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## OBSERVATIONS ON THE POSSIBILITY OF METHYL CHLORIDE POISONING BY INGESTION WITH FOOD AND WATER<sup>1</sup>

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### PURPOSE OF INVESTIGATION

The danger to life from the escape of noxious or inflammable refrigerating media into the air is being given considerable attention in the design and installation of mechanical refrigerating devices. In addition to atmospheric contamination and possible poisoning by inhalation, however, attention must also be given to possible contamination of food and poisoning by ingestion. In the present popular design of these devices the cooling mechanism is situated inside the comparatively air-tight cabinet with the food, and small leaks, which might be insignificant from the viewpoint of appreciable contamination of the external atmosphere, would create high internal concentrations. While there is no definite evidence that food poisoning has occurred or that this type of hazard exists with the refrigerants in current use, nevertheless, the possibility is a matter of concern to manufacturers of refrigerating devices and products, to health officials, and to the public.

The Bureau of Mines, with the cooperation of manufacturers of methyl chloride ( $\text{CH}_3\text{Cl}$ ), has been engaged in the study of acute<sup>2</sup> and chronic<sup>3</sup> poisoning resulting from exposure to contaminated air. At the request of the Roessler & Hasslacher Chemical Co., one of the manufacturers, the work has been extended to include poisoning by ingestion. The following is a summarized report of the work completed to date. The study will be resumed in the near future with an attempt to ascertain the lethal dosage of methyl chloride.

<sup>1</sup> This report represents work done under a cooperative agreement between the Bureau of Mines, Department of Commerce, and the Roessler and Hasslacher Chemical Corporation. Published by permission of the Director, U. S. Bureau of Mines.

<sup>2</sup> Sayers, R. R., Yant, W. P., Thomas, B. G. H., and Berger, L. B., Physiological response attending exposure to vapors of methyl bromide, methyl chloride, ethyl bromide, and ethyl chloride. U. S. Public Health Bulletin No. 185, 1923, 66 pp. Investigation conducted cooperatively with the Dow Chemical Co.

<sup>3</sup> To be published. Investigation conducted cooperatively with the Roessler & Hasslacher Chemical Co.

## SCOPE AND PLAN OF INVESTIGATION

The scope of the investigation was the study of the response of animals to ingestion of food and water contaminated with methyl chloride. It was originally planned to simulate practical conditions of leakage inside a refrigerator. This plan was changed early in the work, because it was difficult to ascertain the amount of methyl chloride absorbed by the food. The second plan, which was followed for the greater part of the work, was to feed the animals water saturated with methyl chloride at room temperatures. In this manner the loss during feeding was minimized and the dosage could be readily determined; also a larger dosage could be administered than was indicated by analysis of the food.

## CONTAMINATED FOOD

## TEST APPARATUS AND PROCEDURE

A standard household refrigerating unit was equipped with a saturating device shown in Figure 1. The food container *a* was a 20-liter capacity bell jar fitted with three perforated porcelain disks *b*, taken from large laboratory desiccators. The solid food *c* (meat and cheese) was placed loosely on these perforated plates and the liquid food (milk) was contained in a shallow crystallizing dish *d*. Methyl chloride from an exterior cylinder, *e*, was led through needle valve *f* and copper tubing to the bottom of the saturator, the ground-glass plate *g* being drilled to receive a 1-hole rubber stopper. The methyl chloride escaped through a copper vent tube, *h*, and water seal, *i*, to the atmosphere.

The procedure for exposing the food consisted of cooling the cabinet to approximately 35° F., placing the food in the bell jar, turning the gas into the jar, and allowing the saturating process to continue 15 to 18 hours, at least, and in the case of ground steak as long as 50 to 75 hours. The food was placed loosely on the perforated plates—ground steak in small ½-inch thick patties, sliced pressed ham in thin layers with glass tubing between each to allow gas circulation, butter in small table squares, and the milk in a layer approximately 1-inch deep in a large crystallizing dish. The methyl chloride was passed rather rapidly through the bell jar until analysis at the exit showed the effluent air to contain 90 per cent or more methyl chloride. The flow was then decreased until a slow continuous escape against one-half inch of water positive pressure was maintained through the escape trap. (Fig. 1, *i*.)

The food was taken from the saturator and fed to the animals as quickly as possible. Portions were simultaneously taken and immediately sealed in glass tubes for analysis.

## RESULTS OF TESTS

## ANALYSIS OF FOOD

Analysis of samples of the food taken after 15 to 18 hours' exposure showed less than 0.5 gram of methyl chloride per 100 grams of food in the milk, steak, and pressed ham, and but a trace in the cheese.

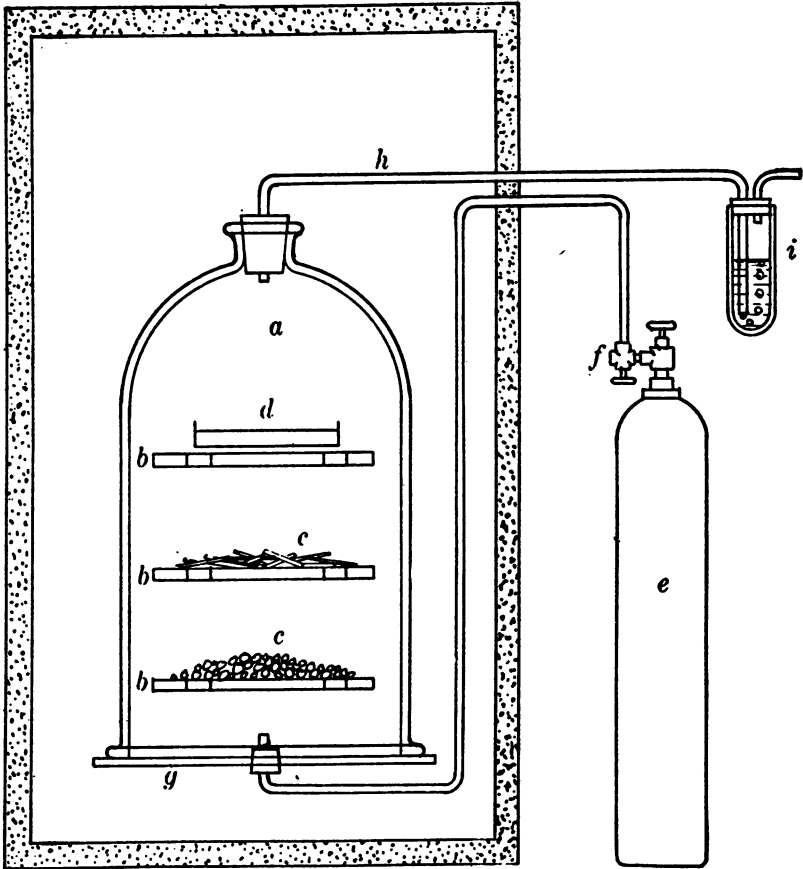


FIGURE 1.—Apparatus for saturating solid food with methyl chloride

## RESULTS OF FEEDING TESTS

Although the results of analysis of the samples of food did not indicate the possibility of poisoning by ingestion, one dog was fed milk and the other ground meat, the two foods which analysis indicated to have absorbed the most methyl chloride. Table 1 gives the quantity of food ingested.

TABLE 1.—Quantity of methyl-chloride contaminated food ingested

Duration of tests, days	Dog No. 1, grams of ground meat	Dog No. 2, cubic centi- meters of milk
1.....	532	119
2.....	500	310
3.....	356	284
4.....	715	146

These dogs did not exhibit any symptoms either during the experiment or during a month of observation following.

#### CONTAMINATED WATER

Methyl chloride is soluble in water to the extent of approximately 346 c. c., or 0.7 gram, of gas per 100 c. c. of water at 68° F. Considering this, the experimental procedure was changed from feeding solid food to feeding water approximately three-quarters to completely saturated at room temperatures. In this manner the dosage was increased over that ingested with solid food.

#### TEST APPARATUS AND PROCEDURE

The water was saturated by vigorous agitation in an atmosphere of 95 to 100 per cent methyl chloride. This process was conducted in an apparatus consisting of two 15-liter aspirator bottles with their lower openings connected by 36 inches of rubber hose and the top of one closed tight with a cork stopper fitted with a short shell glass tubing outlet closed by means of a short piece of rubber tubing and a screw clamp. The bottle in which the saturating was performed was completely filled with water by raising the companion bottle. The pinch clamp at the top was then closed and connected through a pressure regulator (a T tube with the side arm dipping under water) to a cylinder of compressed methyl chloride. The pinch clamp and cylinder valve were then opened in turn and, immediately following, the companion aspirator bottle was lowered, thus filling the bottle with methyl chloride by water displacement. An escape of a small excess of gas through the side arm of the pressure regulator was always maintained. When all but approximately 4 liters of the water had been displaced, the hose between the aspirator bottles was closed by means of a screw clamp and the companion bottle was disconnected. The saturating bottle was then shaken, gently at first to prevent marked reduced pressure occurring from the rapid solubility of the gas and vigorously later to assure saturation. Throughout the entire procedure the connection between the cylinder of gas and the saturating bottle was kept open and an escape of gas from the pressure

regulator was maintained. The latter supplied the gas as it was absorbed and also assured against air entering the saturator. The saturating procedure was continued until, on shaking the bottle with the methyl-chloride container valve closed, it showed no apparent decrease in pressure at the pressure regulator, thus indicating practically complete saturation. The screw clamp at the top of the saturator was then closed and the saturated water was preserved in an atmosphere of methyl chloride. The water was freshly prepared every three or four days. Most of the preparations were sampled and analyzed for methyl-chloride content.

#### COMPOSITION AND CHARACTER OF THE METHYL-CHLORIDE SATURATED WATER

Analysis of the water treated with methyl chloride in the manner described showed it to be 75 to 100 per cent saturated at 68° F. These saturation values are based on solubility coefficient of 346 c. c., or 0.7 gram, of methyl chloride per 100 c. c. of water at 68° F. The method of analysis was designed in this laboratory and will be described in a later report.

The freshly prepared water possessed a mild, rather agreeable odor of methyl chloride. The taste, however, was sharp, sweetish, and sickening when first taken into the mouth, followed almost immediately by a burning sensation. Persons would not drink more than a mouthful or two without being warned that the water was unfit for use. The test dogs drank the water only after they had been deprived of other liquids.

#### FEEDING PROCEDURE FOR WATER

Dogs which were deprived of liquid food and fresh water were given the methyl-chloride-contaminated water twice daily (morning and evening) in quantities as large as they would drink in a 5-minute interval. To minimize loss of methyl chloride to the air, the water was drawn from the container in 100-c. c. portions and added immediately to the dish from which a particular animal drank. When the thirst was satisfied, the water vessel was removed and the remaining water was measured and discarded. The total quantity ingested was taken as the difference between the sum of the portions added and the quantity remaining after feeding. The other food given the dogs consisted of meat and dog biscuits.

#### QUANTITY OF METHYL CHLORIDE INGESTED

Table 2 gives the average daily quantity of methyl chloride ingested by two dogs during the 171-day period of the tests. The dogs were not given contaminated water on Sundays. Also, on a number of occasions they refused the contaminated water.

TABLE 2.—Quantity of methyl chloride ingested with water

Dog No.	Days on which CH <sub>2</sub> Cl was ingested	Average consumption of water, cubic centimeters per day	Average amount of CH <sub>2</sub> Cl ingested, grams per day
11.....	116	175	1.04
12.....	115	180	1.07

The variations from the average amounts ingested as given in Table 2 ranged from refusal to drink on a number of occasions to a maximum consumption of 400 c. c. of water, or 2.8 grams of CH<sub>2</sub>Cl per day.

RESULTS OF TESTS

SYMPTOMS

The dogs exhibited no unnatural symptoms during the entire period of the test. They were lively and had good appetites. One hundred and five days after the test started, a litter of three apparently normal pups were born to dog No. 11. They were sired by dog No. 12. These pups remained on test with their mother until weaning time, and exhibited no unnatural symptoms.

Figure 2 shows weight curves for the test dogs and pups. A moderate decrease in weight occurred during the first eight weeks of the test. Following this, dog No. 12 recovered his normal weight and maintained it throughout the remaining four months. The normal weight curve of dog No. 11 is obviously obscured by the marked increase in weight during gestation, followed by a loss when the pups were born and during the period before weaning. Following this, however, there was a recovery to practically normal at the termination of the test. Weight curves for the three pups born to dog No. 11 are also shown in Figure 2. Their growth appeared to be normal.

In general, the weight curves of all the animals show no indication of deleterious effect from the ingestion of methyl chloride.

BLOOD EXAMINATIONS

Table 3 shows the results of examination for changes in the blood.

TABLE 3.—Blood examinations of dogs ingesting methyl-chloride saturated water  
DOG NO. 11

Time after start of test, days	Red blood cells	White blood cells	Hemoglobin	Polymorphonuclear leukocytes	Lymphocytes	Endothelial leukocytes	Eosinophils	Basophils	Lymphoblasts	Megalo blasts	Normoblasts
93.....	7,006,000	7,000	90	60	40	0	0	0	0	0	0
144.....	6,510,000	10,600	90	63	35	0	1	0	1	0	0
156.....	6,140,000	8,900	95	72	27	0	1	0	1	0	0
171.....	6,650,000	9,000	98	65	31	0	4	0	0	0	0

DOG NO. 12

93.....	6,500,000	14,000	108	74	15	1	10	0	0	0	0
107.....	6,980,000	11,600	110	66	33	0	1	0	0	0	0
144.....	6,970,000	6,700	110	57	38	0	5	0	0	0	0
156.....	6,050,000	9,000	100	60	38	0	2	0	0	0	0
171.....	6,200,000	9,000	108	47	50	2	1	0	0	0	0

The results of hemoglobin, red and white cells, and differential white-cell determinations are similar to those made on control dogs attached to other experiments which were in progress at the time of the study described in this report. No changes or trends are indicated.

#### EXAMINATION OF URINE FOR FORMATES

The urine of dog No. 12 was examined for formates on the tenth and sixty-third day of the experiment. Analysis of 150 c. c. speci-

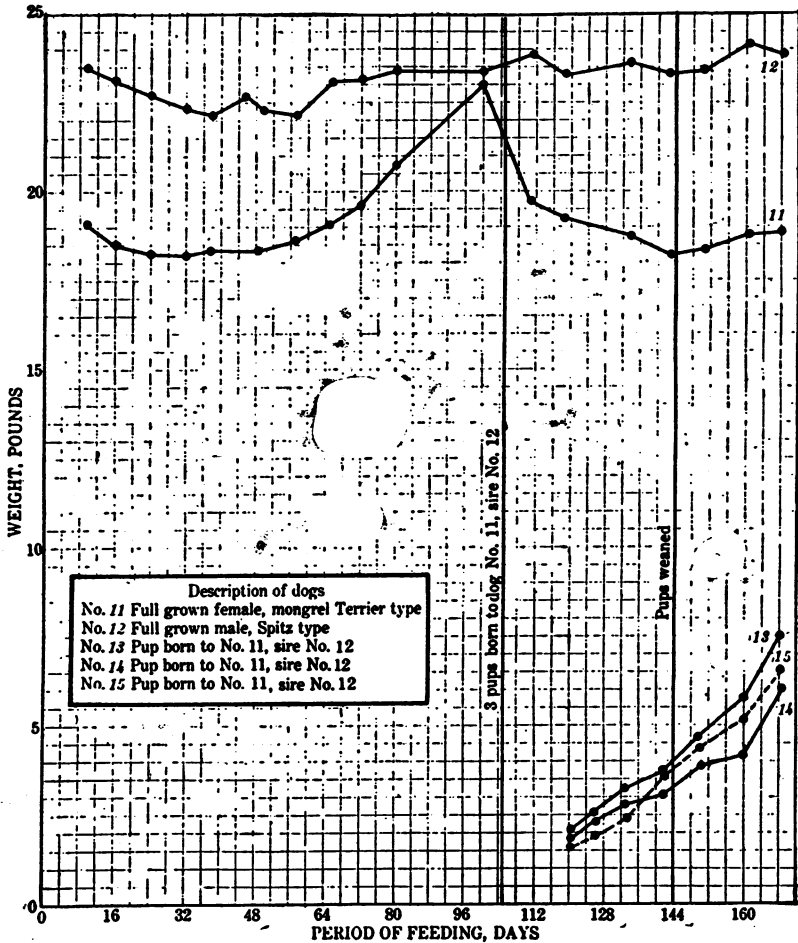


FIGURE 2.—Weight curves of dogs fed water saturated with methyl chloride at 20° to 30° C.

mens collected over 24 hours were negative. The accuracy of the method of analysis was 2 milligrams of formic acid per 150 c. c. urine.

