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METHYLENE BLUE IN THE TREATMENT OF HCN GAS POISONING

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Recently, the intravenous injection of a solution of methylene blue has been advocated as a treatment for cyanide poisoning. In view of the extensive use of HCN gas in the fumigation of ships, this development has been of extreme interest to the United States Public Health Service. Since, however, the problem presented in fumigation accidents from inhalation of HCN gas differs from that presented when cyanides are ingested, the experimental work reported herein has been undertaken. Brooks has shown that if rats were made unconscious by inhalation of HCN, their rate of recovery could be accelerated considerably by intraperitoneal injection of 1 percent methylene blue solution. We have attempted, in our experiments, to study the problem as it is encountered in fumigation work, and have subjected animals to conditions comparable to exposures to gas in fumigation. The object of these experiments, therefore, was to determine the value of methylene blue injections in the treatment of animals poisoned by inhalation of lethal, or near-lethal, doses of HCN gas.

It has been the almost universal observation of experienced fumigators that persons overcome with HCN gas either die very quickly or, when removed to the open air, recover within a relatively short period of time and recover completely. This is logical because, when inhaled, the poison is immediately absorbed into the blood stream and, in consequence, immediately exerts its effects. Conversely, when the victim is removed to the open air, absorption of additional poison stops at once and that in the blood begins to pass off by way of the lungs. If a large dose has been absorbed, the victim is usually dead when removed from the gas, but when a sublethal dose has been absorbed, the progress of poisoning stops at once and the process of recovery begins. The border-line cases are those in which sufficient HCN gas has been absorbed to inhibit respiration and prevent its spontaneous return, but not sufficient completely to inhibit other body functions, so that if artificial respiration is resorted to, a sufficient amount of the gas may be removed through aeration of the lungs to relieve the effect on the respiratory center, which is followed by

resumption of breathing and recovery. It appears that if methylene blue is of value, it would be in the border-line cases.

Animals differ somewhat from man in their reactions to HCN gas, and, for that reason, a preliminary study was made of a considerable number of guinea pigs, white rats, and rabbits exposed to this gas, with the object of determining the point at which the animal had received a near-lethal, or lethal, dose. The success of the experiments necessarily depended on the animals' receiving, in each case, a uniform dosage—that is, insofar as the dosage was at the near-lethal, or lethal, point. After considerable study it was found possible to determine when the animal had received a lethal, or near-lethal, dose. In the case of rabbits, it was found possible to expose them to gas to the point where they stopped breathing and subsequently recovered; but prolonging the exposure to more than about 10 seconds after cessation of breathing always resulted in death. Guinea pigs and white rats reacted somewhat differently. It was not possible to keep them in the gas to the point of cessation of breathing because, once respiration had ceased, death invariably resulted regardless of whether or not they received injections of methylene blue.

It was necessary in these two groups of animals, therefore, to study the character of the respiration as a means of determining the lethal, or near-lethal, point of gas dosage. These points are, naturally, not definitely determinable, but for practical purposes they were believed to be satisfactory. Of course we were not able to approximate the amount of HCN gas absorbed by the animals, but we have rather studied results of exposure to definite concentrations of gas, with the hope that more practical results would be thus obtained than would be obtained in using definite amounts of other cyanides by intravenous or oral administration. It will be noted in the tables in this paper that the writer's observation as to lethal and near-lethal dosages could not have been much in error.

The concentrations of HCN gas used in these experiments were $\frac{1}{2}$ ounce per 1,000 cubic feet for rabbits, and 1 ounce per 1,000 cubic feet for white rats and guinea pigs.

PROCEDURE OF EXPERIMENTS

The animals were placed separately in glass jars which were of such size that $\frac{1}{10}$ cc of liquid HCN gave a concentration of gas equal to 1 ounce per 1,000 cubic feet. The jars were covered with oiled paper, which was fastened snugly with a cord around the top of the jar. A small hole was made in the paper near the edge of the jar. Liquid HCN was measured out in a pipette in the amount desired, and the pipette was then inserted into the small hole in the covering. The liquid HCN was allowed to run down the edge of the jar so that it

would rapidly be transformed into a gas and so that the animal would not come in direct contact with the liquid.

As soon as the liquid had been poured into the jar, the hole in the cover was closed. The time of insertion of the liquid was noted, and the animal was observed until it was thought that it had breathed in a near-lethal, or lethal, dose of the HCN gas. The animal was then quickly removed from the jar, and a 1 percent solution of methylene blue in physiological saline solution was injected intravenously in rabbits at a dosage of 1 cc per kilogram of body weight, and intraperitoneally in guinea pigs at a dosage of 1 cc per 100 grams of body weight. In the experiments with white rats, methylene blue was injected intraperitoneally in two dosages, the first series receiving dosages of 1 cc per 100 grams of body weight, the second series receiving dosages of $\frac{1}{2}$ cc per 100 grams of body weight.

The animals were observed to determine the time of recovery or the time in which death took place. The recovery time or the death time was estimated from the time the animal was taken from the jar until it had recovered or died. Recovery was considered complete when the animal had regained the use of its legs and was able to move forward. An equal number of control experiments were conducted.

Fifty-four guinea pigs were exposed to HCN gas in a concentration equal to 1 ounce per 1,000 cubic feet. Of 29 that were given intraperitoneal injections of methylene blue solution, 17 recovered and 12 died. The average time of exposure for the 17 that recovered was 5 minutes 15 seconds, and the average time of recovery was 12 minutes 27 seconds. Of the 12 guinea pigs that died, the average exposure time was 5 minutes 11 seconds, and the average time in which death occurred was 6 minutes 1 second. Fifteen of the 25 guinea pigs that did not receive injections of methylene blue recovered; their average time of exposure was 5 minutes 50 seconds, and the average time of recovery 13 minutes 10 seconds. The average time of exposure for the 10 guinea pigs that died was 5 minutes 45 seconds, and the average time of death 6 minutes 54 seconds.

Ninety-eight white rats were exposed to HCN gas in a concentration equal to $\frac{1}{2}$ ounce per 1,000 cubic feet. Of this number, 66 were given intraperitoneal injections of methylene blue. Thirty-two of these were given the solution in a dosage of 1 cc per 100 grams of body weight. Twenty recovered. The average time of exposure was 3 minutes 38 seconds, and the average time of recovery 13 minutes 46 seconds. The average exposure time of the 12 rats that died was 3 minutes 27 seconds, and the average time in which death occurred was 2 minutes 54 seconds. The other 34 white rats received injections of methylene blue in a dosage of $\frac{1}{2}$ cc per 100 grams of body weight. Twenty-three recovered, with an average recovery time of 13 minutes 52 seconds; the average time of exposure was 3

minutes 22 seconds. The remaining 11 rats died; their average time of exposure was 3 minutes 13 seconds, and the average time in which death took place 2 minutes 30 seconds. Thirty-two rats were used as controls. They were exposed to HCN gas in a concentration equal to $\frac{1}{2}$ ounce per 1,000 cubic feet and were not given injections of methylene blue. Twenty-two of these recovered and 10 died. The average time of exposure for those that recovered was 3 minutes 40 seconds, and the average time of recovery 13 minutes 34 seconds. For those that died, the average time of exposure was 3 minutes 16 seconds, and the average time in which death occurred was 2 minutes 38 seconds.

Thirty-five rabbits were exposed to HCN gas in a concentration equal to $\frac{1}{2}$ ounce per 1,000 cubic feet. Of this number, 18 received injections of methylene blue and 17 were used as controls. The rabbits received intravenous injections of methylene blue solution in a dosage of 1 cc per kilogram of body weight. Fifteen of them recovered and three died. The average exposure time of those recovering was 2 minutes 59 seconds, and the average time of recovery 13 minutes 6 seconds. Of the 17 receiving no methylene blue, 15 recovered and 2 died. The average exposure time for those recovering was 3 minutes 2 seconds, and the average recovery time 12 minutes 55 seconds. For the 5 rabbits that died, the average exposure time was 3 minutes, and average time of death 2 minutes 46 seconds, there appearing only slight individual variations.

These results are tabulated in table 1.

TABLE 1.—Results of experiments

Animal group	Number in group	Number that died	Average time of exposure	Average time of death	Number that recovered	Average time of exposure	Average time of recovery
WHITE RATS							
Given methylene blue, 1 cc per 100 gm, intraperitoneally.	32	12	3 min. 27 sec.	2 min. 54 sec.	20	3 min. 38 sec.	13 min. 46 sec.
Given methylene blue, $\frac{1}{2}$ cc per 100 gm.	34	11	3 min. 13 sec.	2 min. 30 sec.	23	3 min. 22 sec.	13 min. 52 sec.
Controls, receiving no methylene blue.	32	10	3 min. 16 sec.	2 min. 38 sec.	22	3 min. 40 sec.	13 min. 34 sec.
GUINEA PIGS							
Given methylene blue, 1 cc per 100 gm, intraperitoneally.	29	12	5 min. 11 sec.	6 min. 1 sec.	17	5 min. 15 sec.	12 min. 27 sec.
Controls, receiving no methylene blue.	25	10	5 min. 45 sec.	6 min. 54 sec.	15	5 min. 50 sec.	13 min. 10 sec.
RABBITS							
Given methylene blue, 1 cc per kg., intravenously.	18	3	3 min. 0 sec. ¹	2 min. 46 sec. ¹	15	2 min. 59 sec.	13 min. 6 sec.
Controls, receiving no methylene blue.	17	2	3 min. 0 sec. ¹	2 min. 46 sec. ¹	15	3 min. 2 sec.	12 min. 55 sec.

¹ Average time for the 5 rabbits that died; only slight individual variations were noted.

CONCLUSIONS

It was apparent from these experiments on rabbits, white rats, and guinea pigs that injections of 1 percent methylene blue solution were of no value in the treatment of hydrocyanic acid gas poisoning where the animals had absorbed, by breathing, lethal or near-lethal doses of gas in a short period of time. There was a slight variation of results in the different animals used, but the average of results indicated no advantage in favor of methylene blue treated animals.

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MORTALITY FROM CERTAIN CAUSES DURING THE FIRST HALF OF 1933¹

This report covers mortality in 28 States for the first half of 1933, with comparative data for the first half of the four preceding years. In addition to the death rate from all causes, rates are shown for 4 groups of diseases and 17 specific causes, some of which are included in the groups. Infant and maternal mortality rates per 1,000 live births are also shown.

