	133	34	6,294	41	469	20	1,407	2	17	1,168
Average, 1938–42	76	------	215	[1] 38	[2] 6,000	------	[1] 442	------	1,620	10	19	1,038

Anthrax.—Cases: Philadelphia, 1.
Dysentery, amebic.—Cases: New York, 18; Rochester, 1; Detroit, 1.
Dysentery, bacillary.—Cases: New York, 1; St. Louis, 2; Charleston, S. C., 1; Missoula, 2; Los Angeles, 2.
Dysentery, unspecified.—Cases: San Antonio, 7.
Typhus fever.—Cases: Savannah, 1; New Orleans, 2; Houston, 1; San Antonio, 1.

[1] 3-year average, 1940–42.
[2] 5-year median.

Rates (annual basis) per 100,000 population, by geographic groups, for the 85 cities in the preceding table (estimated population, 1942, 34,498,400)

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
New England	0.0	2.5	5.0	2.5	1,796	77.0	166.0	5.0	805	0	2.5	236
Middle Atlantic	16.5	0	9.8	4.0	970	34.8	87.4	0	274	0	1.8	119
East North Central	21.6	0	3.5	4.7	1,821	23.3	48.5	0	301	0	2.3	203
West North Central	5.9	0	4.0	5.9	1,276	31.6	110.8	2.0	198	0	0	227
South Atlantic	1.8	0	70.0	12.3	628	42.0	110.3	0	187	0	3.5	291
East South Central	11.9	0	65.3	35.6	1,330	17.8	77.2	5.9	48	0	0	89
West South Central	17.6	0	41.1	17.6	211	14.7	64.5	2.9	26	0	2.9	82
Mountain	24.6	0	106.7	0	5,254	41.0	65.7	0	123.	8.2	0	402
Pacific	7.3	0	29.0	9.1	937	27.2	39.9	5.4	85	0	0	172
Total	14.1	0.2	19.0	6.8	1.281	32.8	80.1	1.2	263	0.2	1.8	178

PLAGUE INFECTION IN CALIFORNIA AND WASHINGTON

Plague infection has been reported proved in specimens of tissue and pools of fleas from rodents in California and Washington as follows:

CALIFORNIA

Monterey County.—In pools of fleas and tissue from rodents collected on the Field Ranch, in Fort Ord Military Reservation, 12 miles southwest of Salinas, Monterey County, Calif., as follows: March 15, 186 fleas from 3 ground squirrels, *C. beecheyi;* March 18, 37 fleas from 16 meadow mice, *Microtus californicus;* March 19, 52 fleas from 27 mice, *Microtus californicus*, and 4 mice, *Peromyscus* sp.; and March 24–29, 83 fleas from 40 mice; 2 pools of organs, proved separately, from 2 lots of 10 mice each; 100 fleas from 47 mice; 65 fleas from 46 mice; and 40 fleas from 47 mice, all *Microtus* sp.; April 10, in organs from 10 mice, *Microtus* sp., collected in Fort Ord Military Reservation, Area C–2.

WASHINGTON

Pierce County.—Tacoma: In pools of fleas and tissue from rats, *R. norvegicus*, collected in frame buildings in industrial districts of Tacoma, Pierce County, Wash., as follows: April 5, in a pool of 38 fleas from 32 rats; and April 13, in tissue from 3 rats.

TERRITORIES AND POSSESSIONS

Hawaii Territory

Plague (rodent).—During the week ended April 10, 1943, a rat proved positive for plague was reported in Paauhau area, Hamakua District, Island of Hawaii, T. H.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended April 3, 1943.—During the week ended April 3, 1943, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		18		85	211	37	28	24	48	451
Diphtheria		16	1	21	1	4	5			48
Dysentery (bacillary)				8						8
Encephalitis, infectious								1		1
German measles		3		18	78	3		8	14	124
Influenza		24	19		14	7	16		267	347
Measles		77	8	425	860	90	239	124	131	1,954
Meningitis, meningococcus	1			1	4	4	1			11
Mumps	2	135	4	65	1,437	147	109	134	178	2,211
Scarlet fever		13	53	98	283	32	59	32	23	593
Tuberculosis (all forms)	2	15	18	90	69	6		7	23	230
Typhoid fever and paratyphoid fever			1	33	1	1				36
Undulant fever				8						8
Whooping cough			1	127	243	73	4	33	26	507