#### AUTOPSY FINDINGS

After a test period of 171 days the animals were killed by intracardial injection of 10 c. c. of saturated aqueous magnesium sulphate

solution. Specimens of tissue were taken for microscopic examination, but with the exception of the brief reference given to frozen kidney sections, the microscopic findings will be reported later. Gross autopsy findings follow:

On external inspection all organs, including the brain, were negative for pathology attributable to methyl chloride. Cut section of the kidney, however, revealed a prominent yellowish streaking of the inner zone of the cortex, resembling fatty degeneration of the tubules. Microscopic examination of frozen sections revealed intracellular fatty degeneration affecting the ascending, descending, and collecting tubules. The glomeruli and convoluted tubules were apparently undamaged.

#### SUMMARY

The possibility of poisoning by ingestion of methyl-chloride contaminated food and water was studied by exposing dogs.

1. No apparent signs of poisoning were caused by the average daily ingestion on four consecutive days of 550 grams of ground raw beef or 200 c. c. of milk that had been exposed 15 to 75 hours to 100 per cent methyl-chloride vapor at 35° F.

2. No apparent symptoms of poisoning or changes in the hemoglobin and blood cells were caused by the ingestion of methyl-chloride contaminated water on 115 days of a total period of 171 test days. Also, no formates were found in the urine. Autopsy and examination of frozen sections, however, revealed a moderate degree of intracellular fatty degeneration affecting the ascending, descending, and collecting tubules of the kidney. Analysis showed the water to be 75 to 100 per cent saturated with an average methyl-chloride content of 0.595 gram per 100 c. c. of water. This was the only water given the animals on six days of each week of the test.

3. The taste of water saturated with methyl chloride at 68° F. is sharp, sweetish, and sickening when first taken into the mouth, followed almost immediately by a burning sensation. Persons would not drink more than a mouthful or two. It was frequently refused by the animals, even though they were deprived of other water.

#### ACKNOWLEDGMENTS

The writers desire to give acknowledgment to T. Coyle, service engineer of the Roessler & Hasslacher Chemical Co., for suggesting the work and arranging the cooperation of his company. The experimental work was conducted at the Pittsburgh Experiment Station of the Bureau of Mines, with the assistance of Surg. R. R. Sayers, United States Public Health Service, chief surgeon, Bureau of Mines, in planning the work; H. H. Schrenk, associate toxicologist, and F. A. Patty, assistant physiological chemist, in developing the



analytical method; Asst. Surg. C. P. Waite, United States Public Health Service, in making pathological examination; and Ethel R. Stead, in making the blood examinations.

## EXTENT OF RURAL HEALTH SERVICE IN THE UNITED STATES, 1926-1930

By L. L. LUMSDEN, *Senior Surgeon, United States Public Health Service*

According to data obtained by the Rural Sanitation Office of the Public Health Service from the health departments of the States, the following (Table 1) is a list, by States, of counties (or districts) in which the rural sections thereof at the beginning of the calendar years 1926, 1927, 1928, 1929, and 1930, respectively, were provided with local health service under the administration of whole-time county or (local) district health officers.

TABLE 1.—*List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers*

### ALABAMA

1926	1927	1928	1929	1930
Baldwin.	Baldwin.	Baldwin.	Baldwin.	Baldwin.
Barbour.	Barbour.	Barbour.	Barbour.	Barbour.
Calhoun.	Calhoun.	Calhoun.	Blount.	Blount.
Coffee.	Chambers.	Chambers.	Bullock.	Bullock.
Colbert.	Coffee.	Coffee.	Calhoun.	Calhoun.
Covington.	Colbert.	Colbert.	Chambers.	Chambers.
Dallas.	Covington.	Covington.	Cherokee.	Cherokee.
Escambia.	Dallas.	Cullman.	Clarke.	Choctaw.
Etowah.	Escambia.	Dale.	Cleburne.	Clarke.
Franklin.	Etowah.	Dallas.	Coffee.	Cleburne.
Houston.	Franklin.	Elmore.	Colbert.	Coffee.
Jackson.	Houston.	Escambia.	Conecuh.	Colbert.
Jefferson.	Jackson.	Etowah.	Covington.	Conecuh.
Lauderdale.	Jefferson.	Franklin.	Crenshaw.	Covington.
Lawrence.	Lauderdale.	Houston.	Cullman.	Crenshaw.
Lee.	Lawrence.	Jefferson.	Dale.	Cullman.
Limestone.	Lee.	Lauderdale.	Dallas.	Dale.
Madison.	Limestone.	Lawrence.	De Kalb.	Dallas.
Marengo.	Madison.	Lee.	Elmore.	De Kalb.
Marshall.	Marengo.	Limestone.	Escambia.	Elmore.
Mobile.	Marshall.	Madison.	Etowah.	Escambia.
Montgomery.	Mobile.	Marengo.	Franklin.	Etowah.
Morgan.	Montgomery.	Marshall.	Houston.	Franklin.
Pike.	Morgan.	Mobile.	Jackson.	Geneva.
Sumter.	Pike.	Monroe.	Jefferson.	Houston.
Talladega.	Sumter.	Montgomery.	Lamar.	Jackson.
Tuscaloosa.	Talladega.	Morgan.	Lauderdale.	Jefferson.
Walker.	Tallapoosa.	Pike.	Lawrence.	Lamar.
	Tuscaloosa.	Sumter.	Lee.	Lauderdale.
	Walker.	Talladega.	Limestone.	Lawrence.
		Tallapoosa.	Lowndes.	Lee.
		Tuscaloosa.	Macon.	Limestone.
		Walker.	Madison.	Lowndes.
			Marengo.	Macon.
			Marshall.	Madison.
			Mobile.	Marengo.
			Monroe.	Marshall.
			Montgomery.	Mobile.
			Morgan.	Monroe.
			Pickens.	Montgomery.
			Pike.	Morgan.
			Shelby.	Pickens.
			Sumter.	Shelby.
			Talladega.	Sumter.
			Tallapoosa.	Talladega.
			Walker.	Tallapoosa.
			Washington.	Tuscaloosa.
			Wilcox.	Walker.
			Winston.	Washington.
				Wilcox.
				Winston.

TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued

ARIZONA

1926	1927	1928	1929	1930
Cochise.	Cochise. Yuma.	Cochise. Coconino. Yuma.	Cochise. Coconino. Yuma.	Cochise. Coconino. Yuma.

ARKANSAS

Garland. Jefferson. Pulaski.	Garland. Jefferson. Pulaski.	Arkansas. Ashley. Chicot. Conway. Crittenden. Cross. Desha. Drew. Garland. Jackson. Jefferson. Little River. Mississippi. Monroe. Phillips. Pope. Pulaski. Saline. Union. Woodruff. Yell.	Arkansas. Ashley. Chicot. Conway. Crittenden. Cross. Desha. Drew. Faulkner. Garland. Jackson. Jefferson. Little River. Mississippi. Monroe. Phillips. Pope. Pulaski. Saline. Sebastian. Union. White. Woodruff. Yell.	Arkansas. Ashley. Conway. Cross. Desha. Drew. Garland. Jackson. Jefferson. Little River. Mississippi. Monroe. Phillips. Pope. Pulaski. Saline. Sebastian. Union. White. Woodruff. Yell.
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CALIFORNIA

Los Angeles. Monterey. Orange. San Diego. San Joaquin. San Luis Obispo. Santa Barbara.	Los Angeles. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.	Los Angeles. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.	Contra Costa. Los Angeles. Madera. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.	Contra Costa. Los Angeles. Madera. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Stanislaus. Yolo.
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COLORADO

Otero.	Otero.	Otero.	Otero.	Otero.
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CONNECTICUT

Fairfield. <sup>1</sup>	Fairfield. <sup>1</sup>	Fairfield. <sup>1</sup>	Fairfield. <sup>1</sup>	Fairfield.
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FLORIDA

Polk.	Manatee. Polk. Sarasota.	Manatee. Polk. Sarasota.	Manatee. Polk. Sarasota.	Manatee. Sarasota.
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<sup>1</sup> District.

**TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued**

## GEORGIA

1926	1927	1928	1929	1930
Baker. Baldwin. Bartow. Bibb. Clarke. Cobb. Decatur. De Kalb. Dougherty. Floyd. Glynn. Grady. Hall. Laurens. Lowndes. Mitchell. Richmond. Sumter. Thomas. Troup. Walker. Ware.	Baker. Baldwin. Bartow. Bibb. Brooks. Clarke. Cobb. Decatur. De Kalb. Dougherty. Floyd. Glynn. Grady. Hall. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Cobb. Coffee. Colquitt. Crisp. Decatur. De Kalb. Dougherty. Floyd. Glynn. Hall. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware. Washington.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Cobb. Coffee. Colquitt. Crisp. Decatur. De Kalb. Dougherty. Emanuel. Floyd. Glynn. Grady. Hall. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware. Washington. Wayne. Worth.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Clinch. Cobb. Coffee. Colquitt. Crisp. Decatur. De Kalb. Dougherty. Emanuel. Floyd. Glynn. Grady. Hall. Jefferson. Jenkins. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware. Washington. Wayne. Worth.

## IDAHO

				Bonneville. Twin Falls.
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## ILLINOIS

Cook. Morgan. Sangamon.	Cook. Morgan. Sangamon.	Cook. Du Page. Morgan.	Cook. Du Page. Morgan. Pulaski.	Cook. Du Page. Morgan.
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## IOWA

Dubuque.	Dubuque.			
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## KANSAS

Butler. Coffey. Ellis. Geary. Jefferson. Lyon. Marion. McPherson. Ottawa. Phillips.	Butler. Coffey. Ellis. Geary. Jefferson. Lyon. Marion. Ottawa. Phillips.	Butler. Cherokee. Ellis. Geary. Greenwood. Jefferson. Lyon. Marion. Ottawa. Shawnee.	Brown. Butler. Cherokee. Geary. Greenwood. Jefferson. Lyon. Marion. Ottawa. Shawnee.	Brown. Butler. Cherokee. Dickinson. Geary. Greenwood. Lyon. Marion. Ottawa. Sedgwick. Shawnee.
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TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued

KENTUCKY

1926	1927	1928	1929	1930
Boyd. Daviness. Fayette. Fulton. Jefferson. Johnson. Mason. Scott.	Boyd. Daviness. Fayette. Fulton. Jefferson. Johnson. Knott. Mason. Scott.	Ballard. Boyd. Breathitt. Carlisle. Carter. Daviness. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Johnson. Knott. Lawrence. Lee. Leslie. Letcher. Magoffin. Martin. Mason. McLean. Menefee. Morgan. Owsley. Perry. Pike. Scott. Webster. Wolfe.	Ballard. Bell. Boyd. Breathitt. Bullitt. Carlisle. Carter. Daviness. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Johnson. Knott. Knox. Lawrence. Lee. Leslie. Letcher. Magoffin. Martin. Mason. McLean. Menefee. Monroe. Morgan. Ohio. Owsley. Perry. Pike. Scott. Trigg. Webster. Whitley. Wolfe.	Ballard. Bell. Boyd. Breathitt. Bullitt. Callaway. Carlisle. Carter. Daviness. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Johnson. Kenton. Knott. Knox. Lawrence. Lee. Leslie. Letcher. Magoffin. Martin. Mason. McLean. Menefee. Monroe. Morgan. Muhlenberg. Ohio. Owsley. Perry. Pike. Scott. Trigg. Union. Wayne. Webster. Whitley. Wolfe.

LOUISIANA <sup>1</sup>

Caddo. Claiborne. De Soto. Lafourche. Natchitoches. Ouachita. Plaquemines. St. Mary. Tangipahoa. Washington. Webster.	Caddo. Claiborne. De Soto. Lafourche. Natchitoches. Ouachita. Plaquemines. St. Mary. Washington. Webster.	Assumption. Avoyesles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Lafayette. Lafourche. La Salle. Madison. Morehouse. Natchitoches. Ouachita. Rapides. Richland. St. Martin. St. Mary. Tangipahoa.	Assumption. Avoyesles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Iberville. Lafayette. Lafourche. La Salle. Madison. Morehouse. Natchitoches. Ouachita. Point Coupee. Rapides. Richland. St. Landry. St. Martin.	Assumption. Avoyesles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Iberville. Lafayette. Lafourche. La Salle. Lincoln. Madison. Morehouse. Natchitoches. Ouachita. Point Coupee. Rapides. Richland. St. Landry.
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<sup>1</sup> Parishes.

**TABLE 1.**—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued

## LOUISIANA—Continued

1926	1927	1928	1929	1930
		Tensas. Washington. Webster. West Carroll.	St. Mary. Tensas. Terrebonne. Webster. West Carroll.	St. Martin. St. Mary. Tensas. Terrebonne. Washington. Webster. West Carroll.

## MAINE

Oldtown. Rumford. Sanford. Waterville. York.	Oldtown. Rumford. Sanford. Waterville. York.	Motbov Union. <sup>3</sup> Rumford. <sup>4</sup> Sanford. <sup>4</sup> Vassalboro. <sup>4</sup>	Motbov Union. <sup>3</sup> Rumford. <sup>4</sup> Sanford. <sup>4</sup> Vassalboro. <sup>4</sup>	Motbov Union. <sup>3</sup> Rumford. <sup>4</sup> Sanford. <sup>4</sup> Vassalboro. <sup>4</sup>
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## MARYLAND

Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery.	Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery.	Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery. Prince Georges. Talbot.	Allegany. Baltimore. Calvert. Carroll. Frederick. Harford. Montgomery. Prince Georges. Talbot.	Allegany. Baltimore. Calvert. Carroll. Cecil. Frederick. Harford. Montgomery. Prince Georges. Talbot. Wicomico.
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## MASSACHUSETTS

Cape Cod. <sup>1</sup>	Cape Cod. <sup>1</sup>	Barnstable. <sup>2</sup>	Barnstable.	Barnstable.
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## MICHIGAN

			Oakland. Saginaw. Wexford.	Genesee. Oakland. Saginaw. Wexford.
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## MINNESOTA

St. Louis.	St. Louis.	St. Louis.	St. Louis.	St. Louis.
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## MISSISSIPPI

Bolivar. Coahoma. Forrest. Hancock. Harrison. Hinds. Jackson. Jones. Lee. Leflore. Pearl River.	Bolivar. Clarke. Coahoma. Forrest. Hancock. Harrison. Hinds. Holmes. Jackson. Jones. Lamar.	Bolivar. Clarke. Coahoma. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys. Issaquena. Jackson.	Adams. Bolivar. Clarke. Coahoma. Copiah. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys.	Adams. Bolivar. Clarke. Coahoma. Copiah. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys.
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<sup>1</sup> District.<sup>2</sup> Including towns of Orono, Milford, Bradley, and Veazie.<sup>3</sup> Town (township) wholly or partly rural.<sup>4</sup> See Reprint No. 1184, p. 34, from Public Health Reports of Oct. 21, 1927.

**TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued**

MISSISSIPPI—Continued

1926	1927	1928	1929	1930
Sharkey. Washington.	Lee. Leflore. Pearl River. Perry. Sharkey. Union. Washington.	Jones. Lamar. Lee. Leflore. Pearl River. Perry. Sharkey. Sunflower. Tishomingo. Union. Warren. Washington. Yazoo.	Issaquena. Jackson. Jones. Lamar. Lauderdale. Lee. Leflore. Lincoln. Monroe. Pearl River. Perry. Sharkey. Sunflower. Tishomingo. Union. Warren. Washington. Yazoo.	Issaquena. Jackson. Lamar. Lauderdale. Lee. Leflore. Lincoln. Monroe. Pearl River. Perry. Sharkey. Sunflower. Tishomingo. Union. Warren. Washington. Yazoo.

MISSOURI

Boone. Dunklin. Greene. Jackson. New Madrid. Nodaway. Pemiscot. Pettis. Polk. St. Francois. St. Louis.	Boone. Dunklin. Greene. Holt. Jackson. Marion. New Madrid. Nodaway. Pemiscot. Pettis. St. Francois. St. Louis.	Boone. Dunklin. Greene. Holt. Jackson. Marion. Mississippi. New Madrid. Nodaway. Pemiscot. Pettis. Scott. St. Francois. St. Louis.	Boone. Dunklin. Greene. Jackson. Marion. Mississippi. New Madrid. Nodaway. Pemiscot. St. Francois. St. Louis. Scott.	Boone. Buchanan. Dunklin. Greene. Jackson. Marion. Mississippi. New Madrid. Nodaway. Pemiscot. St. Francois. St. Louis. Scott.
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MONTANA

Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Gallatin. Lewis and Clark. Missoula.
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NEW MEXICO

Bernalillo. Chaves. Colfax. Dona Ana. Eddy. McKinley. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Santa Fe. San Miguel. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Union. Valencia.
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NEW YORK

Cattaraugus.	Cattaraugus.	Cattaraugus.	Cattaraugus. Suffolk.	Cattaraugus. Cortland. Suffolk. Westchester.
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TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued

## NORTH CAROLINA

1926	1927	1928	1929	1930
Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Carteret. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Carteret. Columbus. Craven. Cumberland. Davidson. Durham. Durham. Edgecombe. Forsyth. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Gaston. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Moore. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Randolph. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Buncombe. Cabarrus. Cherokee. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Gaston. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Moore. Nash. New Hanover. Northampton. Pitt. Randolph. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.

## OHIO

Allen. Ashtabula. Athens. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Preble.	Allen. Ashtabula. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Preble.	Allen. Ashtabula. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry.	Allen. Ashtabula. Belmont. Butler. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Perry. Preble. Richland.	Allen. Ashtabula. Belmont. Butler. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Perry. Pickaway. Preble.
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TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued

OHIO—Continued

1926	1927	1928	1929	1930
Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Union. Washington. Wayne. Wood.	Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Union. Washington. Wayne. Wood.	Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.	Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.	Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.

OKLAHOMA

Carter. Le Flore. McCurtain. Muskogee. Oklahoma. Oklmulgee. Ottawa. Pittsburg.	Carter. Kay. Le Flore. McCurtain. Muskogee. Oklahoma. Oklmulgee. Ottawa. Pittsburg.	Carter. Kay. Le Flore. McCurtain. Muskogee. Oklmulgee. Ottawa. Pittsburg. Seminole.	Carter. Kay. Le Flore. McCurtain. Muskogee. Oklmulgee. Osage. Ottawa. Pittsburg. Seminole.	Carter. Le Flore. McCurtain. Muskogee. Oklmulgee. Osage. Ottawa. Pittsburg. Seminole.
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OREGON

Clackamas. Coos. Douglas. Jackson. Klamath.	Clackamas. Coos. Douglas. Jackson. Klamath.	Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.	Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.	Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.
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SOUTH CAROLINA

Aiken. Anderson. Beaufort. Charleston. Cherokee. Colleton. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Marion. Newberry. Orangeburg. Spartanburg.	Aiken. Anderson. Beaufort. Charleston. Cherokee. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Orangeburg. Spartanburg.	Aiken. Anderson. Beaufort. Charleston. Cherokee. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Orangeburg. Spartanburg.	Aiken. Anderson. Beaufort. Berkeley. Charleston. Cherokee. Darlington. Dillon. Dorchester. Fairfield. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Oconee. Orangeburg. Richland. Spartanburg.	Aiken. Anderson. Beaufort. Berkeley. Charleston. Cherokee. Darlington. Dillon. Dorchester. Fairfield. Florence. Georgetown. Greenville. Greenwood. Horry. Kershaw. Lexington. Marion. Newberry. Oconee. Orangeburg. Richland. Spartanburg.
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**TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued**

## SOUTH DAKOTA

1926	1927	1928	1929	1930
Brown. Pennington. Yankton.	Brown. Pennington.	Pennington.	Pennington.	Pennington.

## TENNESSEE

Blount. Davidson. Dyer. Gibson. Hamilton. Montgomery. Obion. Roane. Rutherford. Sevier. Weakley. Williamson.	Blount. Davidson. Dyer. Gibson. Hamilton. Lauderdale. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Weakley. Williamson.	Blount. Bradley. Davidson. Dyer. Gibson. Hamilton. Lake. Lauderdale. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Washington. Weakley. Williamson.	Blount. Bradley. Carter. Davidson. Dyer. Gibson. Greene. Hamilton. Knox. Lake. Lauderdale. Monroe. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Sullivan. Washington. Weakley. Williamson. Wilson.	Bledsoe. Blount. Bradley. Carter. Clay. Davidson. Dyer. Fentress. Gibson. Giles. Greene. Grundy. Hamilton. Hardeman. Jackson. Knox. Lake. Lauderdale. Lincoln. Meigs. Monroe. Montgomery. Obion. Overton. Pickett. Rhea. Roane. Rutherford. Sequatchie. Sevier. Shelby. Sullivan. Sumner. Tipton. Washington. Weakley. Williamson. Wilson.
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## TEXAS

Cameron. Hidalgo. Jefferson. McLennan. Tarrant.	Cameron. Hidalgo. Jefferson. McLennan. Tarrant.	Cameron. Hidalgo. McLennan. Tarrant.	Cameron. Hidalgo. McLennan. Tarrant.	Cameron. Hidalgo. Jefferson. McLennan. Nolan. Tarrant.
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## UTAH

Davis. Weber.	Box Elder. Davis. Morgan. Summit. Wasatch. Weber.	Box Elder. Davis. Summit. Utah. Wasatch.	Box Elder. Davis. Utah.	Box Elder. Davis. Utah.
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TABLE 1.—List of counties or districts in which as of January 1, 1926, 1927, 1928, 1929, and 1930, respectively, rural sections were provided with health service under whole-time local health officers—Continued

VIRGINIA

1926	1927	1928	1929	1930
Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Halifax. Henrico. Isle of Wight. James City. Nansemond. Northampton. Sussex. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Halifax. Henrico. Isle of Wight. James City. Nansemond. Northampton. Southampton. Sussex. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Halifax. Henrico. Isle of Wight. Nansemond. Norfolk. Northampton. Princess Anne. Rockbridge. Southampton.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Greensville. Halifax. Henrico. Isle of Wight. Nansemond. Norfolk. Northampton. Princess Anne. Rockbridge. Southampton. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Greensville. Halifax. Henrico. Isle of Wight. Nansemond. Norfolk. Northampton. Princess Anne. Rockbridge. Southampton. Wise.

WASHINGTON

Chelan. King. Walla Walla. Yakima.	Chelan. King. Snohomish. Spokane. Walla Walla. Yakima.	Chelan. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.	Chelan. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.	Chelan. Clarke. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.
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WEST VIRGINIA

Gilmer. Hancock. Harrison. Logan. Marion. Marshall. Preston. Roane.	Boone. Brooke. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Marshall. Ohio. Preston. Roane. Wood.	Berkeley. Boone. Brooke. Gilmer. Hancock. Harrison. Kanawha. Lewis. Logan. Marion. Marshall. Ohio. Preston. Wood.	Berkeley. Boone. Brooke. Fayette. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Ohio. Preston. Raleigh. Wood.	Berkeley. Boone. Brooke. Fayette. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Monongalia. Ohio. Preston. Raleigh. Wood.
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WYOMING

Natrona.	Natrona.	Natrona.	Natrona.
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Résumé of Table 1

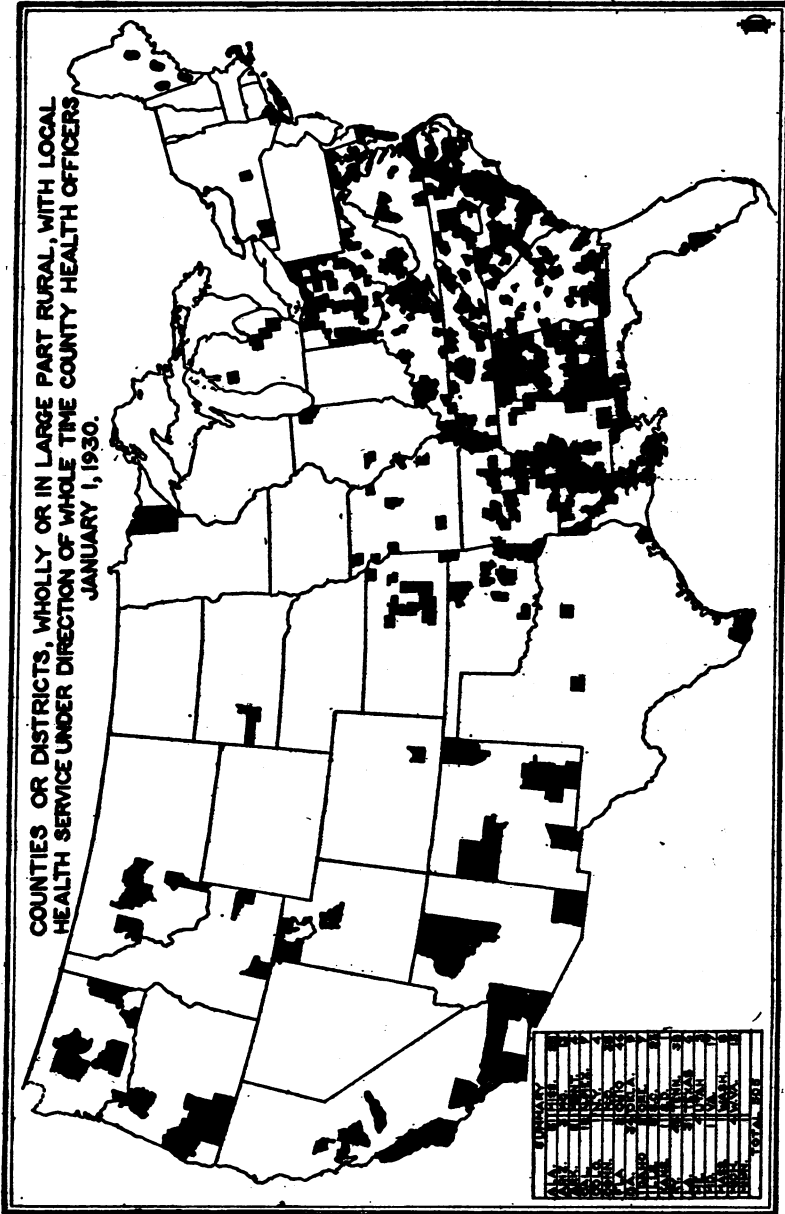
State	Number of counties Jan. 1					Increase or decrease in 1926	Increase or decrease in 1927	Increase or decrease in 1928	Increase or decrease in 1929
	1926	1927	1928	1929	1930				
Alabama	28	30	33	50	51	+2	+3	+17	+1
Arizona	1	2	3	3	3	+1	+1		
Arkansas	3	3	21	24	21		+18	+3	-3
California	7	9	9	11	12	+2		+2	+1
Colorado	1	1	1	1	1				
Connecticut	1	1	1	1	1				
Florida	1	3	3	3	2	+2			-1
Georgia	22	24	27	31	34	+2	+3	+4	+3
Idaho					2				+2
Illinois	3	3	3	4	3			+1	-1
Iowa	1	1					-1		
Kansas	10	9	10	10	11	-1	+1		+1
Kentucky	8	9	32	39	45	+1	+23	+7	+6
Louisiana	11	10	28	29	31	-1	+18	+1	+2
Maine	5	5	4	4	4		-1		
Maryland	6	6	8	9	11		+2	+1	+2
Massachusetts	1	1	1	1	1				
Michigan				13	4			+3	+1
Minnesota	1	1	1	1	1				
Mississippi	13	18	24	29	28	+5	+6	+5	-1
Missouri	11	12	14	12	13	+1	+2	-2	+1
Montana	3	3	3	3	4				+1
New Mexico	9	9	8	7	7		-1	-1	
New York	1	1	1	2	4			+1	+2
North Carolina	35	37	37	39	38	+2		+2	-1
Ohio	47	47	47	45	46			-2	+1
Oklahoma	8	9	9	10	9	+1		+1	-1
Oregon	5	5	7	7	7		+2		
South Carolina	16	16	16	20	23			+4	+3
South Dakota	3	2	1	1	1	-1	-1		
Tennessee	12	14	17	23	38	+2	+3	+6	+15
Texas	5	5	4	4	6		-1	-1	+2
Utah	2	6	5	3	3	+4	-1	-2	
Virginia	14	15	14	16	17	+1	-1	+2	+1
Washington	4	6	7	7	8	+2	+1		+1
West Virginia	8	13	14	14	15	+5	+1		+1
Wyoming	1	1	1	1					-1
Total	307	337	414	467	505	+30	+77	+53	+38

<sup>1</sup> Information that 2 units were operating in Michigan on Jan. 1, 1928, was not received until after publication of the report on Extent of Rural Health Service in the United States, 1924-1928 (Reprint No. 1220 from Public Health Reports of Apr. 13, 1928), and consequently the item was not included in the list in that report.

The accompanying map shows the location of the counties or districts in the United States in the rural sections of which local health service under the direction of whole-time local (county or district) health officers was in operation on January 1, 1930.

Within the period January 1, 1929, to January 1, 1930, whole-time county or (local) district health officer service was established in 47 units and was discontinued in 9—a net gain of 38. The largest gain in one State was that of 15 in Tennessee. Over 48 per cent of the rural population of that State is now provided with county health service under the direction of whole-time county health officers, as against 14.03 per cent on January 1, 1925. This development has been on a cooperative basis, the State department of public health contributing financially to all of the projects and the United States Public Health Service or the Rockefeller Foundation,

or both, contributing to most of them. The progress in the establishment of well-rounded, effective, economical, whole-time rural health service in Tennessee during the last five years is attributable



in large part to the constructive policy and the well directed and arduous activities of the Tennessee State health department. Three of the total of nine members of the rural sanitation general field

force of the United States Public Health Service have been detailed for cooperative duty with the State health department in Tennessee during most of this 5-year period.