The rates are computed from current and generally preliminary reports furnished by State departments of health. Because of some lack of uniformity in the method of classifying deaths according to cause, some delayed death certificates, and various other reasons, these preliminary rates cannot be expected to agree in all instances with final rates published by the Bureau of the Census, which are based on a complete review and retabulation of the individual death certificates from each State. The preliminary rates given in the accompanying table are intended to serve only as a current index of mortality until final figures are issued by the Bureau of the Census.

The mortality situation for the first half of 1933 is very favorable. The death rate from all causes in the whole group of 25 States² was 11.1 per 1,000, as compared to 11.3 and 11.8 in the first half of 1932 and 1931, respectively. Both the first and second quarters show a decline. Of the 28 States with data for both 1933 and 1932, 13 States, with an aggregate population of 35,000,000, had higher rates

¹ From the Office of Statistical Investigations, United States Public Health Service.

² States with data for every cause group included in the table for each of the years 1931, 1932, and 1933.

in 1933; 12 States, with an aggregate population of 51,000,000 had lower; and in 3 States, with an aggregate population of 9,000,000 the rate remained the same.

Tuberculosis mortality was 60.2 per 100,000 in the first half of 1933, as compared to 65.9 and 69.5 in the same period in 1932 and 1931, respectively. Of 28 States with data for both years, 22 had lower rates in 1933 than in 1932, 5 had higher rates, and in 1 State the rate was the same in both years.

Infant mortality was the same in the first half of 1933 and 1932, 59 per 1,000, but was lower than the 1931 figure of 66 per 1,000. Of 26 States with data for both years, 15 had higher rates in 1933 than 1932, 9 had lower rates, and in 2 States the rate remained the same.

In spite of a minor influenza epidemic that extended into the early weeks of 1933, the pneumonia death rate in this group of States was lower for the first half of 1933 than in 1932 or 1931. The same is true of the rate for influenza and pneumonia combined, in spite of a slightly higher rate for influenza in 1933.

The rate for diarrhea and enteritis under 2 years of age was 7.0 per 100,000 total population in 1933 as compared with 7.4 and 8.2 in the same period of 1932 and 1931, respectively. However, in 16 of the 28 States with data for both 1933 and 1932, the rate was higher in 1933 than in 1932.

Mortality from cancer and diseases of the heart continued their steady increase.

Mortality from certain causes in the first 6 months of 1933, with comparative data for the corresponding period in preceding years

State and period	Death rate per 100,000 population (annual basis)																									
	Rate per 1,000 live births																									
	All causes, rate per 1,000 popu-	Maternal mortality	Total infant mortality	All except malformations and early infancy	Measles (7)	Scarlet fever (8)	Whooping cough (9)	Diphtheria (10)	Influenza (11)	Pollomyelitis (16)	Lethal epi encephalitis (17)	Meningococcus meningitis (18)	Tuberculosis, all forms (23-32)	Cancer, all forms (45-63)	Diabetes (59)	Diseases of the nervous system (73-89)	Cerebral hemorrhage, apoplexy (82a-b)	Diseases of the circulatory system (90-103)	Diseases of the heart (90-95)	Diseases of the respiratory system (104-114)	Pneumonia, all forms (107-109)	Diseases of the digestive system (115-128)	Dysentery and enteritis under 2 years (119)	Nephritis (140-150)		
25 States.*																										
January to June—	11.1	59	27	6.1	1.5	2.6	2.4	3.0	2.0	38.2	0.3	0.8	1.0	60.2	104.6	23.3	108.7	84.1	268.4	224.8	95.9	83.7	63.6	7.0	83.6	
1933.....	11.3	56	27	6.4	1.9	2.7	2.7	4.9	3.5	34.3	.4	.7	1.6	65.9	102.4	23.3	111.3	86.1	267.6	232.7	106.8	94.4	65.1	7.4	86.4	
1932.....	11.8	66	31	6.8	1.6	4.1	2.7	3.3	2.9	41.9	.5	1.1	2.8	68.5	100.5	21.9	114.1	86.4	245.2	229.3	127.1	113.1	68.4	8.2	86.6	
January to March—	11.7	65	31	6.2	1.3	2.0	2.6	3.0	2.6	33.3	.3	.8	1.2	60.3	104.0	25.3	113.4	88.5	263.7	248.9	120.7	107.7	59.6	6.2	86.3	
1933.....	11.8	60	29	6.4	2.0	2.1	2.9	4.9	4.6	44.1	.4	.8	1.9	65.5	101.8	24.8	114.9	89.5	250.8	244.3	130.0	116.0	62.4	5.6	86.7	
1932.....	12.6	74	40	7.0	1.4	3.3	2.8	3.3	3.6	60.9	.5	1.0	3.2	69.3	100.0	23.3	118.2	89.7	263.4	245.1	164.8	149.2	66.0	7.2	89.7	
April to June—	10.4	54	23	6.1	1.7	3.3	2.2	3.0	1.4	12.9	.4	.7	1.4	66.2	104.1	21.8	104.1	79.8	253.2	220.9	71.4	59.9	67.6	8.8	81.1	
1933.....	10.8	57	26	6.4	1.8	3.3	2.4	4.9	2.4	24.5	.4	.7	1.9	66.0	103.1	21.8	107.7	82.7	254.4	221.0	83.7	72.8	67.8	9.1	86.0	
1932.....	11.1	58	28	6.7	1.9	4.9	2.5	3.4	2.2	23.2	.5	1.1	2.5	69.6	100.9	20.5	110.0	83.1	247.2	213.8	89.9	77.4	70.8	9.3	83.4	
JANUARY TO JUNE																										
Alabama:	9.5	67	42	6.7	2.8	1.2	4	6.7	2.5	47.7	.4	1.3	.4	71.1	55.1	9.2	83.9	57.1	135.4	124.4	69.9	64.1	58.4	14.1	79.0	
1933.....	10.0	62	39	7.8	4.0	1.1	7.2	4.1	40.7	.3	1.7	.6	79.3	64.1	8.0	88.7	59.3	132.1	112.7	116.8	88.9	82.7	61.1	11.9	81.4	
1932.....	11.1	71	45	8.6	2.4	1.1	8.3	3.5	64.5	.8	1.5	4.3	86.0	53.5	10.2	93.3	61.3	122.3	121.8	127.3	116.8	116.8	62.9	11.4	89.4	
1930.....	11.7	78	47	8.5	3.6	1.1	8.6	3.8	49.0	.6	1.7	8.5	99.2	49.5	9.3	99.2	62.2	150.2	138.2	124.6	112.0	121.4	77.9	24.7	101.3	
1929.....	13.2	86	55	9.3	4.5	3.8	1.0	9.5	42.2	1.2	1.3	1.3	83.8	45.6	9.4	99.2	57.0	139.7	130.4	128.9	121.4	94.9	23.2	91.5		
California:	11.7	55	24	5.1	.9	2.5	1.4	3.3	2.1	21.9	1	.5	1.6	81.3	127.4	24.0	117.8	57.0	320.7	286.2	89.3	76.4	64.3	4.8	83.7	
1933.....	11.1	54	24	6.2	1.1	1.6	1.0	2.3	3.4	13.0	.3	.5	1.7	81.3	119.5	21.3	107.6	79.8	294.8	260.5	82.2	69.1	64.8	6.7	86.2	
1932.....	11.7	60	29	6.3	1.5	3.3	1.3	2.7	19.2	.7	.8	3.1	86.2	124.5	19.8	110.0	78.9	290.9	256.1	89.8	76.1	74.7	16.3	85.6		
1930.....	11.9	60	29	5.9	1.4	3.6	1.8	3.8	3.6	10.5	1.4	1.1	3.9	108.0	122.2	20.3	114.8	83.3	291.4	248.2	95.1	80.9	78.4	15.1	84.6	
1929.....	12.6	68	36	5.3	1.5	.3	2.5	6.4	3.0	30.8	.8	1.5	9.8	116.2	117.0	19.4	119.0	83.4	304.1	297.8	109.0	76.4	10.9	94.1		

* States included are: Alabama, California, Connecticut, District of Columbia, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Louisiana, Maryland, Michigan, Minnesota, Montana, Nebraska, New Jersey, New York, Ohio, Pennsylvania, South Dakota, Tennessee, Virginia, West Virginia, Wisconsin.

Mortality from certain causes in the first 6 months of 1933, with comparative data for the corresponding period in preceding years—Continued