CUBA

Habana—Communicable diseases—4 weeks ended April 3, 1943.—During the 4 weeks ended April 3, 1943, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	29	3	Tetanus	2	2
Malaria	2		Tuberculosis	4	
Measles	17		Typhoid fever	39	4
Scarlet fever	2				

Provinces—Notifiable diseases—4 weeks ended March 27, 1943.—During the 4 weeks ended March 27, 1943, cases of certain notifiable diseases were reported in the Provinces of Cuba, as follows:

Disease	Pinar del Rio	Habana[1]	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer		2	6	16		8	32
Chickenpox	1			1	3	26	31
Diphtheria		29	1			3	33
Hookworm disease		9					9
Leprosy		2	1			5	8
Malaria	5	2		24		223	254
Measles		20		3		3	26
Poliomyelitis	1	1		6	3		11
Scarlet fever		3	1			1	5
Tetanus, infantile				1			1
Tuberculosis	19	14	23	50	13	49	168
Typhoid fever	9	52	8	39	8	19	135

[1] Includes the city of Habana.

JAMAICA

Notifiable diseases—4 weeks ended April 10, 1943.—During the 4 weeks ended April 10, 1943, cases of certain notifiable diseases were reported in Kingston, Jamaica, and in the island outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis		1	Erysipelas		1
Chickenpox	12	14	Leprosy		4
Diphtheria	3	1	Tuberculosis	27	75
Dysentery		2	Typhoid fever	4	45

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

NOTE.—Except in cases of unusual prevalence, only those places are included which had not previously reported any of the above-named diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A cumulative table showing the reported prevalence of these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday of each month.

(Few reports are available from the invaded countries of Europe and other nations in war zones.)

Plague

British East Africa—Uganda Protectorate.—Plague has been reported in Uganda Protectorate, British East Africa, as follows: Week ended March 13, 1943, 3 cases, 3 deaths; week ended March 20, 1943, 3 cases, 3 deaths.

Smallpox

Indochina.—For the period March 21–31, 1943, 432 cases of smallpox were reported in Indochina.

Typhus Fever

Algeria.—For the period March 21–31, 1943, 532 cases of typhus fever were reported in Algeria, including 59 cases in Algiers, 21 cases in Bone, and 18 cases in Mostaganem.

Hungary.—During the week ended April 10, 1943, 30 cases of typhus fever were reported in Hungary.

Iraq.—Typhus fever (endemic and epidemic) has been reported in Iraq as follows: Weeks ended March 13, 1943, 44 cases, 2 deaths; March 20, 49 cases, 2 deaths; March 27, 60 cases, 3 deaths; April 3, 92 cases, 5 deaths. In Basra Liwa, a total of 125 cases of typhus fever, with 11 deaths from the same cause, was reported for the period January 24 to April 17, inclusive, all but 1 case of which was of the endemic type.

Irish Free State—Leitrim County.—During the week ended April 3, 1943, 9 cases of typhus fever were reported in Leitrim County, Irish Free State. During the preceding week 7 cases of typhus fever were reported in the same county.

Rumania.—For the period April 8–15, 1943, 360 cases of typhus fever were reported in Rumania.

Spain.—For the week ended March 6, 1943, 11 cases of typhus fever were reported in Spain.

COURT DECISIONS ON PUBLIC HEALTH

Garbage—granting by city of exclusive right of removal and disposal.—(Texas Court of Civil Appeals; *City of Wichita Falls et al.* v. *Kemp Hotel Operating Co. et al.*, 162 S.W.2d 150; decided April 24, 1942, rehearing denied May 29, 1942.) The city of Wichita Falls passed an ordinance providing for the gathering and disposition of garbage in the city and entered into a contract with a person who submitted what was officially determined to be the lowest and best bid for the removal and disposition of such garbage. The contract gave the contractor the exclusive right for 5 years to gather and dispose of the garbage, while the ordinance contained a penal provision against all persons, other than the one to whom the contract was let, who gathered and hauled garbage. An action was brought against the city and others for injunctive relief from the enforcement of the ordinance and contract, and, on appeal by the defendants from an adverse judgment, the Court of Civil Appeals of Texas took the view that there were presented the questions (1) whether the gathering and disposition of garbage constituted a public utility, and (2) whether the ordinance and contract amounted to a franchise.