Of the 505 counties or districts with local health service under whole-time local (county or district) health officers at the beginning of the present calendar year, 444, or 88 per cent, are receiving financial assistance for the support of their local health service from one or more of the following agencies: The State board of health, the United States Public Health Service, the Rockefeller Foundation.

Without assistance from outside agencies, local governments of rural communities (counties, towns, townships, or districts) in general are not disposed or actually are not able to appropriate adequately for the support of efficient, whole-time, local health service. Some local governments, even when offered such assistance, decline to appropriate their part of the budget for the service; but, according to all the evidence, development in this vitally important field of general welfare could be greatly increased by provision (which could be made at comparatively small governmental cost) to enable the State health departments and the Federal health service to offer to counties now willing to accept, and to those which would soon become willing to accept, adequate technical advice along with financial cooperation on a basis of \$1 of Federal money and \$3 of State money to meet \$4 or more of county money. Substantial financial assistance, as well as stimulation and guidance, from the State health department seems essential for satisfactory progress in the development of whole-time county health service units. In each of the six States in which the most noteworthy progress has been made within the last five years this factor has operated and a comparatively large degree of cooperation in rural health work has been contributed by the United States Public Health Service.

As health conditions in a rural community in one State influence those in other communities in that State and in other States, it seems that all the State governments and the Federal Government may be properly concerned with the development and maintenance of efficient local health service throughout our extensive rural area. The local health service, in doing its work efficiently, necessarily performs duties, such as the collection of morbidity and mortality statistics and the carrying out of measures to prevent the spread of infection in intercounty and interstate traffic, for which the State governments and the Federal Government have a degree of definite responsibility.

There are in the United States about 2,500 counties or districts comparable to counties wholly or in considerable part rural to which

local health service under the direction of whole-time county or local district health officers is applicable and in which such service would be highly advantageous. The number of these units of population in which such service was in operation at the beginning of the calendar years 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, and 1930, respectively, was 109, 161, 202, 230, 250, 280, 307, 337, 414, 467, and 505. The average annual net gain in this period has been about 40. At such rate of progress about 50 years yet would be required for reasonably adequate whole-time local rural health service to be extended to all communities of the United States in which such service is needed. To augment existing factors or to bring into operation additional factors for the speeding up of production seems critically important. Among such factors to be considered are (1) a considerable increase in the present salary scale and provision of reasonable means of security upon disability from age, injury, or disease incurred in line of duty in order to furnish additional inducement to properly qualified persons to accept and hold positions as whole-time county health officers, and (2) increased facilities for schooling and training of personnel without cost or at very low cost to the trainees. The inducement which would be offered by increased salary is one to be considered by the official agencies in the development of budgets. The inducement which would be offered by pensions and the provision of additional schooling facilities might be considered at this time as a fruitful opportunity for private agencies interested in rural health work.

Experience indicates that the best foundation for rural health service in the United States is the county health department under the direction of the qualified whole-time county health officer. It becomes more and more evident to those with practical experience in the public health field that agencies concerned with the promotion of specialized health activities, such as typhoid fever prevention, hookworm control, tuberculosis prevention, malaria control, venereal disease prevention, or child and maternity hygiene, can perform most effectively and economically by dovetailing their specific activities in with and making them a part of a well-balanced comprehensive program of local official health service under the immediate direction of qualified whole-time local health officers. As it would require, even with adequate financial provisions by the Federal, State, and local governments, at least 5 or 10 years to build up on a satisfactory basis of efficiency with economy whole-time health units to cover the whole rural area of the United States, the well-equipped specialized health agencies have a large opportunity in this field of development.

The present budgets for the support of the health service covering the rural communities and some of the incorporated cities and

towns in the counties and districts designated in the 1930 column of Table 1 total \$7,920,983.64.<sup>1</sup> Of the total local population of 18,327,490 receiving this service, 5,985,487, or 32.66 per cent, are urban. Therefore, about \$5,333,990.38 of the total investment for the local health service in these 505 projects will be expended this year for strictly rural health service.

Efficient, well-balanced, whole-time rural health service throughout this country would cost about \$20,000,000 a year. Apart from the loss in human life, human health, and human happiness, our national economic loss annually in wage earnings and in other items incident to preventable sickness because of lack of reasonably efficient county health service is estimated at over \$1,000,000,000. Money invested for well-directed whole-time county health service yields to the average local tax-paying citizen an annual dividend in dollars and cents ranging under different local conditions from 100 to 3,000 per cent.

All evidence obtained in the course of prolonged studies of the subject supports the claim that the dollar invested for well-directed comprehensive whole-time county health service yields to the public welfare more than any other dollar obtainable by taxation of the people can be made to yield in normal times.

Table 2 presents, by States, the percentage of rural population having local health service under the direction of whole-time local (county or district) health officers at the beginning of 1930.

TABLE 2.—Percentage of rural population having on January 1, 1930, local health service under whole-time local (county or district) health officers

State	Rural population (census 1920)	Rural population with local health service under direction of whole-time health officers	Percentage of rural population with local health service under direction of whole-time health officers
Alabama.....	1,838,857	1,485,729	80.80
Arizona.....	216,635	44,807	20.68
Arkansas.....	1,461,707	489,839	33.51
California.....	1,095,132	395,531	36.12
Colorado.....	486,370	13,913	2.86
Connecticut.....	444,292	11,475	2.58
Delaware.....	102,236	0	0
Florida.....	612,645	14,844	2.4
Georgia.....	2,167,973	636,872	29.38
Idaho.....	312,829	29,511	9.43
Illinois.....	2,082,127	123,124	5.91
Indiana.....	1,447,535	0	0
Iowa.....	1,528,526	0	0
Kansas.....	1,151,293	186,997	16.24
Kentucky.....	1,783,087	768,836	43.12
Louisiana.....	1,170,346	658,879	56.30
Maine.....	468,445	26,136	5.58

<sup>1</sup> Of this amount \$1,342,487 is covered by the budget of one county alone—Los Angeles County, Calif. The population of this county, exclusive of that of the city of Los Angeles, is now very much larger than is indicated by the census figures for 1920, which are used in the calculation in this report. If the Los Angeles County budget were not included, the average budget for the remaining 504 units would be \$13,052.57.

TABLE 2.—Percentage of rural population having on January 1, 1930, local health service under whole-time local (county or district) health officers—Continued

State	Rural population (census 1920)	Rural population with local health service under direction of whole-time health officers	Percentage of rural population with local health service under direction of whole-time health officers
Maryland	550,239	346,729	59.76
Massachusetts	202,108	16,562	8.19
Michigan	1,426,852	119,089	8.35
Minnesota	1,338,582	50,896	3.81
Mississippi	1,550,497	621,650	40.09
Missouri	1,817,152	338,698	18.64
Montana	375,878	42,392	11.25
Nebraska	891,066	0	0
Nevada	62,153	0	0
New Hampshire	168,322	0	0
New Jersey	680,964	0	0
New Mexico	296,390	81,721	27.67
New York	1,795,383	194,725	10.85
North Carolina	2,068,753	1,087,629	52.55
North Dakota	558,633	0	0
Ohio	2,082,258	1,234,181	59.27
Oklahoma	1,488,803	268,912	18.06
Oregon	392,370	128,014	32.63
Pennsylvania	3,112,202	0	0
Rhode Island	15,217	0	0
South Carolina	1,389,737	798,841	57.48
South Dakota	534,675	6,943	1.30
Tennessee	1,726,659	834,942	48.36
Texas	3,150,539	142,592	4.53
Utah	233,812	39,527	16.91
Vermont	242,452	0	0
Virginia	1,635,203	421,054	26.75
Washington	607,886	252,056	41.46
West Virginia	1,094,694	428,955	39.18
Wisconsin	1,387,499	0	0
Wyoming	137,054	0	0
Total	51,406,017	12,342,003	24.01

The accompanying chart shows, by States, the number of counties or local districts with health service under the direction of whole-time county or local district health officers as of January 1, 1926, 1927, 1928, 1929, and 1930, and the percentage of the rural population of each State receiving such service on January 1, 1930.

Over 76 per cent of our rural population is as yet unprovided with official local health service approaching adequacy. As a consequence of this deficiency, there is a sacrifice of the health and lives and the material resources of many of our people every year—a sacrifice which is needless because preventable, and preventable by measures readily within our means and demonstrated to be in the highest sense economical. The situation is practical and urgent. It should be dealt with cogently, constructively, and promptly.



STATE	WHOLE-TIME COUNTY OR LOCAL DISTRICT HEALTH UNITS JANUARY 1					PERCENTAGE OF RURAL POPULATION SERVED AS OF JANUARY 1, 1930.										
	1921	1921	1928	1928	1930	%	0	10	20	30	40	50	60	70	80	90
ALABAMA	28	30	33	50	51	60.2										
MARYLAND	6	6	8	9	11	59.2										
OHIO	47	47	47	45	46	52.7										
S. CAROLINA	16	16	16	20	23	57.4										
LOUISIANA	11	10	28	29	31	56.3										
N. CAROLINA	35	37	37	39	38	52.5										
TENNESSEE	12	14	17	23	38	48.3										
KENTUCKY	8	9	32	39	45	43.12										
WASH.	4	6	7	7	8	41.46										
MISSISSIPPI	13	18	24	29	28	40.09										
W. VIRGINIA	8	13	14	14	15	39.18										
CALIFORNIA	7	9	9	11	12	36.12										
ARKANSAS	3	3	21	24	21	33.51										
OREGON	5	5	7	7	7	32.63										
GEORGIA	22	24	27	31	34	29.38										
NEW MEXICO	9	9	8	7	7	27.47										
VIRGINIA	14	15	14	16	17	25.75										
ARIZONA	1	2	3	3	3	20.68										
MISSOURI	11	12	14	12	13	18.64										
OKLAHOMA	8	9	9	10	9	18.06										
UTAH	2	6	5	3	3	16.91										
KANSAS	10	9	10	10	11	16.21										
MONTANA	3	3	3	3	4	11.25										
NEW YORK	1	1	1	2	4	10.85										
IDAHO	0	0	0	0	2	9.45										
MICHIGAN	0	0	0	3	4	8.35										
MASS.	1	1	1	1	1	6.19										
ILLINOIS	3	3	3	4	3	5.91										
MAINE	5	5	4	4	4	5.58										
TEXAS	5	5	4	4	6	4.53										
MINN.	1	1	1	1	1	3.81										
COLORADO	1	1	1	1	1	2.86										
CONN.	1	1	1	1	1	2.58										
FLORIDA	1	3	3	3	2	2.42										
S. DAKOTA	3	2	1	1	1	1.36										
WYOMING	1	1	1	1	1	0.00										
IOWA	1	1	0	0	0	0.00										
TOTALS	307	337	414	467	505	24.01										

FIGURE 2.—Number of whole-time health units, by States, 1921-1930, and percentage of rural population served on January 1, 1930

## SIXTH PAN AMERICAN CONGRESS OF CHILD WELFARE

In accordance with a resolution of the Fifth Pan American Congress of Child Welfare, held in Habana, Cuba, in 1927, a call has been issued for the assembling of the sixth congress in Lima, Peru, July 4-11, 1930.

Due to the increasing interest in child welfare, it is anticipated that this congress will be one of the most important of its kind ever held on this continent. The United States will be adequately represented.

The program of the congress will include the presentation of papers and discussions of various subjects under the following general heads:

- I. Medicine.
- II. Surgery.
- III. Hygiene.
- IV. Social welfare.
- V. Legislation.
- VI. Education.

The following are the honorary and executive officers of the congress:

*Honorary president:* His Excellency Mr. Augusto B. Leguía, President of Peru.

*Honorary vice presidents:* Dr. Pedro José Rada y Gamio, Minister of Foreign Relations; Mr. Alfredo Mendiola, Minister of the Interior; Dr. J. Matías León, Minister of Public Instruction.

### EXECUTIVE COMMITTEE

*President:* Dr. Sebastián Lorente, director of health of Peru.

*Vocal:* Dr. Rómulo Eyzaguirre, chief of the service of demography.

*Secretary general:* Dr. Carlos Enrique Paz Soldán, professor of hygiene and director of National Child Welfare Institute.

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## COURT DECISION RELATING TO PUBLIC HEALTH

*Death from infection resulting from vaccination held compensable.*— (Michigan Supreme Court; *Neudeck v. Ford Motor Co.*, 229 N. W. 438; decided Mar. 6, 1930.) An employee, immediately upon being employed by a company, was ordered by company officials to be vaccinated. He was thereupon vaccinated at the company's plant by a physician employed by the company. As an effect of the said vaccination the employee incurred a streptococcus poisoning and died therefrom. The widow of the employee sought compensation.

In addition to the above facts there was the testimony of the chief surgeon of the company that the company had been requested by the Detroit Board of Health to have vaccinated against smallpox all new

employees and old employees not successfully vaccinated within five years. The company complied with the request as to new employees but not as to old ones.

The supreme court held that the infection from the vaccination was an accident and affirmed the award of compensation which had been made by the State department of labor and industry. The court said in part:

It may be conceded that the vaccination wound was not an accident because it was not an "unforeseen event." But vaccination is usually harmless, and, under the above authorities, infection therefrom is an accident. Of course, no one could testify that he saw a germ enter the wound. The most that could be done would be to tell the condition which would render infection probable or possible. No testimony was introduced to indicate how or when the infection did or could have occurred or its cause. The only cause, time, and place indicated in the record are found in the concession in the statement of facts, that the infection was an effect of the vaccination. This concession ties the accident of infection to the act of vaccination as occurring in the course of the employment.