State and period	Death rate per 100,000 population (annual basis)																										
	All causes, rate per 1,000 population	Total infant mortality	All except malformations and early infancy	Maternal mortality	Typhoid fever (1)	Measles (7)	Scarlet fever (8)	Whooping cough (9)	Diphtheria (10)	Influenza (11)	Poliomyelitis (16)	Leathargic encephalitis (17)	Meningococcus meningitis (18)	Tuberculosis, all forms (23-32)	Cancer, all forms (45-53)	Diabetes (59)	Diseases of the nervous system (79-89)	Cerebral hemorrhages, apoplexy (82a-b)	Diseases of the circulatory system (90-103)	Diseases of the heart (90-95)	Diseases of the respiratory system (104-114)	Pneumonia, all forms (107-109)	Diseases of the digestive system (115-129)	Diarrhea and enteritis under 2 years (119)	Nephritis (140-150)		
JANUARY TO JUNE—cont'd.																											
Connecticut:																											
1933	11.1	52	7.5	7.5	5	1.8	2.7	3.0	1.2	35.7	(1)	1.0	1.0	54.0	130.9	29.3	(3)	(3)	(3)	216.0	(3)	83.1	(3)	4.5	92.0		
1932	10.8	58	6.1	6.1	2	3.7	1.2	2.0	1.2	22.5	4	1.0	1.0	54.4	114.1	29.1	(3)	(3)	(3)	228.4	(3)	80.9	(3)	3.0	94.6		
1931	10.9	59	(3)	(3)	3	3.7	2.0	2.0	1.2	20.1	4	1.7	1.7	56.7	111.1	24.9	(3)	(3)	(3)	210.4	(3)	101.9	(3)	5.0	88.9		
1930	11.8	68	(3)	(3)	5	5.1	2.0	2.3	3.3	22.3	8	1.3	1.6	66.9	115.8	20.4	(3)	(3)	(3)	201.4	(3)	128.5	(3)	6.0	81.0		
1929	12.6	76	(3)	(3)	6	5.7	1.3	2.3	3.8	40.3	3	1.4	1.4	69.3	112.6	17.9	(3)	(3)	(3)	211.5	(3)	149.6	(3)	8.8	83.9		
District of Columbia:																											
1933	16.5	64	26	5.0	1.2	1.2	4.9	4	1.6	15.5	(4)	4	2.9	135.3	153.2	27.7	167.0	127.1	428.6	333.6	149.9	131.9	107.1	9.4	129.6		
1932	17.0	69	31	8.5	1.8	1.4	4.4	5.7	4.2	17.8	(4)	2.0	4.2	128.4	158.3	29.9	185.6	117.5	402.2	344.1	184.5	162.3	96.6	8	153.7		
1931	16.8	70	36	6.7	2.0	4.9	2.6	4.2	5.3	31.1	8	3.9	9.0	138.2	138.2	31.1	171.0	119.7	357.4	241.9	223.1	194.3	94.6	7.4	158.4		
1930	15.8	68	33	10.2	1.2	(3)	2.6	4.1	2.7	7.8	(4)	4	2.1	127.7	136.4	28.3	143.9	103.7	366.6	245.9	170.2	146.5	91.0	6.6	173.2		
1929	10.9	69	34	6.0	1.3	(3)	3.3	3.4	2.9	38.0	4	(3)	2.1	136.9	131.0	28.2	147.7	91.4	410.6	360.9	218.5	198.7	92.0	5.8	158.2		
Florida:																											
1933	12.0	70	35	11.4	4.6	1.1	2.9	3.8	3.5	5.5	8	(3)	(3)	66.1	92.1	15.9	121.3	92.6	208.8	191.4	76.0	65.2	73.6	8.2	122.2		
1932	11.5	63	34	6.3	6.2	1.9	1.5	3.7	3.2	32.8	0	(3)	1.1	73.6	76.3	17.1	122.0	104.7	204.2	188.9	75.0	72.9	92.3	14.3	126.4		
1931	12.7	69	36	10.3	5.8	3.2	2.3	3.7	3.9	37.7	3	5	1.1	71.1	74.1	14.1	134.0	112.7	221.8	205.6	83.6	70.3	86.9	19.4	124.5		
1930	12.9	69	35	10.2	4.9	7.0	3	3.7	3.1	31.0	3	5	1.1	71.9	53.3	16.2	133.5	111.7	214.5	157.1	92.2	72.5	92.7	18.1	127.6		
Georgia:																											
1933	10.0	72	(3)	8.0	4.4	1.7	6.4	2.7	66.2	9	1	4	4	57.8	71.3	11.6	101.1	71.0	130.7	121.3	94.2	86.1	61.5	12.5	106.0		
1932	10.7	70	(3)	9.7	8.6	3.5	4.0	4.0	45.4	1.2	6	1	1	67.1	48.8	11.9	118.4	81.6	143.7	132.2	110.4	101.1	62.6	10.6	111.9		
1931	11.5	75	(3)	11.0	6.8	3.5	2.1	4.5	3.3	76.8	8	5	2	75.9	50.6	10.4	119.6	151.7	137.7	120.1	120.1	110.8	64.1	12.8	110.4		
1930	12.2	85	(3)	10.4	7.0	7.4	1.0	9.5	2.7	49.5	1.2	3	4.2	77.9	49.5	11.9	131.7	(3)	166.1	141.1	128.0	113.5	80.2	20.4	142.4		
1929	12.1	(3)	(3)	9.4	5.8	1.9	1.0	6.7	3.3	152.9	(3)	3	2.7	78.2	45.0	9.6	(3)	(3)	(3)	121.6	(3)	97.6	(3)	16.0	133.4		
Hawaii:																											
1933	10.1	79	50	5.3	8.5	5.5	17.5	2.1	10.1	1.1	(3)	1	1	111.3	70.3	14.8	72.6	51.9	125.6	113.9	97.5	108.6	67.7	82.7			
1932	10.4	82	(3)	2.2	13.4	5	2.2	7.5	5.4	1.1	5	4.8	101.6	70.4	9.1	(3)	52.7	(3)	103.2	103.2	121.5	122.1	60.8	67.8			
1931	10.4	77	(3)	3.2	14.2	(3)	2.2	2.6	107.9	4.7	(3)	2	2.6	107.9	61.4	14.7	(3)	57.4	(3)	115.3	(3)	138.0	117.9	51.1	78.5		
1930	11.5	89	(3)	2.2	7.3	(3)	6.8	13.5	7.9	(3)	(3)	6.8	107.0	47.9	14.1	(3)	47.9	(3)	131.8	(3)	138.0	186.9	91.8	82.3			
1929	14.1	113	(3)	4.6	7.5	(3)	49.7	11.0	27.2	6	(3)	36.4	112.1	67.0	12.7	(3)	52.6	(3)	131.2	(3)	190.1	195.9	121.9	(3)			

Idaho:	52	10.0	17	1.9	5.0	(1)	.9	(1)	2.3	28.4	(1)	4	1.3	30.2	87.3	11.3	113.4	77.4	209.3	175.6	95.4	76.8	59.0	9	36.9	
1933	9.6	66	38	5.6	2.2	(1)	.5	(1)	3.6	21.5	(1)	4	3.3	33.7	62.8	12.6	119.4	90.2	205.6	166.1	98.8	87.1	57.0	2	47.1	
1932	10.3	61	3.2	1.8	11.3	.9	3.2	1.8	2.3	14.0	.9	3.2	7.7	29.3	65.9	10.8	137.6	112.8	197.1	174.1	111.4	102.9	56.8	3	37.0	
1931	10.0	58	22	4.7	2.7	1.8	3.6	(1)	2.3	13.1	(1)	1	8.6	36.2	60.1	7.7	106.7	68.7	200.2	174.5	142.9	122.5	52.4	2	41.6	
Illinois:	58	11.0	24	5.5	.8	1.2	4.9	.7	1.7	25.0	(1)	4	6	56.8	116.9	27.9	106.9	80.6	290.3	261.4	89.0	76.4	69.9	5	106.6	
1933	10.9	58	25	5.5	.9	1.0	4.7	4.5	3.2	29.8	.5	5	2.4	63.6	112.5	27.2	102.2	76.5	257.0	238.0	94.4	80.0	69.9	4	116.2	
1932	(*)	(*)	(*)	(*)	1.0	8.0	7.0	2.3	5.7	35.5	.4	6	4	64.0	104.0	16.9	116.4	115.0	(*)	(*)	(*)	102.5	(*)	(*)	(*)	(*)
1931	(*)	(*)	(*)	(*)	1.8	5.5	2.0	7.9	16.1	1.2	2.1	1.1	4.4	74.0	(*)	(*)	(*)	(*)	(*)	(*)	(*)	81.9	(*)	(*)	(*)	(*)
1930	(*)	(*)	(*)	(*)	1.0	6.4	5.0	3.1	9.9	61.4	.2	1.1	4.4	68.9	(*)	(*)	(*)	(*)	(*)	(*)	(*)	111.3	(*)	(*)	(*)	(*)
1929	(*)	(*)	(*)	(*)	1.8	6.4	2.6	2.2	3.3	48.1	.4	1.3	2.0	57.7	106.7	16.3	(*)	112.9	(*)	187.3	(*)	80.5	(*)	5.8	79.6	
Indiana:	57	11.6	25	5.4	1.8	.6	2.6	2.2	3.3	48.1	.4	1.3	2.0	57.7	106.7	16.3	(*)	112.9	(*)	187.3	(*)	80.5	(*)	5.8	79.6	
1933	11.8	59	26	5.6	1.0	8.3	3.1	7.8	4.3	49.9	.5	7	5.0	60.5	105.8	16.9	(*)	115.0	(*)	180.6	(*)	103.6	(*)	6.9	71.8	
1932	12.4	63	32	6.0	1.3	8.5	4.9	4.3	3.5	56.4	.2	7	7.8	60.5	105.8	16.9	(*)	114.4	(*)	182.3	(*)	118.8	(*)	6.1	80.3	
1931	12.5	57	25	6.5	1.3	7.2	4.7	4.2	3.6	25.1	.3	8	12.8	73.7	104.6	17.9	(*)	117.4	(*)	202.6	(*)	106.9	(*)	7.3	91.0	
1930	13.3	70	(*)	7.8	1.6	7.2	4.7	6.5	4.2	101.1	.3	6	1.5	78.0	97.9	15.1	(*)	116.1	(*)	218.9	(*)	131.8	(*)	8.3	87.5	
1929	(*)	(*)	(*)	(*)	1.5	2.3	2.3	2.2	3.3	48.1	.4	1.3	2.0	57.7	106.7	16.3	(*)	112.9	(*)	187.3	(*)	80.5	(*)	5.8	79.6	
Iowa:	55	10.8	24	5.8	1.0	.3	1.5	2.3	1.2	56.4	2.3	2	1.1	33.9	104.6	25.8	143.8	116.8	256.0	201.4	113.0	91.5	52.0	1	46.3	
1933	10.6	51	21	3.5	.8	.3	2.0	1.9	1.6	39.8	1.1	1	1.1	20.1	112.0	16.5	145.4	115.1	260.7	213.2	117.2	93.8	57.3	2	49.1	
1932	11.2	60	27	6.1	.6	.2	2.8	2.8	1.9	43.6	.3	2	1.5	4.0	29.3	119.0	23.3	142.3	112.7	253.2	224.5	105.2	91.6	69.3	4	43.8
1931	11.0	60	25	7.5	1.1	1.5	3.9	4.6	2.1	35.5	.1	2	3.8	34.3	108.6	23.2	140.9	97.0	261.2	210.4	111.3	101.8	69.2	3	44.3	
1930	11.2	60	25	6.3	1.3	1.6	2.7	5.0	.8	90.4	.7	1	1.6	35.7	110.8	19.9	140.4	101.9	268.9	323.4	95.0	77.9	62.1	3	55.3	
1929	(*)	(*)	(*)	(*)	1.5	2.3	2.3	2.2	3.3	48.1	.4	1.3	2.0	57.7	106.7	16.3	(*)	112.9	(*)	187.3	(*)	80.5	(*)	5.8	79.6	
Kansas:	62	11.3	30	5.8	1.0	1.4	1.9	3.1	2.3	80.2	2	4	1.5	33.9	104.6	25.8	134.9	111.7	222.9	202.5	88.4	76.5	66.7	4	9	
1933	10.2	40	19	6.7	1.7	2.4	1.8	2.4	3.5	46.0	2	4	2.0	34.6	104.6	22.4	124.7	101.5	260.7	213.2	117.2	93.8	59.8	6	104.5	
1932	10.4	60	28	7.1	1.4	1.5	1.6	1.9	48.1	1.7	9	1	1.6	38.6	94.7	24.2	128.1	101.5	203.3	152.2	83.0	73.1	67.5	6	106.0	
1931	10.8	57	26	8.0	1.1	7.6	3.1	4.9	3.9	43.4	.5	4	3.5	38.6	95.0	23.6	132.1	100.6	311.1	183.1	83.7	73.2	66.8	7	109.0	
1930	11.2	60	25	7.4	2.0	4.0	4.6	4.7	2.8	85.8	.4	8	3.3	46.4	91.5	23.9	147.9	118.1	200.0	174.5	89.7	77.1	69.9	7	106.0	
1929	(*)	(*)	(*)	(*)	1.5	2.3	2.3	2.2	3.3	48.1	.4	1.3	2.0	57.7	106.7	16.3	(*)	112.9	(*)	187.3	(*)	80.5	(*)	5.8	79.6	
Louisiana:	67	10.5	46	8.7	7.6	2.3	4	5.3	2.2	53.1	3	2	1.7	74.6	70.3	12.4	84.7	62.2	202.2	185.3	81.4	71.3	70.7	16	4	
1933	10.1	47	38	6.2	11.0	2.3	.5	2.9	4.5	29.4	3	4	1.5	77.2	59.0	11.6	70.1	66.4	105.5	180.3	87.2	73.4	65.4	13	99.5	
1932	11.5	73	41	6.7	5.8	.8	3.6	4.5	4.3	72.0	1	7	3.2	90.2	69.0	14.7	83.1	88.0	317.3	199.9	118.2	106.8	78.7	19	110.5	
1931	12.4	84	61	10.9	6.5	8.1	3.8	6.7	4.5	152.7	1.3	7	3.2	94.6	66.0	14.7	86.7	64.9	230.4	212.5	123.4	112.6	88.8	24	120.4	
1930	12.3	86	58	11.3	7.8	3.9	.6	6.0	4.2	132.2	.6	5	3.0	95.1	64.1	11.3	93.2	59.9	215.9	197.6	109.3	98.1	86.1	26	110.9	
1929	(*)	(*)	(*)	(*)	1.0	1.0	2.9	2.9	2.4	28.5	(*)	1	1.0	87.5	118.3	27.2	132.6	103.0	308.9	278.3	126.8	115.6	91.6	9	154.2	
Maryland:	62	12.9	37	6.2	7.7	2.2	2.0	7.8	4.0	29.0	2	6	1.1	66.7	116.4	27.8	145.2	111.8	304.4	278.1	140.2	115.1	71.4	13	149.5	
1933	13.3	76	41	6.4	1.8	10.5	2.3	5.3	3.3	36.4	.4	1.9	2.2	102.7	113.0	23.6	153.0	121.7	316.0	285.5	192.5	137.2	69.5	12	145.7	
1932	13.7	64	32	6.6	2.1	.6	3.3	5.4	3.1	16.7	.1	1.9	1.9	110.7	110.7	24.7	145.5	110.7	299.3	264.4	163.0	151.2	67.6	12	162.1	
1931	10.2	52	17	5.9	.6	4.1	4.6	3.7	2.3	28.1	1	4	.8	51.1	97.2	23.4	114.3	86.1	266.4	240.9	75.8	64.2	63.5	4	8	
1930	10.3	67	22	6.3	.6	5.8	3.0	3.8	2.6	31.5	.3	5	2.0	52.0	92.4	23.4	115.9	88.4	254.9	230.9	91.0	77.6	63.8	5	61.7	
1929	10.6	62	27	6.9	.8	9.9	3.6	4.1	3.5	28.2	2	9	3.5	68.8	91.9	18.8	122.6	99.4	248.3	221.1	97.2	82.4	68.1	5	62.6	
Michigan:	11.4	69	31	6.6	1.1	8.6	3.9	3.8	7.9	17.2	.4	1.2	12.4	66.1	89.7	21.0	127.8	96.4	246.8	218.0	114.2	95.2	75.1	8	4	
1933	13.0	74	38	6.7	1.4	4.8	4.6	6.5	10.9	66.4	.7	1	1.6	25.4	74.4	19.1	141.5	100.8	271.8	239.2	144.4	125.7	83.4	14	0	
1932	(*)	(*)	(*)	(*)	1.5	2.3	2.3	2.2	3.3	48.1	.4	1.3	2.0	57.7	106.7	16.3	(*)	112.9	(*)	187.3	(*)	80.5	(*)	5.8	79.6	