It was obvious, according to the court, that if a public utility franchise had been granted, such franchise was invalid because the applicable city charter provisions had not been complied with. The conclusion reached by the appellate court was that the performance of the ordinance and contract constituted a public utility but that neither the ordinance nor the contract, nor the two combined, constituted a franchise to the contractor. It was, therefore, held that the ordinance and contract were not void for want of compliance with the city charter. The court viewed the ordinance and contract as a means chosen by the governing body of the municipality to keep the city clear of deleterious substances for the promotion of health and to prevent the spread of disease and said that it thought it pertinent to further observe that those plaintiffs in the case "who operated eating places and had a property right in the waste food products which they could sell for swine food, could not assert those rights as against the imperative duty of the city to provide adequate protection to the health and welfare of the general public." Private rights in such instances, continued the court, are subordinate to those of the public.

Power of State board of health to adopt a merit system.—(Arizona Supreme Court; *Dunshee* v. *Manning, Superintendent of Public Health*, 129 P.2d 924; decided October 13, 1942.) In a mandamus proceeding in which the petitioner was successful in having the State Superin-

tendent of Public Health of Arizona directed to approve the petitioner's salary claim as an employee of the State public health department, it appeared that the petitioner had been employed under and governed by certain merit system regulations adopted by the Arizona Board of Health on June 4, 1940. One of the contentions of the respondent superintendent involved the question of the authority of the State board of health to adopt such a merit system. The Supreme Court of Arizona said that it was true that the public health code did not specifically authorize the board of health to prepare and put in force a merit system but held that the statutory provision that "The board shall make rules and regulations for the government of the board, its officers and its meetings" was sufficient to empower the board to adopt a merit system for the government of its own department.

County health department—creation—compliance with statute.—(Kentucky Court of Appeals; *Estill County et al.* v. *Noland, County Judge, et al.*, 167 S.W.2d 707; decided November 20, 1942, as extended on denial of rehearing January 15, 1943.) A county brought an action to enjoin the fiscal court of the county, the county court clerk, and the county treasurer from issuing and paying a county voucher for $1,400 to the State Board of Health of Kentucky to maintain a health department in the county for the current fiscal year. Section 212.040 of the Kentucky Revised Statutes authorized the creation of a county or district health department by resolution adopted at a regular term of the fiscal court and allowed the voters, within 30 days after such resolution was entered, to petition for an election to submit to the people of the county the question of whether or not such health department should be established. It was stipulated by the parties that the orders purporting to create the county health department were all entered at special meetings of the fiscal court but that a number of the said orders making appropriations for the maintenance of the department were made at regular fiscal court meetings.

In considering the question of whether the fact that the county health department was created by an order entered at a special term of the fiscal court was fatal, the Court of Appeals of Kentucky cited a former case holding that a county health department could not be created by a resolution adopted at a special term of the fiscal court and that a subsequent appropriation made by an order entered at a regular term to maintain such department was not a sufficient compliance with the statute concerning the establishment of a department. According to the appellate court, the above-mentioned stipulation clearly brought the instant case within the rule of the prior case and constrained the court to hold that an order entered at a regular term

making an appropriation for a health department, which department had not been created according to the statute, could not be construed as a resolution establishing a health department.

The court also considered the contention that, as the fiscal court's resolution appropriated the $1,400 to the State board of health to assist its program of immunization, aid, and treatment of the citizens of the county, a valid contract was made with the board under section 67.080 of the Kentucky Revised Statutes since subsection 8 thereof authorized the fiscal court to provide for the care and treatment of the sick and poor or contract with any hospital in the county to do so. The court answered this contention by pointing out (*a*) that the State board of health was not a hospital and was not located in the county, and (*b*) that there was no statutory authority for the board to contract with the fiscal court for medical aid to the citizens of the county except under section 212.040 et seq., providing for the establishment of a county health department. By this resolution, said the court, the fiscal court attempted to go around section 212.040 and through indirection sought to establish a county health department in a manner other than that section provided. "This it cannot do. In establishing a county health department it must follow the procedure outlined in the statutes."

Having concluded that no health department was created in compliance with the statute, the court said that it followed that the lower court erred in not enjoining payment of the voucher.

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