### DEATHS DURING WEEK ENDED APRIL 26, 1930

*Summary of information received by telegraph from industrial insurance companies for the week ended April 26, 1930, and corresponding week of 1929. (From the Weekly Health Index, April 30, 1930, issued by the Bureau of the Census, Department of Commerce)*

	Week ended Apr. 26, 1930	Corresponding week, 1929
Policies in force.....	75, 763, 029	74, 033, 990
Number of death claims.....	16, 196	13, 594
Death claims per 1,000 policies in force, annual rate.....	11. 1	9. 6

*Deaths from all causes in certain large cities of the United States during the week ended April 26, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, April 30, 1930, issued by the Bureau of the Census, Department of Commerce)*

City	Week ended Apr. 26, 1930		Annual death rate per 1,000, corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended Apr. 26, 1930 <sup>2</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Apr. 26, 1930	Corresponding week, 1929	
Total (65 cities).....	8, 102	14. 2	13. 1	753	736	<sup>3</sup> 66
Akron.....	28			5	6	46
Albany.....	41	17. 8	19. 5	2	3	44
Atlanta.....	88	18. 0	10. 2	11	4	116
White.....	48			5	1	159
Colored.....	40	( <sup>4</sup> )	( <sup>5</sup> )	6	3	95
Baltimore.....	235	14. 8	13. 3	19	12	65
White.....	173			13	10	56
Colored.....	62	( <sup>4</sup> )	( <sup>5</sup> )	6	2	97
Birmingham.....	60	14. 1	14. 1	1	6	9
White.....	30			0	3	0
Colored.....	30	( <sup>4</sup> )	( <sup>5</sup> )	1	3	24
Boston.....	237	15. 5	15. 2	23	24	65
Bridgeport.....	41			5	3	85

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended April 26, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929—Continued

City	Week ended Apr. 26, 1930		Annual death rate per 1,000, corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended Apr. 26, 1930 <sup>1</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Apr. 26, 1930	Corresponding week, 1929	
Buffalo.....	156	14.6	16.2	19	23	85
Cambridge.....	37	15.3	12.0	1	2	19
Camden.....	47	18.1	10.8	1	8	18
Canton.....	23	10.3	10.3	2	0	50
Chicago <sup>4</sup> .....	820	13.5	12.5	75	81	66
Cincinnati.....	121			8	11	47
Cleveland.....	199	10.3	9.3	20	18	60
Columbus.....	399	69.6	15.2	3	8	29
Dallas.....	74	17.7	11.3	2	6	
White.....	62			2	3	
Colored.....	12	( <sup>5</sup> )	( <sup>5</sup> )	0	3	
Dayton.....	39	11.0	11.6	3	5	44
Denver.....	66	11.7	11.5	9	5	94
Des Moines.....	35	12.0	10.3	4	2	69
Detroit.....	336	12.7	12.9	42	50	65
Duluth.....	20	8.9	8.5	1	0	27
El Paso.....	40	17.7	20.8	6	5	
Erie.....	14			1	2	21
Fall River <sup>4</sup> .....	28	10.9	10.9	4	3	92
Flint.....	31	10.9	10.5	5	4	58
Fort Worth.....	28	8.6	11.3	3	4	
White.....	24			2	4	
Colored.....	4	( <sup>5</sup> )	( <sup>5</sup> )	1	0	
Grand Rapids.....	26	8.3	11.1	0	2	0
Houston.....	72			4	5	
White.....	49			3	4	
Colored.....	23	( <sup>5</sup> )	( <sup>5</sup> )	1	1	
Indianapolis.....	106	14.5	14.5	4	10	30
White.....	91			3	6	26
Colored.....	15	( <sup>5</sup> )	( <sup>5</sup> )	1	4	54
Jersey City.....	84	13.5	14.1	7	7	61
Kansas City, Kans.....	22	9.7	14.1	2	3	47
White.....	19			2	2	53
Colored.....	3	( <sup>5</sup> )	( <sup>5</sup> )	0	1	0
Kansas City, Mo.....	108	14.4	14.3	6	6	47
Knoxville.....	24	11.9	9.9	1	1	23
White.....	17			1	1	26
Colored.....	7	( <sup>5</sup> )	( <sup>5</sup> )	0	0	0
Los Angeles.....	251			18	19	55
Louisville.....	76	12.0	12.3	3	2	23
White.....	62			1	1	10
Colored.....	14	( <sup>5</sup> )	( <sup>5</sup> )	2	1	145
Lowell.....	35			2	0	47
Lynn.....	21	10.4	12.9	1	2	25
Memphis.....	80	21.9	22.5	11	7	131
White.....	28			2	6	37
Colored.....	52	( <sup>5</sup> )	( <sup>5</sup> )	9	1	303
Milwaukee.....	118	11.3	10.6	16	19	81
Minneapolis.....	122	14.0	12.2	12	12	78
Nashville.....	44	16.4	16.1	5	4	77
White.....	24			2	2	41
Colored.....	20	( <sup>5</sup> )	( <sup>5</sup> )	3	2	190
New Bedford.....	36			1	1	26
New Haven.....	49	13.6	15.3	3	1	58
New Orleans.....	172	20.9	16.6	12	20	70
White.....	95			2	11	18
Colored.....	77	( <sup>5</sup> )	( <sup>5</sup> )	10	9	168
New York.....	1,571	13.6	13.4	194	160	82
Bronx Borough.....	201	11.0	10.2	20	16	47
Brooklyn Borough.....	544	12.3	11.5	58	67	62
Manhattan Borough.....	641	19.1	19.5	98	61	161
Queens Borough.....	138	8.4	8.8	14	11	41
Richmond Borough.....	47	16.3	16.6	4	5	74
Newark, N. J.....	98	10.8	14.8	9	14	47
Oakland.....	44	8.4	10.7	8	2	96
Oklahoma City.....	27			2	2	39
Omaha.....	38	8.9	10.3	0	5	0
Paterson.....	37	13.3	13.3	5	1	87
Philadelphia.....	543	13.7	12.9	54	48	80
Pittsburgh.....	179	13.9	12.5	17	20	62

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended April 26, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929—Continued

City	Week ended Apr. 26, 1930		Annual death rate per 1,000, corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended Apr. 26, 1930 <sup>1</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Apr. 26, 1930	Corresponding week, 1929	
Portland, Oreg.....	78			5	3	61
Providence.....	68	12.4	14.8	7	7	64
Richmond.....	56	15.0	12.9	8	4	119
White.....	31			2	1	45
Colored.....	25	( <sup>2</sup> )	( <sup>2</sup> )	6	3	262
Rochester.....	74	11.8	14.6	4	2	35
St. Louis.....	244	15.0	14.1	24	16	78
St. Paul.....	58			6	3	61
Salt Lake City <sup>4</sup> .....	38	14.4	15.5	6	5	94
San Antonio.....	79	18.9	16.7	16	11	
San Diego.....	39			4	0	84
San Francisco.....	180	16.0	14.4	6	14	41
Schenectady.....	22	12.3	13.4	3	2	94
Seattle.....	88	12.0	9.7	2	3	20
Somerville.....	32	16.2	8.1	4	1	130
Spokane.....	22	10.5	12.4	3	2	78
Springfield, Mass.....	40	13.9	15.3	5	4	79
Syracuse.....	54	14.1	12.6	5	5	62
Tacoma.....	25	11.8	14.6	0	1	0
Toledo.....	83	13.8	15.2	5	11	46
Trenton.....	40	15.0	17.3	6	6	112
Utica.....	49	24.5	14.5	4	4	114
Washington, D. C.....	157	14.8	12.5	9	12	52
White.....	91			5	5	43
Colored.....	66	( <sup>2</sup> )	( <sup>2</sup> )	4	7	71
Waterbury.....	16			2	2	51
Wilmington, Del.....	38	15.4	11.4	4	1	90
Worcester.....	47	12.4	14.2	2	2	26
Yonkers.....	30	12.9	7.3	2	2	48
Youngstown.....	35	10.5	11.4	2	4	31

<sup>1</sup> Annual rate per 1,000 population.

<sup>2</sup> Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.

<sup>3</sup> Data for 73 cities.

<sup>4</sup> Deaths for week ended Friday.

<sup>5</sup> In the cities for which deaths are shown by color, the colored population in 1929 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

# 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 April 26, 1930, and April 27, 1929

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 26, 1930, and April 27, 1929*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929
<b>New England States:</b>								
Maine.....		6	6	1	30	186	0	0
New Hampshire.....		2	6	6	10	41	0	0
Vermont.....		1			80	3	0	0
Massachusetts.....	64	98	5	25	1,533	501	4	10
Rhode Island.....	6	9		1	5	115	0	0
Connecticut.....	17	21	5	3	76	484	5	
<b>Middle Atlantic States:</b>								
New York.....	143	347	147	14	1,898	1,154	12	24
New Jersey.....	127	105	14	9	1,360	332	7	10
Pennsylvania.....	102	177			1,205	1,694	19	8
<b>East North Central States:</b>								
Ohio.....	65	75	10	34	816	2,195	3	11
Indiana.....	13	8			91	423	7	1
Illinois.....	163	168	9	119	794	1,838	12	13
Michigan.....	57	86	6	5	2,358	796	30	76
Wisconsin.....	18	14	22	15	159	1,314	2	1
<b>West North Central States:</b>								
Minnesota.....	8	23	2	1	272	636	3	2
Iowa.....	7	5			453	32	2	2
Missouri.....	32	33	12	7	108	240	9	14
North Dakota.....	3	16			26	163	2	3
South Dakota.....	1	5			110	31	1	0
Nebraska.....	20	10		1	531	88	0	3
Kansas.....	11	9	1	5	819	379	5	5
<b>South Atlantic States:</b>								
Delaware.....		2	0		16	10	0	0
Maryland.....	20	16	19	15	68	27	2	1
District of Columbia.....	18	25	3	2	30	13	1	1
Virginia.....								
West Virginia.....	10	10	44	13	103	581	2	1
North Carolina.....	19	20	25	24	24	36	5	1
South Carolina.....	20	13	502	325	90	9	1	0
Georgia.....	4	5	52	28	272	21	2	1
Florida.....	3	11	1		530	48	0	1

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

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

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 26, 1930, and April 27, 1929—Continued*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929
<b>East South Central States:</b>								
Kentucky.....					32	39	3	0
Tennessee.....	5	7	43	26	347	78	29	3
Alabama.....	10	17	63	63	148	84	2	0
Mississippi.....	9	3					6	
<b>West South Central States:</b>								
Arkansas.....	5	3	31	9	68	27	7	6
Louisiana.....	26	21	25	47	122	71	5	6
Oklahoma <sup>1</sup> .....	4	6	19	63	310	60	2	1
Texas.....	29	23	26	72	193	128	0	0
<b>Mountain States:</b>								
Montana.....	3	5			34	149	1	6
Idaho.....					16	3	3	3
Wyoming.....	1	1			39	34	1	4
Colorado.....	15	6			993	6	2	9
New Mexico.....	6	3		3	58	9	1	0
Arizona.....	2		4		68		6	4
Utah <sup>1</sup> .....	4	2	6	6	298	6	2	9
<b>Pacific States:</b>								
Washington.....	7	4			463	205	12	11
Oregon.....	11	3	29	29	71	291	0	2
California.....	49	46	22	48	2,399	88	5	19

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929
<b>New England States:</b>								
Maine.....	1	1	24	12	0	0	4	1
New Hampshire.....	0	0	24	10	0	1	0	0
Vermont.....	0	0	11	12	12	7	0	0
Massachusetts.....	0	0	297	266	0	1	4	6
Rhode Island.....	0	0	30	14	0	0	1	0
Connecticut.....	0	1	80	46	0	3	1	1
<b>Middle Atlantic States:</b>								
New York.....	1	1	504	522	1	3	14	12
New Jersey.....	1	0	231	191	0	0	4	3
Pennsylvania.....	2	2	406	390	0	0	6	17
<b>East North Central States:</b>								
Ohio.....	1	2	277	260	151	50	30	4
Indiana.....	0	0	170	234	182	24	3	2
Illinois.....	0	1	473	452	150	43	5	4
Michigan.....	1	2	319	422	52	77	7	9
Wisconsin.....	1	0	187	190	17	5	1	5
<b>West North Central States:</b>								
Minnesota.....	0	1	91	120	3	5	0	1
Iowa.....	0	0	75	98	102	39	0	4
Missouri.....	0	0	99	75	88	15	2	4
North Dakota.....	0	0	31	29	25	17	0	0
South Dakota.....	0	0	30	7	45	18	0	0
Nebraska.....	0	0	78	99	113	36	1	1
Kansas.....	0	1	110	127	104	42	2	1
<b>South Atlantic States:</b>								
Delaware.....	0	0	5	4	0	0	0	0
Maryland <sup>1</sup> .....	0	0	136	53	0	0	5	4
District of Columbia.....	0	0	10	15	0	0	0	1
Virginia.....					7			9
West Virginia.....	0	0	31	13	0	8	15	4
North Carolina.....	0	0	29	24	18	20	2	2
South Carolina.....	0	2	5	2	8	7	10	11
Georgia.....	0	0	21	8	0	0	6	8
Florida.....	0	5	3	5	0	1	2	7

<sup>1</sup> Week ended Friday.

<sup>2</sup> Figures for 1930 are exclusive of Oklahoma City and Tulsa and for 1929 are exclusive of Oklahoma City only.

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 26, 1930, and April 27, 1929—Continued*

Division and State	Pollomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929	Week ended Apr. 26, 1930	Week ended Apr. 27, 1929
<b>East South Central States:</b>								
Kentucky.....	0	0	22	66	7	9	2	5
Tennessee.....	0	0	65	19	10	7	12	6
Alabama.....	0	3	9	0	9	1	2	15
Mississippi.....	0	1	9	9	27	1	4	6
<b>West South Central States:</b>								
Arkansas.....	0	1	4	6	8	8	4	6
Louisiana.....	1	0	18	41	19	5	22	17
Oklahoma <sup>1</sup> .....	0	0	31	24	130	65	3	5
Texas.....	0	0	42	67	87	52	9	11
<b>Mountain States:</b>								
Montana.....	0	0	38	35	13	44	4	1
Idaho.....	0	0	3	8	2	10	0	0
Wyoming.....	1	0	1	7	11	22	0	0
Colorado.....	0	0	22	19	4	9	0	0
New Mexico.....	0	0	13	5	11	1	2	4
Arizona.....	0	0	14	5	14	10	5	0
Utah <sup>1</sup> .....	0	0	8	5	0	10	2	0
<b>Pacific States:</b>								
Washington.....	0	1	31	28	63	56	3	5
Oregon.....	0	1	34	15	30	33	6	1
California.....	3	1	150	437	66	87	8	8

<sup>1</sup> Week ended Friday.

<sup>2</sup> Figures for 1930 are exclusive of Oklahoma City and Tulsa and for 1929 are exclusive of Oklahoma City only.