* Data not available.

† No deaths.

Mortality from certain causes in the first 6 months of 1933, with comparative data for the corresponding period in preceding years—Continued

State and period	Rate per 1,000										Death rate per 100,000 population (annual basis)																
	All causes, rate per 1,000 population	Total infant mortality	All except malformations and early infancy	Maternal mortality	Typhoid fever (1)	Measles (7)	Scarlet fever (8)	Whooping cough (9)	Diphtheria (10)	Influenza (11)	Pollomyelitis (16)	Leathargic encephalitis (17)	Meningococcus meningitis (18)	Tuberculosis, all forms (23-32)	Cancer, all forms (45-53)	Diabetes (59)	Diseases of the nervous system (78-89)	Cerebral hemorrhages, apoplexy (82a-b)	Diseases of the circulatory system (90-103)	Diseases of the heart (90-95)	Diseases of the respiratory system (104-114)	Pneumonia, all forms (107-109)	Diseases of the digestive system (115-129)	Diphtheria and enteritis under 2 years (119)	Nephritis (140-150)		
JANUARY TO JUNE—cont'd.																											
Minnesota:																											
1933	10.2	53	23	5.1	6.4	2.2	3.0	1.1	41.0	2.2	1.2	1.8	43.2	131.6	21.9	100.5	82.1	232.8	206.8	82.7	72.5	62.0	62.0	4.5	68.4		
1932	9.8	47	15	4.3	3.2	2.7	1.2	1.1	36.8	3.5	1.7	2.3	43.1	120.4	20.6	101.8	78.0	216.5	197.4	82.5	73.3	60.6	60.6	4.5	66.8		
1931	10.4	53	21	5.0	2.2	4.1	1.2	1.2	35.5	3.6	1.2	2.3	43.4	118.6	20.7	106.1	80.1	210.8	189.3	100.9	94.7	67.4	67.4	3.5	66.8		
1930	10.0	46	17	5.4	9.6	2.3	3.0	1.3	20.2	3.8	1.5	2.7	49.4	116.5	18.9	110.0	83.5	199.1	181.7	109.3	84.9	67.4	67.4	5.3	55.2		
1929	10.8	55	23	4.7	5.1	3.1	5.5	2.4	67.4	4.4	2.8	2.1	60.7	111.1	20.2	108.5	81.0	212.6	162.3	93.7	85.8	66.6	66.6	3.9	61.0		
Mississippi:																											
1933	9.7	59	29	4.4	4.0	2.0	10.3	2.3	53.5	2.2	1.2	1.2	64.4	49.1	7.2	100.0	65.2	232.8	206.8	99.7	57.0	62.0	62.0	15.7	62.3		
1932	9.0	48	22	3.4	3.4	1.5	6.4	4.9	34.6	7.1	1.1	1.2	72.5	47.1	7.7	100.0	64.0	232.8	206.8	83.0	55.4	62.0	62.0	12.3	72.1		
1931	10.8	60	30	3.9	6.6	4.4	2.6	3.6	67.4	3.3	1.1	2.4	84.3	50.9	9.9	100.0	71.5	232.8	206.8	105.5	66.6	62.0	62.0	10.1	89.4		
1930	11.7	66	34	5.4	2.4	5.6	10.2	3.4	43.8	7.8	1.1	1.1	80.6	47.7	9.7	100.0	71.7	232.8	206.8	106.6	85.3	62.0	62.0	9.3	105.4		
1929	12.8	72	39	6.5	7.6	11.2	11.2	2.6	193.6	8.5	1.6	1.6	85.6	45.6	6.7	100.0	65.1	232.8	206.8	106.6	80.7	62.0	62.0	17.2	93.4		
Montana:																											
1933	9.7	59	28	4.5	2.9	4.4	4.4	2.2	60.6	1.8	1.8	1.4	54.4	79.7	12.1	99.9	76.8	169.8	158.7	83.8	71.3	62.0	62.0	4.8	62.1		
1932	9.0	48	22	3.0	3.0	1.5	6.0	1.6	56.8	1.5	1.1	1.9	55.7	86.3	13.1	105.5	73.6	183.5	165.2	85.6	69.5	68.4	68.4	6.8	68.8		
1931	10.0	65	31	4.4	2.6	13.9	2.2	51.0	30.9	1.9	1.5	2.0	61.1	69.7	19.9	99.7	70.6	148.4	131.2	98.3	83.6	75.0	75.0	5.2	58.8		
1930	9.9	57	27	3.0	4.5	4.1	1.5	4.4	30.9	1.9	2.3	7.5	66.6	80.1	18.1	100.8	65.8	160.3	144.8	118.1	106.8	73.0	73.0	6.4	73.7		
Nebraska:																											
1933	9.9	59	28	4.5	3.3	2.0	1.6	1.3	55.6	1.4	1.4	1.0	25.9	102.8	16.8	129.0	103.1	217.5	190.2	103.1	91.1	57.2	57.2	2.9	61.9		
1932	9.4	45	16	5.4	1.6	2.4	1.9	1.6	42.0	3.3	1.4	1.7	22.5	102.1	23.8	116.0	95.3	196.1	174.3	80.6	69.7	62.0	62.0	4.0	82.6		
1931	9.9	53	23	4.8	1.6	1.1	2.5	2.5	33.1	1.0	1.4	2.3	26.7	95.6	22.9	112.5	95.0	200.6	173.8	80.8	72.8	68.6	68.6	4.8	68.9		
1930	10.7	49	19	5.2	7.1	3.5	3.7	2.2	23.0	4.4	1.0	3.3	24.1	106.1	23.9	126.0	112.8	196.5	174.0	83.2	82.2	70.8	70.8	4.9	68.6		
1929	10.7	63	32	6.7	1.5	3.1	6.6	4.0	80.5	1.1	1.0	3.5	54.4	95.3	22.9	126.0	94.7	205.5	184.3	93.7	82.4	73.1	73.1	5.4	57.6		
New Jersey:																											
1933	10.8	50	23	5.4	2.9	2.3	1.2	1.7	18.6	1.4	1.7	1.6	60.0	115.9	30.2	110.6	84.3	303.5	280.8	98.3	86.9	62.7	62.7	4.8	92.2		
1932	10.6	52	24	6.3	1.5	2.1	4.2	2.6	22.2	1.4	1.7	1.9	65.8	105.9	26.5	107.1	81.9	280.7	248.6	98.3	86.9	62.7	62.7	4.8	95.6		
1931	11.3	64	31	5.9	4.3	3.5	2.7	4.4	22.2	2.2	1.1	2.3	69.5	110.7	26.5	114.3	84.8	287.0	247.1	117.7	103.3	64.6	64.6	7.3	104.0		
1930	11.4	63	30	6.0	5.8	4.3	2.5	11.5	12.2	2.2	1.0	2.0	73.9	104.5	25.9	114.7	80.8	273.2	247.0	127.0	103.8	71.0	71.0	8.9	105.6		
1929	12.6	67	33	6.6	7.1	1.4	1.5	6.2	44.5	1.4	1.5	2.8	76.0	107.8	24.6	120.2	87.8	297.4	273.2	163.4	146.5	71.9	71.9	8.9	106.5		
New York:																											
1933	11.9	58	26	7.1	4.4	2.6	2.5	2.6	16.5	2.2	1.9	1.7	63.2	128.2	32.6	92.7	54.5	364.5	308.3	123.3	111.9	69.4	69.4	6.5	78.5		
1932	12.2	64	30	6.4	4.0	2.7	4.5	2.9	16.4	3.5	1.8	1.7	69.6	125.3	33.0	81.0	55.0	369.6	314.6	136.7	124.6	68.5	68.5	6.7	61.1		
1931	12.7	68	32	6.4	2.7	2.9	2.6	2.6	23.3	3.2	1.1	1.9	71.8	124.5	35.0	84.3	58.6	365.3	312.3	161.8	145.6	68.2	68.2	9.3	74.9		

1930	64	30	6.0	9	3.3	1.6	2.7	3.6	11.8	.3	1.2	8	2.9	76.5	122.7	28.9	85.1	54.5	298.7	145.4	133.5	72.4	9.4	83.4
1929	69	33	5.8	.8	2.3	2.2	3.4	6.9	48.0	.3	1.2	1.2	5.3	82.2	131.2	28.4	96.0	63.2	391.1	172.2	72.5	9.9	82.5	
North Carolina:																								
1933	73	(1)	7.5	2.1	3.6	1.0	5.9	2.7	48.4	.5	.4	-.2	68.3	44.3	10.7	(1)	(1)	(1)	(1)	79.6	(1)	(1)	20.8	(1)
1932	71	(1)	6.7	3.4	2.6	1.0	8.5	3.5	27.2	.2	.9	-.9	67.0	45.6	11.6	(1)	(1)	(1)	(1)	104.3	(1)	(1)	15.5	(1)
1931	80	(1)	8.4	1.7	5.0	2.1	5.3	4.7	100.0	.4	.4	-.4	75.8	(1)	(1)	(1)	(1)	(1)	(1)	125.7	(1)	(1)	14.4	(1)
1930	84	(1)	8.1	1.8	4.0	1.1	11.2	4.6	37.9	.4	.6	1.1	5.2	(1)	(1)	(1)	(1)	(1)	(1)	118.5	(1)	(1)	28.9	(1)
1929	(1)	(1)	2.8	.9	1.7	1.7	9.2	6.5	139.4	.8	(1)	-.5	90.4	(1)	(1)	(1)	(1)	(1)	(1)	116.4	(1)	(1)	25.5	(1)
Ohio:																								
1933	53	19	6.7	1.0	3.1	3.6	2.1	1.9	35.3	.3	1.2	1.2	5.6	112.5	108.6	23.5	130.4	109.8	256.6	254.8	68.4	60.7	3.7	81.9
1932	60	25	5.8	1.8	4.2	4.1	7.0	3.5	41.5	.3	1.8	1.2	6.4	109.9	109.9	26.8	118.7	116.6	297.5	252.2	75.1	68.7	4.6	83.1
1931	62	28	6.2	1.7	3.5	4.4	1.7	2.0	48.5	.6	1.0	2.0	67.5	105.4	21.9	141.0	115.9	271.0	237.6	119.1	107.2	61.3	4.4	79.3
1930	60	25	6.5	1.7	5.1	2.8	3.8	3.0	26.0	.5	1.1	2.3	70.8	107.1	23.0	122.9	111.9	273.1	242.6	108.5	96.6	60.1	6.5	84.3
1929	70	33	6.5	1.1	6.3	2.8	10.4	3.3	107.4	.6	1.8	1.8	8.3	76.0	18.7	(1)	(1)	116.3	(1)	121.8	(1)	6.2	90.2	
Pennsylvania:																								
1933	57	26	5.4	5	1.7	4.1	2.9	4.6	2.3	70.6	.6	.3	.9	53.5	103.4	28.6	111.9	88.5	296.9	290.7	93.4	80.7	7.0	101.3
1932	62	30	6.1	1.1	4.0	3.7	5.6	4.7	39.8	.4	.7	1.6	57.2	102.6	26.8	118.7	92.0	293.8	258.1	115.7	101.9	6.2	101.1	
1931	73	40	6.1	1.8	3.6	3.4	2.4	3.7	48.7	.3	1.2	2.6	61.8	97.9	27.0	118.5	89.7	288.2	254.8	148.4	132.3	12.3	100.0	
1930	74	43	6.4	1.3	3.6	3.7	4.7	5.0	27.7	.3	1.0	2.6	68.3	98.9	23.0	120.6	89.7	292.9	252.4	138.3	122.3	10.3	108.2	
1929	80	44	6.5	1.5	6.3	3.4	6.8	7.7	98.4	.5	1.2	2.5	71.5	101.5	24.4	130.3	98.0	298.1	280.3	163.8	142.6	13.0	114.3	
South Dakota:																								
1933	64	31	4.3	3.3	1.1	2.9	4.6	2.3	70.6	.6	.3	.9	45.0	88.2	32.9	107.9	81.5	191.6	159.8	89.8	79.7	49.3	4.6	58.8
1932	52	24	4.2	2.0	(1)	1.4	3.5	3.7	37.0	.1	.3	.9	41.4	81.9	16.1	84.2	67.2	179.0	158.9	63.5	50.9	59.2	4.3	39.4
1931	60	28	4.9	1.4	(1)	1.6	5.6	2.6	34.0	.2	.6	.3	34.0	81.5	30.1	100.1	62.5	153.5	131.7	89.0	72.3	69.1	6.0	38.3
1930	57	27	6.8	1.6	3.2	1.2	3.5	2.0	27.3	.6	.3	(1)	42.0	68.3	19.2	82.8	53.0	135.2	112.2	75.8	62.9	52.5	7.3	48.9
1929	69	37	6.3	1.8	3.5	4.1	3.0	1.5	87.3	.2	.9	2.6	54.0	63.4	20.6	89.3	54.9	150.3	133.9	94.8	80.7	63.1	4.4	34.9
Tennessee:																								
1933	73	47	6.1	4.3	2.3	1.1	6.1	2.7	62.0	.7	1.1	.8	92.6	56.7	10.7	86.7	69.8	116.1	99.2	98.0	85.8	72.3	14.4	58.9
1932	70	43	7.0	5.2	2.6	1.7	4.6	3.5	89.3	.4	.8	1.9	98.8	64.1	10.7	89.8	61.5	118.2	103.5	164.0	95.1	70.7	14.2	68.9
1931	73	48	8.3	3.3	7.0	2.4	4.2	2.7	63.6	.5	.4	6.6	110.5	64.7	10.4	86.4	61.3	131.8	116.9	126.5	115.4	61.7	9.0	67.4
1930	76	48	9.2	4.2	7.7	1.5	6.3	3.4	47.9	.8	1.0	16.8	132.4	54.6	10.7	104.2	61.6	147.3	121.8	122.1	110.6	68.2	16.6	81.7
1929	86	61	9.7	3.7	5.5	2.4	6.7	4.2	189.7	1.0	1.5	2.1	156.2	54.8	10.2	103.4	68.0	137.8	136.2	124.3	111.9	68.2	11.6	70.7
Virginia:																								
1933	71	(1)	6.1	2.5	3.6	1.7	4.7	2.4	63.1	.2	.5	1.2	84.6	73.1	15.4	130.5	104.1	217.9	199.8	93.1	82.6	86.0	12.9	92.8
1932	70	(1)	6.9	2.7	3.6	1.2	17.3	5.1	49.8	.7	.8	1.7	90.4	67.9	13.7	117.5	94.0	207.6	191.9	96.9	85.3	60.1	11.7	98.7
1931	76	(1)	8.6	2.6	5.6	1.7	5.3	3.1	84.0	.3	.7	2.7	94.5	62.8	16.9	134.4	107.7	234.2	215.5	125.4	113.2	57.4	8.9	112.3
1930	73	(1)	7.8	2.0	6.6	1.4	14.0	4.7	41.8	.8	1.2	3.2	62.9	63.1	13.7	132.1	100.4	217.9	197.2	119.6	104.2	72.3	18.1	112.9
1929	83	(1)	7.0	2.7	6.5	1.9	10.5	4.5	170.0	.5	1.4	1.8	98.9	63.1	11.0	136.1	96.3	214.2	184.7	105.0	92.7	63.1	12.0	102.6
West Virginia:																								
1933	(1)	(1)	5.2	3.3	4.1	1.6	5.2	4.0	55.8	1.3	.2	1.1	56.0	66.7	10.5	103.6	72.6	126.4	115.0	84.1	73.0	61.5	15.7	80.1
1932	(1)	(1)	5.6	4.1	16.5	2.4	13.7	8.6	52.3	.7	.4	1.3	56.0	61.9	13.2	109.1	80.5	122.3	109.7	100.0	88.9	64.2	15.8	63.9
1931	(1)	(1)	5.2	4.7	2.9	1.9	7.5	3.0	58.7	.5	.3	.9	59.2	56.3	10.7	97.3	70.0	138.9	114.6	122.3	113.0	59.6	12.8	61.4
1930	(1)	(1)	6.4	5.2	7.7	2.6	16.5	4.5	36.5	.3	.3	1.7	71.1	55.3	12.7	90.4	58.6	154.1	118.5	112.5	105.6	62.5	20.1	58.2
1929	(1)	(1)	6.2	8.0	6.3	1.2	12.5	3.4	167.0	.7	.7	1.0	72.6	60.3	9.2	91.2	52.6	169.0	119.1	125.7	103.4	66.5	30.3	58.5
Wisconsin:																								
1933	86	2.1	5.6	.5	1.5	1.6	1.6	.5	43.0	.3	.5	.7	44.0	108.7	27.0	(1)	92.5	(1)	237.1	(1)	65.8	(1)	6.5	65.9
1932	81	2.1	4.5	.3	2.7	2.3	2.7	1.9	36.1	.5	1.1	1.1	49.4	117.9	23.7	(1)	91.4	(1)	223.7	(1)	78.8	(1)	5.9	69.2
1931	61	(1)	5.0	.3	2.5	2.2	2.1	2.9	7.1	.3	2.0	1.8	52.3	115.8	(1)	(1)	(1)	(1)	(1)	(1)	93.6	(1)	8.0	(1)
1930	61	(1)	5.1	1.0	4.1	3.2	4.4	2.4	20.0	.3	.8	2.6	55.4	113.7	(1)	(1)	(1)	(1)	(1)	(1)	89.4	(1)	7.9	(1)
1929	71	(1)	11.7	1.0	4.1	3.2	4.4	2.6	74.8	.4	1.9	5.7	57.5	103.2	(1)	(1)	(1)	(1)	(1)	(1)	98.7	(1)	12.7	(1)