**SUMMARY OF MONTHLY REPORTS FROM STATES**

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

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Pollo- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>March, 1930</i>										
Alabama.....	20	89	705	142	1,166	31	1	118	27	39
Arkansas.....	28	50	418	175	73	29	0	86	90	6
California.....	34	245	164	5	7,822	2	12	825	410	28
Maryland.....	4	106	193		143	2	1	425	0	19
Mississippi.....	82	46	4,448	2,754	688	606	0	57	21	21
Montana.....	12	6	4		117		1	194	65	10
Nevada.....					30		0		7	
New Mexico.....	12	37	3	3	494	3	0	51	39	5
North Carolina.....	22	138	93		141	74	3	175	92	7
Ohio.....	37	249	138	1	3,068		4	1,750	823	86
Oklahoma <sup>1</sup> .....	11	77	379	75	697	33	2	131	449	34
Oregon.....		35	269		339		1	179	101	3
South Carolina.....	11	129	4,750	854	97	409	1	60	10	42
Tennessee.....	149	72	642	75	1,329	12	5	404	122	36
Virginia.....	17	133	2,100	21	2,221	35	0	271	38	14
Washington.....	22	31	64		1,200		0	252	380	14
Wisconsin.....	18	59	147		3,246		1	708	118	8

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



March, 1930	
Chicken pox:	Cases
Alabama.....	447
Arkansas.....	172
California.....	2,537
Maryland.....	866
Mississippi.....	1,158
Montana.....	53
Nevada.....	58
New Mexico.....	115
North Carolina.....	1,296
Ohio.....	2,162
Oklahoma <sup>1</sup> .....	101
Oregon.....	255
South Carolina.....	448
Tennessee.....	305
Virginia.....	723
Washington.....	541
Wisconsin.....	1,427
Conjunctivitis:	
New Mexico.....	8
Dengue:	
Mississippi.....	3
South Carolina.....	8
Diarrhea:	
South Carolina.....	488
Diarrhea and enteritis:	
Ohio.....	14
Dysentery:	
California (amebic).....	2
California (bacillary).....	2
Maryland.....	2
Mississippi (amebic).....	38
Mississippi (bacillary).....	407
New Mexico.....	1
Oklahoma <sup>1</sup> .....	7
Tennessee.....	6
Dysentery and diarrhea:	
Virginia.....	94
Food poisoning:	
California.....	53
Ohio.....	6
German measles:	
California.....	186
Maryland.....	32
Montana.....	5
North Carolina.....	35
Ohio.....	183
South Carolina.....	27
Washington.....	137
Granuloma (coccidioidal):	
California.....	5
Hookworm disease:	
Arkansas.....	2
California.....	1
Mississippi.....	341
South Carolina.....	88
Impetigo contagiosa:	
Maryland.....	1
Oregon.....	12
Washington.....	12
Lead poisoning:	
Ohio.....	17
Leprosy:	
California.....	1

Lethargic encephalitis:	
Alabama.....	1
California.....	4
Maryland.....	1
Ohio.....	4
Oregon.....	3
South Carolina.....	7
Tennessee.....	3
Washington.....	3
Wisconsin.....	1
Mumps:	
Alabama.....	140
Arkansas.....	77
California.....	3,467
Maryland.....	87
Mississippi.....	886
Montana.....	550
Nevada.....	6
New Mexico.....	312
Ohio.....	964
Oklahoma <sup>1</sup> .....	82
Oregon.....	341
South Carolina.....	230
Tennessee.....	207
Washington.....	603
Wisconsin.....	1,046
Ophthalmia neonatorum:	
California.....	4
Maryland.....	1
Mississippi.....	19
New Mexico.....	1
North Carolina.....	1
Ohio.....	106
Oklahoma <sup>1</sup> .....	1
South Carolina.....	16
Tennessee.....	3
Paratyphoid fever:	
California.....	2
Ohio.....	1
South Carolina.....	6
Psittacosis:	
Maryland.....	4
Puerperal septicemia:	
Mississippi.....	33
Ohio.....	5
Oregon.....	1
Washington.....	4
Rabies in animals:	
California.....	102
Maryland.....	1
Mississippi.....	8
South Carolina.....	13
Washington.....	1
Rabies in man:	
California.....	1
Mississippi.....	1
Rocky Mountain spotted or tick fever:	
Nevada.....	1
Oregon.....	5
Scabies:	
Maryland.....	3
Oregon.....	11
Washington.....	1

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

<b>Septic sore throat:</b>	<b>Cases</b>	<b>Undulant fever:</b>	<b>Cases</b>
Maryland.....	15	California.....	8
North Carolina.....	9	Maryland.....	3
Ohio.....	68	Ohio.....	2
Oklahoma <sup>1</sup> .....	29	South Carolina.....	1
Oregon.....	8	Virginia.....	1
Tennessee.....	4	Washington.....	2
Washington.....	1	Wisconsin.....	4
<b>Tetanus:</b>		<b>Vincent's angina:</b>	
California.....	6	Maryland.....	8
Maryland.....	1	Oklahoma <sup>1</sup> .....	2
Ohio.....	1	Oregon.....	4
South Carolina.....	5	Tennessee.....	13
<b>Trachoma:</b>		Washington.....	51
Arkansas.....	16	<b>Whooping cough:</b>	
California.....	8	Alabama.....	242
Mississippi.....	28	Arkansas.....	98
Ohio.....	4	California.....	779
Oklahoma <sup>1</sup> .....	4	Maryland.....	192
Oregon.....	1	Mississippi.....	1,402
<b>Trichinosis:</b>		Montana.....	37
California.....	5	Nevada.....	6
<b>Tularaemia:</b>		New Mexico.....	18
Nevada.....	2	North Carolina.....	1,864
Ohio.....	1	Ohio.....	803
South Carolina.....	2	Oklahoma <sup>1</sup> .....	95
Tennessee.....	2	Oregon.....	165
Virginia.....	2	South Carolina.....	769
<b>Typhus fever:</b>		Tennessee.....	204
Alabama.....	1	Virginia.....	1,125
North Carolina.....	1	Washington.....	320
Virginia.....	1	Wisconsin.....	947
Wisconsin.....	8		

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

### RECIPROCAL NOTIFICATIONS

*Notifications regarding communicable diseases sent during the month of March, 1930, by departments of health of certain States to other State health departments*

Disease	California	Illinois	Kansas	Minnesota	New York
Diphtheria.....					1
Gonorrhoea.....				3	
Measles.....					1
Scarlet fever.....				1	2
Smallpox.....		3			
Syphilis.....			3	2	
Tuberculosis.....	1	5		13	
Typhoid fever.....	1			1	

### GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 32,075,000. The estimated population of the 90 cities reporting deaths is more than 29,860,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

## Weeks ended April 19, 1930, and April 20, 1929

	1930	1929	Estimated expectancy
<i>Cases reported</i>			
<b>Diphtheria:</b>			
46 States.....	1,079	1,324	-----
97 cities.....	543	816	806
<b>Measles:</b>			
45 States.....	18,052	13,508	-----
97 cities.....	7,742	5,434	-----
<b>Meningococcus meningitis:</b>			
46 States.....	244	296	-----
97 cities.....	119	150	-----
<b>Poliomyelitis:</b>			
47 States.....	7	15	-----
<b>Scarlet fever:</b>			
46 States.....	4,665	4,552	-----
97 cities.....	1,865	1,627	1,359
<b>Smallpox:</b>			
46 States.....	1,485	1,022	-----
97 cities.....	173	57	78
<b>Typhoid fever:</b>			
46 States.....	190	210	-----
97 cities.....	36	59	32
<i>Deaths reported</i>			
<b>Influenza and pneumonia:</b>			
90 cities.....	983	811	-----
<b>Smallpox:</b>			
90 cities.....	0	0	-----

## City reports for week ended April 19, 1930

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

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1921 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
<b>NEW ENGLAND</b>								
<b>Maine:</b>								
Portland.....	10	1	0	-----	0	2	24	1
<b>New Hampshire:</b>								
Concord.....	0	0	0	-----	0	0	0	0
Manchester.....	0	1	0	-----	0	0	0	3
<b>Vermont:</b>								
Barre.....	2	0	0	-----	0	3	0	1
Burlington.....	1	0	1	-----	0	0	0	0
<b>Massachusetts:</b>								
Boston.....	47	36	20	-----	2	480	40	33
Fall River.....	2	3	5	-----	1	1	0	4
Springfield.....	5	3	6	-----	0	1	5	3
Worcester.....	18	4	7	-----	0	175	0	3
<b>Rhode Island:</b>								
Pawtucket.....	3	2	3	-----	0	2	0	0
Providence.....	8	7	6	-----	0	0	0	5
<b>Connecticut:</b>								
Bridgeport.....	5	4	1	-----	0	0	0	2
Hartford.....	15	5	0	-----	0	2	0	9
New Haven.....	17	1	1	-----	0	7	1	5

City reports for week ended April 19, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
<b>MIDDLE ATLANTIC</b>								
New York:								
Buffalo.....	10	9	12		0	26	15	21
New York.....	240	232	81	21	21	1,332	160	240
Rochester.....	10	8	2		0	30	1	4
Syracuse.....	20	3	0		1	14	47	2
New Jersey:								
Camden.....	2	8	13		0	2	3	5
Newark.....	54	13	51	5	1	434	12	7
Trenton.....	4	3	5		1	13	0	3
Pennsylvania:								
Philadelphia.....	72	63	10	1	6	205	70	53
Pittsburgh.....	34	15	9	1	1	301	6	48
Reading.....	15	2	0		0	3	2	5
Scranton.....	2	3	0		0	0	0	
<b>EAST NORTH CENTRAL</b>								
Ohio:								
Cincinnati.....	14	7	3		2	62	4	12
Cleveland.....	141	24	13	6	0	9	42	19
Columbus.....	20	3	4	1	1	112	6	8
Toledo.....	30	2	1	2	2	107	15	4
Indiana:								
Fort Wayne.....	1	2	0		0	0	0	4
Indianapolis.....	35	4	1		0	14	11	17
South Bend.....		1						
Terre Haute.....	8	1	0		0	10	0	0
Illinois:								
Chicago.....	113	86	92	4	3	52	76	62
Springfield.....	6	1	0	1	1	3	0	3
Michigan:								
Detroit.....	80	43	33	6	7	1,383	84	33
Flint.....	19	3	3		0	62	3	1
Grand Rapids.....	4	3	1		4	2	0	3
Wisconsin:								
Kenosha.....	13	0	0		0	2	0	1
Madison.....	2	0	1		0	41	1	0
Milwaukee.....	130	11	2	2	2	15	55	14
Racine.....	2	2	1		0	3	0	0
Superior.....	3	0	0		0	2	0	1
<b>WEST NORTH CENTRAL</b>								
Minnesota:								
Duluth.....	2	0	0		0	45	0	3
Minneapolis.....	13	13	1		1	33	5	6
St. Paul.....	31	9	2		2	6	10	7
Iowa:								
Davenport.....	6	1	0			42	0	
Des Moines.....	1	1	0			22	0	
Sioux City.....	0	1	0			116	9	
Waterloo.....	30	0	0			5	1	
Missouri:								
Kansas City.....	18	4	1		1	10	14	14
St. Joseph.....	1	0	0		1	0	0	3
St. Louis.....	62	34	23	2	1	13	38	
North Dakota:								
Fargo.....	1	0	0		0	2	31	0
Grand Forks.....	0	0	0			0	0	
South Dakota:								
Aberdeen.....	26	0	0			0	5	
Sioux Falls.....	0	0	0			12	0	
Nebraska:								
Omaha.....	12	2	16		0	92	0	13
Kansas:								
Topeka.....	3	1	0		0	145	11	1
Wichita.....	7	1	2		0	54	21	5
<b>SOUTH ATLANTIC</b>								
Delaware:								
Wilmington.....	3	2	1		0	4	0	2
Maryland:								
Baltimore.....	170	23	14	7	2	26	9	29
Cumberland.....	0	0	0		0	0	0	3
Frederick.....	0	0	0		0	0	0	1

## City reports for week ended April 19, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
<b>SOUTH ATLANTIC—CON.</b>								
District of Columbia:								
Washington.....	21	12	5	2	2	26	0	17
Virginia:								
Lynchburg.....	6	1	0	-----	0	89	8	5
Norfolk.....	6	1	2	-----	0	1	37	6
Richmond.....	4	2	2	-----	2	7	2	5
Roanoke.....	0	0	2	-----	0	252	0	2
West Virginia:								
Charleston.....	13	0	0	4	1	6	1	5
Wheeling.....	1	1	1	-----	0	5	0	5
North Carolina:								
Raleigh.....	5	0	0	-----	0	0	0	2
Wilmington.....	11	0	1	-----	0	0	0	3
Winston-Salem.....	4	0	1	-----	0	1	8	3
South Carolina:								
Charleston.....	1	0	0	15	0	0	3	6
Columbia.....	0	0	2	-----	0	0	7	1
Georgia:								
Atlanta.....	13	2	3	24	1	70	37	8
Brunswick.....	0	0	0	-----	0	2	0	0
Savannah.....	0	0	0	3	2	0	0	3
Florida:								
Miami.....	3	1	2	-----	0	0	0	1
St. Petersburg.....	-----	0	-----	-----	1	-----	-----	0
Tampa.....	9	1	0	-----	1	55	23	1
<b>EAST SOUTH CENTRAL</b>								
Kentucky:								
Covington.....	2	1	2	-----	0	0	0	2
Tennessee:								
Memphis.....	5	3	1	-----	0	2	8	5
Nashville.....	4	0	0	-----	4	8	0	12
Alabama:								
Birmingham.....	12	0	0	5	4	5	4	10
Mobile.....	2	0	0	-----	1	11	0	3
Montgomery.....	4	0	0	2	-----	24	0	-----
<b>WEST SOUTH CENTRAL</b>								
Arkansas:								
Fort Smith.....	3	0	0	-----	-----	34	0	-----
Little Rock.....	7	1	1	-----	0	3	0	0
Louisiana:								
New Orleans.....	3	7	35	4	5	17	0	9
Shreveport.....	8	6	0	-----	0	6	9	3
Oklahoma:								
Oklahoma City.....	1	1	1	3	0	77	3	2
Tulsa.....	9	1	0	-----	-----	127	0	-----
Texas:								
Dallas.....	10	4	5	-----	1	83	4	6
Fort Worth.....	10	2	3	-----	1	20	0	2
Galveston.....	0	0	1	-----	0	0	0	2
Houston.....	2	3	13	-----	0	1	0	8
San Antonio.....	6	3	4	-----	1	0	0	6
<b>MOUNTAIN</b>								
Montana:								
Billings.....	0	0	0	-----	0	2	5	0
Great Falls.....	1	0	0	-----	0	2	12	1
Helena.....	0	0	0	-----	0	2	4	0
Missoula.....	0	0	0	-----	0	0	1	4
Idaho:								
Boise.....	0	0	0	-----	0	0	0	0
Colorado:								
Denver.....	24	9	1	-----	1	615	17	12
Pueblo.....	13	1	0	-----	0	4	111	0
New Mexico:								
Albuquerque.....	7	0	0	-----	0	19	4	1
Arizona:								
Phoenix.....	1	0	0	-----	0	29	0	2
Utah:								
Salt Lake City.....	7	3	0	-----	0	145	9	2
Nevada:								
Reno.....	0	0	0	-----	0	-----	0	0

City reports for week ended April 19, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
<b>PACIFIC</b>								
Washington:								
Seattle.....	27	3	1			347	61	
Spokane.....	26	3	1			0	0	
Tacoma.....	5	1	1		0	77	1	2
Oregon:								
Portland.....	17	7	2		1	31	21	5
Salem.....	3	0	1		0	0	5	0
California:								
Los Angeles.....	53	34	10		11	315	30	9
Sacramento.....	1	2	0		0	15	10	3
San Francisco.....	32	17	5		3	135	58	1

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
<b>NEW ENGLAND</b>											
Maine:											
Portland.....	3	1	0	0	0	2	0	0	0	1	19
New Hampshire:											
Concord.....	0	0	0	0	0	0	0	0	0	0	9
Manchester.....	4	0	0	0	0	0	0	0	0	0	7
Vermont:											
Barre.....	0	0	0	1	0	1	0	0	0	1	5
Burlington.....	1	1	1	0	0	0	0	0	0	0	10
Massachusetts:											
Boston.....	71	68	0	0	0	18	2	1	0	28	261
Fall River.....	4	5	0	0	0	1	0	1	0	8	41
Springfield.....	9	11	0	0	0	0	0	0	0	9	29
Worcester.....	8	4	0	0	0	4	0	0	0	34	59
Rhode Island:											
Pawtucket.....	1	2	0	0	0	0	0	0	0	5	22
Providence.....	10	17	0	0	0	2	0	0	0	9	75
Connecticut:											
Bridgeport.....	11	13	0	0	0	2	0	0	0	2	30
Hartford.....	4	10	0	0	0	1	0	1	0	1	45
New Haven.....	8	15	0	0	0	1	0	0	0	6	49
<b>MIDDLE ATLANTIC</b>											
New York:											
Buffalo.....	27	37	0	0	0	11	0	0	0	14	167
New York.....	312	297	0	0	0	123	9	2	0	63	1,623
Rochester.....	13	9	0	0	0	3	0	0	0	2	98
Syracuse.....	11	25	0	0	0	1	0	0	0	42	50
New Jersey:											
Camden.....	6	1	0	0	0	0	0	1	0	1	28
Newark.....	34	43	0	0	0	6	1	0	0	20	131
Trenton.....	4	9	0	0	0	5	0	1	1	1	36
Pennsylvania:											
Philadelphia.....	97	141	0	0	0	38	2	0	0	11	487
Pittsburgh.....	28	12	0	0	0	9	1	1	0	22	205
Reading.....	6	4	0	0	0	1	0	0	0	6	34
Scranton.....	2	1	0	0	0	0	0	0	0	0	
<b>EAST NORTH CENTRAL</b>											
Ohio:											
Cincinnati.....	17	27	1	3	0	10	0	0	0	0	139
Cleveland.....	33	51	0	0	0	22	0	3	0	75	242
Columbus.....	8	3	0	3	0	2	0	0	0	10	87
Toledo.....	13	14	0	11	0	3	0	0	0	6	87
Indiana:											
Fort Wayne.....	5	5	2	3	0	0	0	0	0	0	20
Indianapolis.....	9	33	7	9	0	0	0	0	1	10	
South Bend.....	4		0			0					
Terre Haute.....	2	6	1	0	0	1	0	0	0	1	22