! Data not available.

! No deaths.

COURT DECISION RELATING TO PUBLIC HEALTH

Nature of liability of city for nuisance caused in part by effluent from municipal septic tank.—(Minnesota Supreme Court; *Johnson et ux. v. City of Fairmont et al.*, 247 N.W. 572; decided Mar. 17, 1933.) The city of Fairmont discharged the effluent from its septic tank into a certain creek. Waste matter from two canning factories in the city also found its way into the said creek. This creek flowed through a dairy farm, and the farm's owners, husband and wife, brought action against the city and the canning company to recover damages for the nuisance alleged to have resulted from the pollution of the creek. A verdict in favor of the plaintiffs was rendered against the defendants jointly. The defendants then moved separately for judgment notwithstanding the verdict, and the trial court granted the defendants' respective motions. From the orders granting the motions, the plaintiffs appealed to the supreme court.

That court said that the evidence was sufficient to sustain the finding of the jury that the consequences from the acts of either defendant would constitute a nuisance, but it also stated that the serious question before it was whether tort-feasors acting independently, each causing damage, could be held jointly liable in an action for damages. The court put the matter thus:

* * * Each [defendant] acted independently of the other, but each knew that the other was discharging matter in the creek that was producing offensive odors on plaintiffs' premises and knew that the plaintiffs claimed that a nuisance was thereby created thereon. No attempt was made at the trial to apportion or separate the damages. The plaintiffs attempt to hold defendants as joint tort-feasors. May this be done? * * *

In affirming the action of the lower court, the supreme court stated, in part, as follows:

The weight of authority or general rule is that acts of independent tort-feasors, each of which cause some damage, may not be combined to create a joint liability at law for damages. * * *

In the instant case there is no evidence to prove any concert of action between defendants to the injury of plaintiffs. There is no conspiracy. There is no evidence of any connection by joint action between the city discharging its effluent from its sewage tank and the canning factory discharging its waste. Each acted solely in its own interest. Each wronged plaintiffs, who suffered from defendants' independent acts; not from their joint acts. Their acts were separate as to time and place. Possibly there were times when both were concurrent. There was no concert of action, no common intent, no oneness of act. The point is that the wrong itself is not joint. The liability of each of the defendants began with their acts on their own premises, that being where they started the respective discharges on their way; and the act of each was wholly separate and independent of concert with the other. Their torts were separate, several, and independent when committed, and do not become joint because their consequences united and mingled on or near plaintiffs' farm.

DEATHS DURING WEEK ENDED NOV. 11, 1933

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

	Week ended Nov. 11, 1933	Correspond- ing week 1932
Data from 85 large cities of the United States:		
Total deaths.....	7, 453	7, 200
Deaths per 1,000 population, annual basis.....	10. 4	10. 3
Deaths under 1 year of age.....	500	545
Deaths under 1 year of age per 1,000 estimated live births (81 cities).....	43	45
Deaths per 1,000 population, annual basis, first 45 weeks of year.....	10. 8	11. 0
Data from industrial insurance companies:		
Policies in force.....	67, 499, 001	70, 000, 097
Number of death claims.....	10, 871	9, 464
Death claims per 1,000 policies in force, annual rate.....	8. 4	7. 1
Death claims per 1,000 policies, first 45 weeks of year, annual rate.....	9. 7	9. 5

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

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended Nov. 18, 1933, and Nov. 19, 1932

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 18, 1933, and Nov. 19, 1932

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932
New England States:								
Maine.....	7	2	1	4	6	1	0	1
New Hampshire.....		1			12		0	0
Vermont.....	1				4	4	0	0
Massachusetts.....	29	45		4	292	78	0	2
Rhode Island.....	3	2					0	1
Connecticut.....	26	3	3	29	5	11	2	2
Middle Atlantic States:								
New York.....	44	58	15	18	287	345	1	7
New Jersey.....	20	17	15	19	23	211	4	2
Pennsylvania.....	83	113			138	196	3	4
East North Central States:								
Ohio.....	83	72	4	4	9	86	0	1
Indiana.....	102	110	30	52	15	2	3	3
Illinois.....	55	130	22	28	21	47	8	14
Michigan.....	26	28	1	25	72	157	1	8
Wisconsin.....	11	9	25	22	67	115	0	0
West North Central States:								
Minnesota.....	18	23			80	110	1	0
Iowa.....	25	13			2	1	0	1
Missouri.....	64	80	12	3	22	11	0	0
North Dakota.....	15	7	1		27	36	1	0
South Dakota.....	5	1		5	148	3	0	0
Nebraska.....	12	27	9	1	6	2	0	0
Kansas.....	22	30		1	8	7	1	0
South Atlantic States:								
Delaware.....	4	1		1			1	0
Maryland.....	29	24	5	13	6	12	0	1
District of Columbia.....	13	3		3	11	1	0	1
Virginia.....	95	48			28	42	0	0
West Virginia.....	62	49	32	10	1	35	0	1
North Carolina.....	149	66	28	10	138	68	4	0
South Carolina.....	31	30	355	500	119	17	0	0
Georgia.....	48	45			92		1	0
Florida.....	16	37	1	3	1	1	0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 18, 1933, and Nov. 19, 1932—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932
East South Central States:								
Kentucky.....	142	50		55	5	35	0	0
Tennessee.....	65	67	49	271	114	1	3	0
Alabama ¹	45	55	22	204	21	3	1	0
Mississippi.....	32	38					0	0
West South Central States:								
Arkansas.....	30	17	15	24	36		0	0
Louisiana.....	61	35	11	23	5	7	1	0
Oklahoma ¹	72	56	47	31	38	2	0	0
Texas ¹	346	145	175	71	35		1	0
Mountain States:								
Montana.....	6	2	7	1		153	0	0
Idaho.....		5	1	12	4		0	0
Wyoming.....	2				22	5	0	0
Colorado.....	3	14			2	3	0	0
New Mexico.....	14	18	1	146	19	3	0	1
Arizona.....	5		15	175	2		0	0
Utah ¹				333	41		0	0
Pacific States:								
Washington.....	13	9		1	55	4	1	0
Oregon.....	1	7	22	81	18	39	0	0
California.....	53	75	55	903	172	49	4	4
Total.....	1,988	1,667	1,009	3,086	2,229	1,907	42	49

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932
New England States:								
Maine.....	1	0	14	10	0	0	2	4
New Hampshire.....	3	0	19	19	0	0	0	1
Vermont.....	2	0	9	8	0	0	0	0
Massachusetts.....	0	0	170	265	0	0	2	3
Rhode Island.....	0	0	12	24	0	0	0	0
Connecticut.....	0	0	60	55	0	0	1	1
Middle Atlantic States:								
New York.....	10	5	328	409	0	22	16	18
New Jersey.....	2	5	118	154	0	0	5	6
Pennsylvania.....	15	10	443	416	0	0	32	23
East North Central States:								
Ohio.....	0	0	457	322	0	49	5	18
Indiana.....	2	3	177	131	2	8	8	7
Illinois.....	2	5	381	361	1	0	14	21
Michigan.....	1	2	300	210	0	11	9	7
Wisconsin.....	2	1	72	89	18	0	0	2
West North Central States:								
Minnesota.....	0	1	64	85	5	2	5	2
Iowa ¹	0	1	95	26	3	6	3	0
Missouri.....	0	0	130	93	0	1	6	5
North Dakota.....	2	0	52	4	0	7	2	1
South Dakota.....	0	0	11	12	0	0	1	0
Nebraska.....	3	1	45	45	4	7	0	2
Kansas.....	1	2	131	102	0	2	4	2
South Atlantic States:								
Delaware.....	0	0	4	3	0	0	5	1
Maryland ¹	0	0	91	92	0	0	13	12
District of Columbia.....	0	0	17	7	0	0	3	6
Virginia.....	0	2	113	86	0	0	8	13
West Virginia.....	0	0	125	71	1	0	11	17
North Carolina ¹	1	0	234	99	0	0	4	3
South Carolina.....	1	0	5	12	0	1	8	7
Georgia ¹	0	0	17	36	0	0	12	15
Florida ¹	0	0	2	8	0	0	3	2

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 18, 1933, and Nov. 19, 1932—Continued.

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932	Week ended Nov. 18, 1933	Week ended Nov. 19, 1932
East South Central States:								
Kentucky.....	1	1	122	56	1	4	10	14
Tennessee.....	3	2	113	63	0	0	11	23
Alabama ¹	0	0	46	41	0	1	7	2
Mississippi.....	0	2	22	23	0	0	5	0
West South Central States:								
Arkansas.....	1	0	15	29	1	0	4	6
Louisiana.....	1	2	27	24	0	1	19	8
Oklahoma ²	0	1	36	23	8	0	14	19
Texas ³	0	0	108	93	4	12	50	6
Mountain States:								
Montana.....	0	0	15	16	0	0	3	3
Idaho.....	0	0	2	2	3	4	1	0
Wyoming.....	0	0	11	6	0	0	1	0
Colorado.....	0	1	21	26	22	0	3	1
New Mexico.....	0	0	32	12	0	1	16	8
Arizona.....	0	0	11	9	0	0	0	0
Utah ⁴	0	0	6	2	0	0	1	1
Pacific States:								
Washington.....	5	4	39	44	1	4	5	2
Oregon.....	1	1	41	27	6	1	1	0
California.....	4	2	225	179	5	0	9	11
Total.....	64	54	4,588	3,944	85	144	342	304

¹ New York City only.

² Week ended earlier than Saturday.

³ Typhus fever, week ended Nov. 18, 1933, 28 cases, as follows: North Carolina, 1; Georgia, 13; Florida, 2; Alabama, 10; Texas, 2.

⁴ Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Men- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Polio- myelitis	Scarlet fever	Small- pox	Ty- phoid fever
<i>October 1933</i>										
Arizona.....		14	18	2	60		0	32	0	13
California.....	8	164	123	8	666	7	24	667	34	72
Iowa.....	1	82	2	1	6		13	272	4	16
Maryland.....	2	116	39	3	11	2	10	300	0	84
Michigan.....	3	123	19	13	41		21	834	1	80
Minnesota.....		79	4		16		95	212	12	23
Montana.....	1	9	9		10		2	65	0	19
New York.....	6	194		6	521		166	877	0	95
North Carolina.....	3	726	56		160	44	3	654	0	65
Ohio.....	4	446	191	11	66		80	1,860		148
Puerto Rico.....		82	175	5,758	84		0			19
South Carolina.....		315	972	1,605	113	118	1	65	0	49
West Virginia.....	5	467	103		29		15	543	20	131
Wisconsin.....		27	118		114		12	263	37	7

October 1933		October 1933—Contd.		October 1933—Contd.	
Actinomycosis:	Cases	Leprosy:	Cases	Tetanus:	Cases
Minnesota.....	1	Puerto Rico.....	1	California.....	7
Anthrax:		Lethargic encephalitis:		Iowa.....	1
Michigan.....	1	California.....	2	Maryland.....	3
Chicken pox:		Iowa.....	13	New York.....	7
Arizona.....	15	Michigan.....	8	Ohio.....	1
California.....	765	Minnesota.....	1	Puerto Rico.....	15
Iowa.....	80	New York.....	16	Tetanus, infantile:	
Maryland.....	106	Ohio.....	8	Puerto Rico.....	13
Michigan.....	568	South Carolina.....	3	Trachoma:	
Minnesota.....	358	West Virginia.....	1	Arizona.....	154
Montana.....	228	Wisconsin.....	1	California.....	26
New York.....	789	Mumps:		Maryland.....	1
North Carolina.....	39	Arizona.....	10	Montana.....	46
Ohio.....	752	California.....	765	Ohio.....	8
Puerto Rico.....	35	Iowa.....	10	Puerto Rico.....	57
South Carolina.....	14	Maryland.....	31	Trichinosis:	
West Virginia.....	89	Michigan.....	111	California.....	13
Wisconsin.....	884	Montana.....	3	Maryland.....	2
Conjunctivitis:		Ohio.....	109	Michigan.....	1
Arizona.....	34	Puerto Rico.....	96	New York.....	24
Dengue:		South Carolina.....	19	Tularaemia:	
South Carolina.....	4	West Virginia.....	2	California.....	1
Diarrhea:		Wisconsin.....	45	Michigan.....	1
Maryland.....	32	Ophthalmia neonatorum:		Minnesota.....	9
South Carolina.....	379	California.....	4	Ohio.....	1
Diarrhea and enteritis:		Iowa.....	1	West Virginia.....	1
Ohio (under 2 years).....	30	Maryland.....	1	Wisconsin.....	2
Dysentery:		New York.....	2	Typhus fever:	
Arizona.....	5	North Carolina.....	1	North Carolina.....	3
California (amebic).....	16	Ohio.....	83	South Carolina.....	5
California (bacillary).....	55	Puerto Rico.....	9	Undulant fever:	
Iowa.....	3	South Carolina.....	12	Arizona.....	1
Maryland.....	42	Wisconsin.....	3	California.....	11
Minnesota.....	3	Paratyphoid fever:		Iowa.....	4
Minnesota (amebic).....	3	California.....	3	Maryland.....	3
Montana.....	1	Michigan.....	2	Michigan.....	5
New York.....	56	Minnesota.....	1	Minnesota.....	7
Ohio.....	7	New York.....	11	Montana.....	3
Puerto Rico.....	109	North Carolina.....	2	New York.....	12
South Carolina (amebic).....	1	South Carolina.....	12	North Carolina.....	3
Food poisoning:		Psittacosis:		Ohio.....	4
California.....	61	California.....	1	South Carolina.....	1
Ohio.....	47	Puerperal septicemia:		West Virginia.....	1
German measles:		Ohio.....	2	Wisconsin.....	10
Arizona.....	2	Puerto Rico.....	8	Vincent's infection:	
California.....	24	Rabies in animals:		Maryland.....	16
Maryland.....	2	California.....	63	Michigan.....	22
Montana.....	4	Maryland.....	1	Montana.....	7
New York.....	29	South Carolina.....	13	New York.....	171
North Carolina.....	8	Rabies in man:		Whooping cough:	
Ohio.....	7	Michigan.....	2	Arizona.....	47
Wisconsin.....	17	Rocky Mountain spotted fever:		California.....	799
Granuloma, coccidioidal:		North Carolina.....	1	Iowa.....	96
California.....	4	Scabies:		Maryland.....	211
Hookworm disease:		Maryland.....	22	Michigan.....	592
Maryland.....	1	Montana.....	14	Minnesota.....	160
South Carolina.....	70	Septic sore throat:		Montana.....	33
Impetigo contagiosa:		California.....	1	New York.....	1,208
Arizona.....	40	Michigan.....	46	North Carolina.....	399
Iowa.....	2	Montana.....	4	Ohio.....	471
Maryland.....	159	New York.....	19	Puerto Rico.....	164
Montana.....	12	North Carolina.....	19	South Carolina.....	102
Lead poisoning:		Ohio.....	171	West Virginia.....	82
Maryland.....	1	Silicosis:		Wisconsin.....	808
Ohio.....	31	Montana.....	2		
		Ohio.....	1		

¹ Exclusive of New York City.

WEEKLY REPORTS FROM CITIES

City reports for week ended Nov. 11, 1933

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	2		1	0	2	0	0	0	1	0	27
New Hampshire:											
Concord	0		0	0	1	0	0	0	0	0	7
Manchester	0		1	3	1	1	0	0	0	0	5
Nashua	0		0	0	0	12	0	0	0	12	
Vermont:											
Barre	0		0	28	0	0	0	2	0	0	3
Burlington	3		0	0	0	0	0	0	0	5	14
Massachusetts:											
Boston	7		0	36	15	24	0	12	0	39	197
Fall River	1		0	1	2	6	0	3	0	0	36
Springfield	0		0	0	0	2	0	1	0	14	21
Worcester	0	2	0	88	7	3	0	3	1	8	47
Rhode Island:											
Pawtucket	3		0	0	0	1	0	0	0	0	14
Providence	1		0	0	2	7	0	1	1	12	65
Connecticut:											
Bridgeport	0		0	0	2	2	0	0	0	0	35
Hartford	1	1	0	0	2	17	0	1	0	0	31
New Haven	0		0	0	1	4	0	0	1	3	42
New York:											
Buffalo	2		1	10	24	12	0	6	0	16	118
New York	27	27	8	9	138	95	0	88	11	92	1,385
Rochester	1		0	2	4	19	0	0	0	2	55
Syracuse	0		0	0	2	0	0	2	4	31	42
New Jersey:											
Camden	5	1	1	0	1	6	0	0	0	0	20
Newark	1	6	1	2	9	1	0	5	0	23	76
Trenton	1		1	0	5	1	0	0	0	6	42
Pennsylvania:											
Philadelphia	4	8	9	54	22	65	0	22	2	28	433
Pittsburgh	6		2	2	18	23	0	4	0	21	141
Reading	0		0	0	0	3	0	0	0	6	22
Ohio:											
Cincinnati	12		1	17	5	24	0	8	0	9	100
Cleveland	12	37	1	2	8	33	0	10	0	54	162
Columbus	4		0	1	3	20	0	2	0	1	59
Toledo	6		0	2	2	30	0	3	0	3	60
Indiana:											
Fort Wayne	2		0	0	1	7	0	0	0	0	20
Indianapolis	9		0	2	12	9	0	4	0	4	
South Bend	0		0	0	1	3	0	0	0	1	10
Terre Haute	1		0	1	0	0	0	0	0	0	12
Illinois:											
Chicago	2	3	1	4	43	128	0	25	2	60	673
Springfield	0		0	2	1	6	0	11	0	3	19
Michigan:											
Detroit	9	1	2	6	18	49	0	22	0	89	220
Flint	2		0	2	3	19	0	2	0	5	15
Grand Rapids	2		0	0	7	5	0	0	1	0	42
Wisconsin:											
Kenosha	2		0	1	0	6	0	1	1	5	5
Madison	0		0	0	0	1	0	1	0	19	24
Milwaukee	4	1	1	0	3	13	0	2	2	27	80
Racine	0		0	1	0	2	0	0	0	8	12
Superior	0		0	0	0	1	0	0	0	5	4
Minnesota:											
Duluth	0		1	0	0	7	0	0	0	0	18
Minneapolis	5		1	0	6	10	1	0	1	5	91
St. Paul	0		0	0	3	5	0	3	3	5	50
Iowa:											
Des Moines	3			0		18	0		0	0	22
Sioux City	1			0		1	0		0	0	
Waterloo	3			0		0	0		0	3	
Missouri:											
Kansas City	4		1	1	12	19	0	5	0	7	96
St. Joseph	2		0	0	2	3	0	1	0	0	20
St. Louis	23		1	14	6	18	0	8	2	9	202
North Dakota:											
Fargo	0		0	2	1	5	0	0	0	0	4
Grand Forks	0		0	0	0	0	0	0	0	0	
South Dakota:											
Aberdeen	0		0	2	0	0	0	0	0	0	