## City reports for week ended April 19, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
<b>EAST NORTH CENTRAL—CON.</b>											
Illinois:											
Chicago.....	118	286	2	13	0	47	1	1	0	65	690
Springfield.....	4	3	0	0	0	1	1	0	0	3	26
Michigan:											
Detroit.....	107	135	1	4	0	29	1	0	0	70	313
Flint.....	8	14	2	2	0	1	0	0	0	15	21
Grand Rapids.....	9	16	1	0	0	0	0	0	0	7	35
Wisconsin:											
Kenosha.....	2	3	1	0	0	0	0	0	0	8	10
Madison.....	3	3	0	0	0	0	0	0	0	16	9
Milwaukee.....	29	24	1	0	0	5	0	0	1	42	115
Racine.....	4	3	0	0	0	1	0	0	0	20	13
Superior.....	3	4	0	0	0	1	0	0	0	0	12
<b>WEST NORTH CENTRAL</b>											
Minnesota:											
Duluth.....	7	1	0	5	0	1	0	0	0	9	24
Minneapolis.....	47	15	3	0	0	1	1	0	0	0	112
St. Paul.....	27	13	0	0	0	6	1	0	0	14	59
Iowa:											
Davenport.....	2	1	0	24			0	0		8	
Des Moines.....	6	20	1	16			0	0		0	24
Sioux City.....	2	1	1	3			0	0		5	
Waterloo.....	2	1	0	25			0	0		3	
Missouri:											
Kansas City.....	16	24	1	1	0	7	0	0	0	14	126
St. Joseph.....	3	7	1	0	0	0	0	0	0	0	57
St. Louis.....	35	92	2	14	0	11	1	2	1	13	222
North Dakota:											
Fargo.....	1	0	0	1	0	0	0	1	0	2	2
Grand Forks.....	1	1	0	0			0	0		0	
South Dakota:											
Aberdeen.....	1	0	0	31			0	0		18	
Sioux Falls.....	1	3	0	2			0	0		0	7
Nebraska:											
Omaha.....	3	7	4	16	0	3	0	0	0	1	71
Kansas:											
Topeka.....	4	12	1	4	0	1	0	0	0	15	33
Wichita.....	3	16	2	3	0	0	0	1	0	12	23
<b>SOUTH ATLANTIC</b>											
Delaware:											
Wilmington.....	5	10	0	0	0	1	0	0	0	0	25
Maryland:											
Baltimore.....	31	89	0	0	0	18	2	2	0	18	227
Cumberland.....	1	1	0	0	0	0	0	0	0	0	16
Frederick.....	0	0	0	0	0	0	0	0	0	0	4
District of Columbia:											
Washington.....	24	23	1	0	0	16	0	1	0	5	167
Virginia:											
Lynchburg.....	1	0	0	0	0	0	0	0	0	12	21
Norfolk.....	2	0	1	0	0	2	0	2	0	1	
Richmond.....	3	10	0	0	0	1	0	2	0	4	43
Roanoke.....	1	0	0	1	0	1	0	0	0	9	21
West Virginia:											
Charleston.....	0	0	0	0	0	0	0	4	0	12	24
Wheeling.....	2	1	0	0	0	1	0	0	0	1	20
North Carolina:											
Raleigh.....	0	0	0	0	0	0	0	0	0	1	23
Wilmington.....	0	0	1	0	0	2	0	0	0	24	19
Winston-Salem.....	1	0	2	0	0	0	0	0	0	4	8
South Carolina:											
Charleston.....	0	1	1	1	0	2	0	0	0	1	31
Columbia.....	0	0	1	0	0	2	0	0	0	17	16
Georgia:											
Atlanta.....	4	14	3	0	0	6	0	0	0	3	72
Brunswick.....	0	0	0	0	0	1	0	0	0	0	7
Savannah.....	0	1	1	0	0	2	0	0	0	0	33
Florida:											
Miami.....	1	5	2	0	0	0	1	0	0	0	17
St. Petersburg.....	0	0	0	0	0	0	0	0	0	0	23
Tampa.....	0	1	0	0	0	3	0	2	0	1	25

City reports for week ended April 19, 1930—Continued

Division, State, and City	Scarlet fever		Smallpox			Tuber- culo- sis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
<b>EAST SOUTH CENTRAL</b>											
Kentucky:											
Covington.....	2	3	0	0	0	1	0	0	0	0	14
Tennessee:											
Memphis.....	7	13	1	1	0	3	0	0	0	1	96
Nashville.....	2	2	0	2	0	10	0	0	0	1	64
Alabama:											
Birmingham...	2	5	3	0	0	3	0	0	0	6	68
Mobile.....	0	0	1	0	0	2	0	1	0	0	22
Montgomery...	0	1	1	0			0	0		0	
<b>WEST SOUTH CENTRAL</b>											
Arkansas:											
Fort Smith.....	1	1	0	0			0	0		2	
Little Rock.....	0	1	0	1	0	1	0	0	0	0	
Louisiana:											
New Orleans...	7	13	0	1	0	12	2	0	0	0	167
Shreveport.....	1	1	1	0	0	1	0	0	0	0	25
Oklahoma:											
Oklahoma City	1	26	3	21	0	3	0	0	0	0	40
Tulsa.....	2	4	2	0			0	0		14	
Texas:											
Dallas.....	4	9	2	1	0	3	1	1	0	2	59
Fort Worth.....	1	4	5	2	0	1	0	0	0	0	32
Galveston.....	1	2	0	0	0	0	1	0	0	0	13
Houston.....	1	2	1	10	0	11	0	1	0	1	57
San Antonio...	1	4	0	7	0	8	0	0	0	0	88
<b>MOUNTAIN</b>											
Montana:											
Billings.....	1	0	0	0	0	0	0	0	0	0	12
Great Falls.....	0	25	0	0	0	0	0	0	0	0	9
Helena.....	0	1	0	0	0	0	0	0	0	3	3
Missoula.....	1	1	1	3	0	0	0	2	0	0	7
Idaho:											
Boise.....	2	0	1	0	0	0	0	0	0	1	7
Colorado:											
Denver.....	11	3	1	0	0	9	0	0	0	32	81
Pueblo.....	1	1	0	0	0	1	0	0	0	3	8
New Mexico:											
Albuquerque <sup>1</sup> ...	0	2	0	0	0	2	0	0	0	0	11
Arizona:											
Phoenix.....	1	1	0	2	0	1	0	0	0	0	14
Utah:											
Salt Lake City.	2	7	1	0	0	2	1	0	0	28	22
Nevada:											
Reno.....	0	2	0	0	0	0	0	0	0	0	1
<b>PACIFIC</b>											
Washington:											
Seattle.....	7	11	3	2			1	1		5	
Spokane.....	5	1	3	12			0	0		24	
Tacoma.....	2	3	3	7	0	0	0	0	0	0	25
Oregon:											
Portland.....	5	4	9	16	0	1	0	1	0	32	71
Salem.....	0	0	1	0	0	0	0	0	0	4	
California:											
Los Angeles...	29	32	4	10	0	19	1	2	0	17	246
Sacramento...	1	3	1	1	0	3	1	1	1	0	
San Francisco..	20	21	1	3	0	11	1	0	0	7	173

<sup>1</sup> The report of 3 cases of smallpox at Albuquerque, N. Mex., during the week ended Mar. 15, published in PUBLIC HEALTH REPORTS of Apr. 4, 1930, was an error, later information showing that no cases of smallpox occurred there during that week.



## City reports for week ended April 19, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
<b>NEW ENGLAND</b>									
Massachusetts:									
Boston.....	1	4	0	0	0	0	0	0	0
Connecticut:									
Hartford.....	0	1	0	0	0	0	0	0	0
<b>MIDDLE ATLANTIC</b>									
New York:									
New York City.....	13	8	3	2	0	0	1	2	1
New Jersey:									
Newark.....	1	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia.....	5	0	0	0	0	0	0	0	0
Pittsburgh.....	4	2	0	0	0	0	0	0	1
<b>EAST NORTH CENTRAL</b>									
Ohio:									
Cleveland.....	5	2	0	0	0	0	0	0	0
Indiana:									
Indianapolis.....	7	4	0	0	0	0	0	0	0
Terre Haute.....	1	0	0	0	0	0	0	0	0
Illinois:									
Chicago.....	8	9	0	0	0	0	0	0	0
Michigan:									
Detroit.....	23	3	0	0	0	0	0	1	1
Flint.....	2	2	0	0	0	0	0	0	0
Wisconsin:									
Madison.....	0	1	0	0	0	0	0	0	0
Milwaukee.....	1	0	0	0	0	0	0	0	0
Racine.....	2	2	0	0	0	0	0	0	0
<b>WEST NORTH CENTRAL</b>									
Minnesota:									
Minneapolis.....	1	0	0	0	0	0	0	0	0
St. Paul.....	1	0	0	0	0	0	0	0	0
Iowa:									
Waterloo.....	1	0	0	0	0	0	0	0	0
Missouri:									
Kansas City.....	3	0	0	0	0	0	0	0	0
St. Joseph.....	2	1	0	0	0	0	0	0	0
St. Louis.....	5	4	0	0	0	0	0	0	0
<b>SOUTH ATLANTIC<sup>1</sup></b>									
Maryland:									
Baltimore.....	2	1	0	0	0	0	0	0	0
North Carolina:									
Wilmington <sup>1</sup> .....	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston.....	0	0	0	0	3	1	0	0	0
Georgia:									
Atlanta.....	0	1	0	0	0	0	0	0	0
Savannah <sup>1</sup> .....	0	0	0	0	1	1	0	0	0
<b>EAST SOUTH CENTRAL</b>									
Tennessee:									
Memphis.....	18	7	0	0	0	1	0	0	0
Nashville.....	1	1	0	0	0	0	0	0	0
<b>WEST SOUTH CENTRAL</b>									
Arkansas:									
Little Rock.....	0	1	0	0	0	0	0	0	0
Louisiana:									
New Orleans.....	4	2	0	0	3	1	0	0	0
Shreveport.....	0	0	0	0	0	1	0	0	0
Texas:									
San Antonio.....	1	0	0	0	0	0	0	0	0

<sup>1</sup> Typhus fever, 2 cases and 1 death: 1 case at Wilmington, N. C., 1 case at Savannah, Ga., and 1 death at Tampa, Fla.

City reports for week ended April 19, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
<b>MOUNTAIN</b>									
Montana:									
Great Falls.....	1	1	0	0	0	0	0	0	0
Colorado:									
Denver.....	1	1	0	0	0	0	0	0	0
Utah:									
Salt Lake.....	0	2	0	0	0	0	0	0	0
<b>PACIFIC</b>									
Washington:									
Seattle.....	1	0	0	0	0	0	0	0	0
Oregon:									
Portland.....	0	1	1	0	0	0	0	0	0
California:									
Los Angeles.....	3	0	0	0	0	0	1	0	0
Sacramento.....	1	0	0	0	0	0	0	0	0
San Francisco.....	0	0	0	0	0	1	0	0	0

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended April 19, 1930, compared with those for a like period ended April 20, 1929. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 32,000,000. The 91 cities reporting deaths have more than 30,500,000 estimated population.

Summary of weekly reports from cities, March 16 to April 19, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929<sup>1</sup>

DIPHTHERIA CASE RATES

	Week ended—									
	Mar. 22, 1930	Mar. 23, 1929	Mar. 29, 1930	Mar. 30, 1929	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13, 1929	Apr. 19, 1930	Apr. 20, 1929
98 cities.....	100	135	84	128	81	131	95	124	88	135
New England.....	60	119	51	101	68	135	75	117	109	141
Middle Atlantic.....	102	180	84	187	78	190	97	166	87	198
East North Central.....	133	142	115	119	108	125	115	126	97	122
West North Central.....	72	131	63	139	51	75	87	83	85	112
South Atlantic.....	82	60	64	66	59	82	73	71	59	66
East South Central.....	40	41	54	41	34	27	7	75	20	7
West South Central.....	146	118	134	118	161	114	164	122	220	99
Mountain.....	96	35	43	44	27	44	77	61	9	70
Pacific.....	52	68	40	29	59	59	59	65	43	68

<sup>1</sup> The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1930 and 1929, respectively.

<sup>2</sup> New Haven, Conn., San Antonio, Tex., and Great Falls, Mont., not included.

<sup>3</sup> South Bend, Ind., not included.

<sup>4</sup> New Haven, Conn., not included.

<sup>5</sup> San Antonio, Tex., not included.

<sup>6</sup> Great Falls, Mont., not included.

Summary of weekly reports from cities, March 16 to April 19, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

## MEASLES CASE RATES

	Week ended—									
	Mar. 22, 1930	Mar. 23, 1929	Mar. 29, 1930	Mar. 30, 1929	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13, 1929	Apr. 19, 1930	Apr. 20, 1929
98 cities.....	793	757	899	716	1,041	839	1,222	824	1,258	896
New England.....	944	563	1,023	467	1,443	521	1,431	638	1,491	498
Middle Atlantic.....	868	179	644	154	832	174	1,019	100	1,150	146
East North Central.....	843	1,695	661	1,892	807	1,836	913	1,946	1,666	2,023
West North Central.....	973	1,882	890	1,784	842	1,963	1,174	1,667	968	2,124
South Atlantic.....	864	451	637	414	783	650	976	464	996	760
East South Central.....	1,457	137	1,093	89	584	89	371	130	337	55
West South Central.....	587	190	841	95	936	248	773	232	538	175
Mountain.....	2,815	766	3,424	409	4,883	618	7,475	192	6,617	309
Pacific.....	2,100	239	2,549	232	2,843	273	2,402	319	2,100	377

## SCARLET FEVER CASE RATES

98 cities.....	323	345	315	318	1,306	290	327	270	1,303	268
New England.....	341	364	332	391	1,418	341	321	317	368	242
Middle Atlantic.....	310	308	315	264	308	244	296	224	276	224
East North Central.....	422	495	286	453	381	426	428	372	1,388	418
West North Central.....	328	292	300	310	266	275	391	242	359	216
South Atlantic.....	262	169	249	167	253	94	282	122	277	90
East South Central.....	202	308	263	267	162	212	148	185	162	144
West South Central.....	116	270	120	274	188	270	116	229	123	225
Mountain.....	343	113	446	78	1,155	104	326	165	343	70
Pacific.....	236	267	239	311	196	314	253	374	168	372

## SMALLPOX CASE RATES

98 cities.....	25	11	23	16	1,24	11	29	12	1,28	9
New England.....	0	7	2	11	10	2	2	2	2	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	20	12	18	17	30	15	23	20	1,23	11
West North Central.....	95	12	97	25	85	17	146	8	137	10
South Atlantic.....	2	0	7	13	2	4	9	4	4	2
East South Central.....	7	7	20	41	0	7	13	7	20	0
West South Central.....	52	99	49	91	1,22	76	30	76	75	11
Mountain.....	34	44	26	44	1,109	26	60	78	26	44
Pacific.....	120	14	83	22	83	17	104	10	83	60

## TYPHOID FEVER CASE RATES

98 cities.....	8	7	8	10	1,5	5	5	12	1,6	10
New England.....	0	7	2	4	1,5	4	0	9	7	7
Middle Atlantic.....	7	6	15	5	3	2	1	7	2	8
East North Central.....	1	4	3	17	2	7	1	11	1,3	4
West North Central.....	9	6	4	8	2	4	4	25	8	10
South Atlantic.....	13	6	5	13	4	4	20	13	20	24
East South Central.....	94	27	34	27	34	7	20	21	7	7
West South Central.....	11	8	7	19	1,13	8	7	42	7	42
Mountain.....	17	9	0	0	1,18	0	43	0	17	0
Pacific.....	12	19	2	0	7	7	5	7	9	10

<sup>1</sup> New Haven, Conn., San Antonio, Tex., and Great Falls, Mont., not included.