City reports for week ended Nov. 11, 1933—Continued

State and city	Diph- theria cases	Influenza		Mea- sles cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Nebraska:											
Omaha.....	1		0	1	6	9	3	0	0	6	66
Kansas:											
Topeka.....	0		0	0	1	4	0	0	0	1	12
Wichita.....	0		0	0	1	14	0	0	0	0	32
Delaware:											
Wilmington.....	0		0	1	0	0	0	0	0	3	34
Maryland:											
Baltimore.....	4	2	2	1	20	51	0	7	0	59	230
Cumberland.....	4		0	0	4	5	0	1	0	0	10
Frederick.....	0		0	0	0	3	0	0	0	0	1
District of Col.:											
Washington.....	14	1	1	7	6	10	0	9	0	10	139
Virginia:											
Lynchburg.....	3		0	1	0	2	0	1	0	1	10
Richmond.....	4		2	0	4	5	0	1	3	0	49
Roanoke.....	1		0	0	0	8	0	0	0	0	18
West Virginia:											
Charleston.....	8	5	1	0	14	14	0	1	0	0	30
Huntington.....	3		0	0	0	15	1	0	0	0	0
Wheeling.....	0	2	0	0	2	7	0	0	0	1	20
North Carolina:											
Raleigh.....	0		0	0	0	10	0	1	0	0	11
Wilmington.....	0		1	1	2	0	1	0	0	0	9
Winston-Salem.....	6	1	0	40	3	4	0	2	0	0	19
South Carolina:											
Charleston.....	0	13	0	0	7	0	0	2	0	0	24
Columbia.....											
Greenville.....	0		0	1	1	1	0	0	0	0	9
Georgia:											
Atlanta.....	9	5	1	3	7	7	0	8	0	3	66
Brunswick.....	0		0	0	1	0	0	0	0	0	8
Savannah.....	1	7	0	0	1	1	0	2	0	0	39
Florida:											
Miami.....	0		0	0	0	0	0	2	0	3	0
Tampa.....	1		0	0	0	2	0	2	0	0	23
Kentucky:											
Ashland.....	5			0		0	0		2	0	0
Lexington.....	5		0	0	2	4	0	2	0	0	14
Louisville.....	27		0	0	10	9	0	6	0	1	80
Tennessee:											
Memphis.....	8		0	0	13	14	0	5	4	3	100
Nashville.....	4		1	0	1	11	0	2	0	0	40
Alabama:											
Birmingham.....	10	1	2	1	5	5	0	4	1	2	66
Mobile.....	3		0	0	0	0	0	1	0	0	24
Montgomery.....	6			0		1	0		0	2	0
Arkansas:											
Fort Smith.....	3			0		0	0		0	0	0
Little Rock.....	1		0	0	1	2	0	1	0	0	4
Louisiana:											
New Orleans.....	9	3	3	0	9	4	0	6	0	0	140
Shreveport.....	5		0	0	2	4	0	0	0	0	35
Oklahoma:											
Tulsa.....	8			3		2	0		1	0	0
Texas:											
Dallas.....	31	4	4	0	5	5	0	0	1	0	70
Fort Worth.....	12		2	0	2	8	1	0	0	1	39
Galveston.....	1		0	0	2	0	0	2	0	0	14
Houston.....	18		0	1	4	3	0	4	0	0	71
San Antonio.....	5		2	0	4	4	0	9	3	0	61
Montana:											
Billings.....	1		0	0	0	2	0	0	0	0	9
Great Falls.....	0		0	0	0	0	0	0	0	1	9
Helena.....	0		0	0	0	0	0	0	0	0	6
Missoula.....	0		0	0	0	3	0	0	0	0	4
Idaho:											
Boise.....	0		0	1	1	0	2	0	0	0	10
Colorado:											
Denver.....	2	21	0	6	5	19	0	2	0	60	72
Pueblo.....	0		0	0	0	1	0	1	1	0	4

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City reports for week ended Nov. 11, 1933—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
New Mexico:											
Albuquerque.....	1		0	0	1	0	0	5	0	1	18
Utah:											
Salt Lake City.....	0		1	87	3	7	0	1	0	6	35
Nevada:											
Reno.....	0		0	0	0	1	0	0	0	0	3
Washington:											
Seattle.....	0			1	3	9	0	4	3	16	78
Spokane.....	0	2	2	46		5	2	1	0	0	30
Tacoma.....	0		0	0	5	1	0	1	0	1	29
Oregon:											
Portland.....	0	1	1	0	1	22	1	3	0	0	56
Salem.....	0	2	0	0	0	0	0	0	0	3	0
California:											
Los Angeles.....	20	22	2	6	19	55	2	19	0	55	296
Sacramento.....	1		0	3	2	3	0	4	1	1	29
San Francisco.....	3	1	0	1	6	5	0	4	0	25	149

State and city	Meningococcus meningitis		Poliomyelitis cases	State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				District of Columbia:			
Worcester.....	0	0	1	Washington.....	0	1	0
New York:				North Carolina:			
New York.....	2	0	1	Winston-Salem.....	1	0	0
Rochester.....	0	0	1	Georgia:			
Syracuse.....	0	0	1	Atlanta.....	2	0	0
Pennsylvania:				Kentucky:			
Philadelphia.....	1	0	0	Lexington.....	0	0	1
Ohio:				Tennessee:			
Cleveland.....	0	0	1	Memphis.....	0	1	0
Illinois:				Nashville.....	0	0	2
Chicago.....	6	1	1	Texas:			
Minnesota:				San Antonio.....	0	0	1
Duluth.....	0	0	1	Washington:			
Minneapolis.....	0	0	2	Seattle.....	0	0	1
Iowa:				Tacoma.....	1	1	1
Sioux City.....	1	0	0	California:			
Missouri:				Los Angeles.....	0	2	2
St. Louis.....	1	0	1	San Francisco.....	1	0	0
Maryland:							
Baltimore.....	0	0	1				

Lethargic encephalitis.—Cases: Pittsburgh, Pa., 1; Cleveland, 1; Kansas City, Mo., 1; St. Louis, 1; Salt Lake City, 1.

Pellagra.—Cases: Wilmington, N.C., 1; Winston-Salem, N.C., 1; Charleston, S.C., 1; Atlanta, 1; Memphis, 1; New Orleans, 1.

Rabies in man.—Greenville, S.C., 1 death.

Typhus fever.—Cases: New York, 1; Baltimore, 1; Wilmington, N.C., 1; Atlanta, 3; Savannah, 1; Montgomery, Ala., 2.

FOREIGN AND INSULAR

CANADA

Ontario Province—Communicable diseases—Four weeks ended October 28, 1933.—The Department of Health of the Province of Ontario, Canada, reports certain communicable diseases for the 4 weeks ended October 28, 1933, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Actinomycosis.....	1	—	Paratyphoid fever.....	15	1
Cerebrospinal meningitis.....	3	3	Pneumonia.....	—	85
Chicken pox.....	309	—	Polio-myelitis.....	11	—
Diphtheria.....	29	3	Scarlet fever.....	210	—
Dysentery.....	3	—	Septic sore throat.....	6	1
Erysipelas.....	5	—	Syphilis.....	259	1
German measles.....	5	—	Tetanus.....	—	1
Gonorrhoea.....	261	—	Trench mouth.....	1	—
Influenza.....	25	1	Tuberculosis.....	147	39
Jaundice (infectious).....	16	—	Tularaemia.....	1	—
Lethargic encephalitis.....	3	2	Typhoid fever.....	65	4
Measles.....	29	—	Undulant fever.....	17	—
Mumps.....	82	—	Whooping cough.....	346	3

CUBA

Habana—Communicable diseases—Four weeks ended November 4, 1933.—During the 4 weeks ended November 4, 1933, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria.....	36	3	Scarlet fever.....	1	—
Malaria.....	151	3	Tuberculosis.....	27	—
Polio-myelitis.....	2	1	Typhoid fever.....	40	3
Rabies.....	1	1			

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

(NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for Nov. 24, 1933, pp. 1431-1442. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued Dec. 29, 1933, and thereafter, at least for the time being, in the issue published on the last Friday of each month.)

Cholera

Philippine Islands.—During the week ended November 18, 1933, cholera was reported in the Philippine Islands as follows: Bohol Province—Antequera, 2 cases, 2 deaths; Carmen, 1 case, 1 death; Clarin, 1 case, 1 death; Inabanga, 9 cases, 4 deaths; Jetafe, 3 cases, 2 deaths;

Mabini, 2 cases; Tubigon, 21 cases, 15 deaths. Cebu Province—Cebu City, 4 cases, 1 death; Naga, 1 case, 1 death; Talisay, 2 cases, 2 deaths.

Plague

Argentina.—During the month of October 1933 plague was reported in Argentina as follows: Recreo, Catamarca Province, 5 cases, 2 deaths; Santa Fe, 1 case.

Hawaii Territory.—During the week ended November 11, 1933, plague-infected rats were found in Hamakua District, island of Hawaii, as follows: Paauilo, 1 plague-infected rat on November 10 and Pohakea Homesteads, 1 plague-infected rat on November 7.

Yellow Fever

Senegal.—During the period October 1 to 10, 1933, yellow fever was reported in Senegal as follows: 1 case and 1 death at Bakel and 1 case and 1 death at Kaffrine.