<sup>2</sup> South Bend, Ind., not included.

<sup>3</sup> New Haven, Conn., not included.

<sup>4</sup> San Antonio, Tex., not included.

<sup>5</sup> Great Falls, Mont., not included.

Summary of weekly reports from cities, March 16 to April 19, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

INFLUENZA DEATH RATES

	Week ended—									
	Mar. 22, 1930	Mar. 23, 1929	Mar. 29, 1930	Mar. 30, 1929	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13, 1929	Apr. 19, 1930	Apr. 20, 1929
91 cities.....	16	27	14	18	* 13	20	17	15	* 15	15
New England.....	2	4	9	4	4	11	7	7	7	9
Middle Atlantic.....	14	23	11	12	15	16	21	14	15	10
East North Central.....	9	20	11	16	10	18	8	15	* 13	14
West North Central.....	12	30	6	18	9	27	9	6	18	18
South Atlantic.....	26	30	15	22	7	17	24	17	20	21
East South Central.....	88	90	110	90	44	75	52	30	66	15
West South Central.....	27	74	34	35	* 32	47	27	31	27	51
Mountain.....	60	78	51	52	* 27	44	26	17	9	9
Pacific.....	9	31	3	16	0	19	15	22	8	13

PNEUMONIA DEATH RATES

91 cities.....	165	168	167	157	* 164	149	169	139	* 153	127
New England.....	199	186	202	171	* 164	101	171	126	146	114
Middle Atlantic.....	168	190	197	180	194	178	195	161	190	134
East North Central.....	150	141	118	132	146	135	126	126	* 113	119
West North Central.....	121	189	133	150	115	147	148	114	154	103
South Atlantic.....	203	185	194	159	179	144	211	165	185	146
East South Central.....	214	172	258	172	177	142	228	164	236	157
West South Central.....	184	78	176	125	* 157	137	195	90	130	78
Mountain.....	189	165	172	131	* 191	122	180	113	163	122
Pacific.....	95	163	114	151	77	126	89	94	46	151

\* New Haven, Conn., San Antonio, Tex., and Great Falls, Mont., not included.  
 † South Bend, Ind., not included.  
 ‡ New Haven, Conn., not included.  
 § San Antonio, Tex., not included.  
 ¶ Great Falls, Mont., not included.

# FOREIGN AND INSULAR

## CANADA

*Provinces—Communicable diseases—Week ended April 12, 1930.—*  
The Department of Pensions and National Health reports cases of certain communicable diseases in Canada for the week ended April 12, 1930, as follows:

Province	Cerebro-spinal fever	Influenza	Pollomy-elitis	Small-pox	Typhoid fever
Prince Edward Island.....			2		
Nova Scotia.....		5			
New Brunswick.....					1
Quebec.....					2
Ontario.....	6	9		17	2
Manitoba.....				2	
Saskatchewan.....				3	
Alberta.....	1			3	
British Columbia.....				8	
<b>Total.....</b>	<b>7</b>	<b>14</b>	<b>2</b>	<b>33</b>	<b>5</b>

*Quebec—Communicable diseases—Week ended April 12, 1930.—*  
The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended April 12, 1930, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	63	Mumps.....	104
Diphtheria.....	30	Puerperal septicemia.....	1
Erysipelas.....	6	Scarlet fever.....	81
German measles.....	60	Tuberculosis.....	65
Influenza.....	3	Typhoid fever.....	2
Measles.....	128	Whooping cough.....	64

## MEXICO

*Vera Cruz—Communicable diseases—Six weeks ended April 19, 1930.—*  
During the six weeks ended April 19, 1930, deaths from certain communicable diseases were reported in Vera Cruz, Mexico, as follows:

Disease	Week ended—						Total
	Mar. 15, 1930	Mar. 22, 1930	Mar. 29, 1930	Apr. 5, 1930	Apr. 12, 1930	Apr. 19, 1930	
Cancer.....	1	1		2		1	5
Cerebrospinal meningitis.....		3		1			4
Dysentery.....						1	1
Epilepsy.....	1						1
Gastrointestinal disorders.....	5	11	3	3	8	7	37
Malaria.....			2		1		3
Pneumonia.....	1	2		2	1		6
Tetanus.....			1		2	1	4
Tuberculosis.....	7	7	3	3	7	7	34
Typhoid fever.....			1		1		2

**PANAMA CANAL ZONE**

*Communicable diseases—March, 1930.*—During the month of March, 1930, certain communicable diseases, including imported cases, were reported in the Panama Canal Zone and terminal cities as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis.....	2	1	Measles.....	30	.....
Chicken pox.....	76	.....	Pneumonia.....	.....	23
Diphtheria.....	3	.....	Scarlet fever.....	1	.....
Dysentery (amebic).....	1	.....	Tuberculosis.....	.....	22
Dysentery (bacillary).....	7	.....	Typhoid fever.....	2	.....
Malaria.....	78	1	Whooping cough.....	8	1

**TRINIDAD (BRITISH WEST INDIES)**

*Port of Spain—Vital statistics (comparative)—March, 1930.*—The following statistics for the month of March for the years 1929 and 1930 are taken from a report issued by the Public Health Department of Port of Spain, Trinidad:

	March, 1929	March, 1930
Number of births.....	164	183
Birth rate per 1,000 population.....	29.1	32.0
Number of deaths.....	123	107
Death rate per 1,000 population.....	21.8	18.7
Deaths under 1 year.....	24	12
Infant mortality rate per 1,000 births.....	146.3	65.6

**YUGOSLAVIA**

*Communicable diseases—March, 1930.*—During the month of March, 1930, certain communicable diseases were reported in Yugoslavia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	34	5	Measles.....	2,051	38
Cerebrospinal meningitis.....	20	9	Poliomylitis.....	1	.....
Diphtheria and croup.....	553	105	Scarlet fever.....	1,076	184
Dysentery.....	30	.....	Tetanus.....	11	4
Erysipelas.....	161	12	Typhoid fever.....	233	21
Leprosy.....	1	.....	Typhus fever.....	46	2



**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

**CHOLERA—Continued**

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

Place	Week ended—																				
	Oct. 20-26, 1929		Nov. 17-23, 1929		Dec. 16, 1929-Jan. 11, 1930		January, 1930			February, 1930			March, 1930			April, 1930					
	18	25	1	8	15	22	1	8	15	22	29	5	12								
															November, 1929		December, 1929		January, 1930		February, 1930
Place	Septem-ber, 1929	October, 1929	Novem-ber, 1929	December, 1929		January, 1930		February, 1930		March, 1930		April, 1930									
	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20							
Slam.....																					
Bangkok.....																					
Nagara Pathom.....																					
On vessel:																					
S. S. at Suva, Fiji Islands.....																					
S. S. Sutley, at Batavia, from Calcutta.....																					
Indo-China (French) (see also table above):																					
Annam <sup>1</sup> .....	C	1	2																		
Cambodia <sup>1</sup> .....	C	35	43																		
Cochin-China <sup>1</sup> .....	C	221	15																		
Laos.....	C	45	3																		
		12																			

<sup>1</sup> Reports incomplete.



## PLAGUE

Place	Week ended—														
	January, 1930			February, 1930			March, 1930			April, 1930					
	18	25		1	8	15	22	1	8	15	22	29	5	12	19
Argentina:															
Andalgalpa, <sup>1</sup>															
Rosario.....															
Plague-infected rats.....															
Santa Fe.....															
Tucuman.....															
Villa Lila.....															
Azores: Ponta Delgada.....															
Belgian Congo: Djugu.....															
Brazil:															
Rio de Janeiro.....															
Rio de Janeiro.....															
Sao Paulo, <sup>2</sup>															
British East Africa (see also table below):															
Tanganyika.....															
Uganda.....															
Ceylon:															
Colombo.....															
Plague-infected rats.....															
Chile: Antofagasta.....															
Dutch East Indies:															
Batavia and West Java.....															
Plague-infected rats.....															
Celebes—Makassar.....															
Plague-infected rodents.....															
East Java and Madura.....															
Java and Madura.....															
Surabaya.....															

<sup>1</sup> On Mar. 11, 3 deaths from bubonic plague were reported in Andalgala, Catamarca Province, Argentina, since Feb. 5, 1930.

<sup>2</sup> 21 cases of plague with 8 deaths were reported Jan. 29, 1930, in the State of Sao Paulo, Brazil; 15 of these cases were in the city of Sao Paulo.





**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

**PLAGUE—Continued**

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

Place	Octo-ber, 1929	No-ven-ber, 1929	De-cem-ber, 1929	Janu-ary, 1930	Feb-ruary, 1930	March, 1930	Octo-ber, 1929	No-ven-ber, 1929	De-cem-ber, 1929	Janu-ary, 1930	Feb-ruary, 1930	March, 1930
British East Africa (see also table above):												
Kenya.....	146	137	54	34	1		27	4	12			
Uganda.....	364	179	216	57			27	3	12			
Ecuador: Guayaquil.....	361	194	199	78	2		4	4	2			
Plague-infected rats	12	14	8	4	2		141	163	97			
Greece (see also table above)	4	6	13	4	2		139	93	98			
	5	2	1				1					
Indo-China (see also table above)	208	132	100	10	27		45	23	5			13
Madagascar (see also table above)	193	204	204	232			13	16	2			5
Ambohitra Province.....	2	115	115	238			2	17	6			
Antsirabe Province.....	2	52	111				41	5	1			
Antsirabo Province.....	17	35	76				24	1			2	
Itasy Province.....	17	6	16				3			3		
Miscellaneous.....	10	19	16				3			1		
	12	10	19				41	8				
	11	6	3				21	4				

**SMALLPOX**

Place	Week ended—													
	January, 1930			February, 1930			March, 1930			April, 1930				
	18	25	1	8	15	22	1	8	15	22	29	5	12	19
Algeria:														
Algiers.....			4	1	1							2	2	1
Constantine.....														
Oran.....			4	1	1							1		





Location and Great Towns	448	788	790	298	299	281	283	245	319	292	297	323	268	350	352
London and Great Towns	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1
Newcastle-on-Tyne	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stoke-up-Trent	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Greece: Patras	9	1	12	2	6	3	3	2	10	20	9	18	23	40	41
India:															
Bombay	7	6	11	11	0,461	7,562	7,738	9,100	9,061	8,084	.....	.....	.....	.....	.....
Calcutta	3,387	7,644	12,789	4,765	1,389	1,781	1,941	1,922	2,068	1,762	.....	.....	.....	.....	.....
Cochin	12	42	3,119	88	74	86	97	112	112	188	238	187	.....	.....	.....
Karachi	8	14	37	33	25	50	66	57	74	95	117	123	114	.....	.....
Madras	6	54	88	41	55	54	66	73	73	73	160	106	156	100	.....
Moulmein	4	39	62	28	40	34	63	52	66	66	116	77	128	90	.....
Nagapatam	94	387	284	68	61	58	57	62	17	31	74	87	71	72	61
Rangoon	1	72	20	6	5	11	6	8	5	8	8	14	11	3	7
Tuticorin	7	7	7	7	6	11	6	5	11	6	22	14	13	12	8
Viragapatam	2	11	2	3	2	3	2	4	4	.....	.....	.....	.....	.....	.....
India (French):	53	64	31	10	22	34	39	39	47	25	48	38	53	43	39
Chanderdagoor	1	11	16	3	4	6	6	6	6	12	8	8	9	12	7
Karikal	3	6	18	3	13	13	29	37	51	51	29	39	43	40	25
Pondicherry Province	10	7	20	4	10	10	10	10	7	11	12	15	9	8	9
India (Portuguese)	16	7	19	4	7	6	6	10	10	12	17	11	5	21	16
Indo-China (see also table below):															
Pnompenh	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Saigon and Cholon	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Iran:															
Baghdad	9	20	16	8	1	1	1	2	1	1	1	1	2	1	1
Basra	3	10	8	1	1	1	1	1	1	1	1	1	1	1	1
Diyalah Liwa	68	46	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kirkuk Liwa	38	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mossoul	90	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	26	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	162	48	60	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	190	17	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

16 cases of smallpox were reported Apr. 14 in Costa Rica outside of city of San Jose.

**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

**SMALLPOX—Continued**

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

Place	Oct. 20, Nov. 16, 1929	Nov. 17, Dec. 18, 1929	Dec. 15, 1929- Jan. 11, 1930	Week ended—													
				January, 1930			February, 1930			March, 1930			April, 1930				
				18	25	1	8	15	22	1	8	15	22	29	5	12	19
Ivory Coast (see table below).																	
Macao																	
Mexico (see also table below):																	
Aguascalientes																	
Coahuila	1	1	6	9	2	3	4	1	3	6	4	3	7	5	7	6	4
Jalisco (State): Guadaluajara	1	6	11	3	2	3	2	1	3	8	1	2	3	1	2		
Juarez	6	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Mexico City and surrounding territory <sup>1</sup>	9	19	25	10	9	9	2	16	13	9	26	18	3	9			
Morelos State: <sup>2</sup>	4	9	4	1	3	1	2	5	2	14	3	9					
San Luis Potosi										1	1						
Morocco (see table below).																	
Netherlands: Rotterdam	18	5	1														
Nigeria: Lagos	1	1	2	1	1	1	2										
Panama (see table below).																	
Philippine Islands: Sarangani and Palut Islands <sup>1</sup>																	
Poland	2	4	2	40	18												
Portugal:																	
Lisbon	2	3	6														
Oporto	1	1															
Rumania																	
Slam	7	3	42														
Somalland, British: Beales	2	1	9														
Strats Settlements	25	24	5	2	14	5	12	7									
Sudan (Anglo-Egyptian)	16	9	9	1	1	1	5	2	2	2	3	1	2	3	1	1	1
Sudan (French) (see table below).	91	254	290	14	21	171	24	19	1	59	8	22	25	3	2	9	
Syria (see table below).	12	45	65	1	8	20	5	2		4							







