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THE ALABAMA SYSTEM OF NOTIFIABLE DISEASE REPORTS


By KENNETH F. MAXCY, Assistant Surgeon, United States Public Health Service.

Standardization in public health work, while desirable, is often impracticable; the method used must be one which produces a maximum result in a given situation. This is also true in the matter of the reporting of communicable diseases. A report card designed for a thickly settled urban population in an eastern State would not necessarily be adaptable to a rural State like Alabama, where organized health work is comparatively new.

1. THE OLD SYSTEM.

Up to the end of 1922 the communicable disease report card used in Alabama was the rather complex one shown in Card A.

(Card A.)

DISEASES NOTIFIABLE IN ALABAMA.	FORM 3.
<p>Group A. Infectious diseases, viz., actinomycosis, anthrax, chancre, chicken pox, cholera (Asiatic, also cholera nostras when Asiatic cholera is present or its importation threatened), continued fever lasting seven days, dengue, diphtheria, dysentery (amebic), dysentery (bacillary), favus, German measles, glanders, gonorrhoea, hookworm disease, leprosy, malaria, measles, meningitis (epidemic cerebrospinal), meningitis (tuberculous), mumps, ophthalmia neonatorum (conjunctivitis of newborn infants), paragonimiasis (endemic hemoptysis), paratyphoid fever, plague, pneumonia (acute), poliomyelitis (acute infectious), rabies, Rocky Mountain spotted or tick fever, scarlet fever, septic sore throat, smallpox, syphilis, tetanus, trachoma, trichinosis, tuberculosis (all forms, the organ or part affected in each case to be specified), typhoid fever, typhus fever, whooping cough, yellow fever, epidemic influenza, and lethargic encephalitis.</p>	<p>TREASURY DEPARTMENT U. S. PUBLIC HEALTH SERVICE OFFICIAL BUSINESS</p>
<p>Group B. Occupational diseases and injuries, viz., arsenic poisoning, brass poisoning, carbon monoxide poisoning, lead poisoning, mercury poisoning, natural-gas poisoning, phosphorus poisoning, wood-alcohol poisoning, naphtha poisoning, bisulphide of carbon poisoning, dinitrobenzene poisoning, caisson disease (compressed-air illness), any other disease or disability of the nature of the person's employment.</p>	
<p>Group C. Diseases of unknown origin, viz., pellagra, cancer.</p>	COLLABORATING EPIDEMIOLOGIST,
<p>Group D. Such other diseases as the State board of health may from time to time, in its discretion, declare to be notifiable diseases.</p>	<p>United States Public Health Service, Care of State Board of Health, Montgomery, Ala.</p>

(Reverse side.)

File No. _____ (County) _____ (Date) _____, 192____

Name of disease _____

Name of sick person _____

Name of householder where patient is ill _____

Location of this residence _____

Post office _____ Beat or ward _____

Patient's age _____ Color _____ Sex _____

Date of onset _____ Date of first visit _____

School attended or place of employment _____

Number in household: Adults _____ Children _____

Probable source of infection _____ S _____ M _____ W _____
(Marital relation.)

REMARKS.

If typhoid fever or smallpox, note previous vaccination.

If typhoid fever, scarlet fever, diphtheria, or septic sore throat, note whether the patient or other member of the household is engaged in handling of food for others _____

(Signature of Physician) _____

(Post Office) _____

REQUEST: Report Cards

Each physician was supposed to be supplied with cards of this sort and was expected to fill out and mail one for each case of communicable disease which he had in his practice. The returns were not satisfactory. Some of the reasons were obvious. For example:

The list of reportable diseases was too extensive.

The card was too complex—too many items of information were required.

The physician was likely to fail in keeping up his supply of blank cards or to be unable to find one when he desired to make a report, or, with the best of intention, he would postpone making the report until he forgot it altogether.

2. THE NEW SYSTEM.

To meet these objections and to introduce certain other desirable features into the system of reporting, a new card was devised. (Cards B and C.) This new system of reporting is a modification of one devised and used with notable success by Asso. San. Engineer Leslie C. Frank,¹ officer in charge of the Mississippi Coastal District Extra-

¹ A report dated May 31, 1919, submitted to the Surgeon General by Assoc. San. Engineer Leslie C. Frank contains the following description of a system of morbidity reporting adopted by him for the Mississippi Coastal District Extracantonment Zone:

"In the Mississippi Coastal District a system of morbidity reporting has been worked out which requires each physician to report to the director of sanitation every day, whether he has had cases or not. If he has

cantonment Zone and later director of public health of the city of Dallas, Tex. The daily report card used by him in an urban area has been adapted to a system of weekly reports on a state-wide basis. The essential features of the new system are the following:

(1) The data requested are simple—disease, name, location, race, sex, and age. Six cases may be reported on the same card under one date. The physician does not even have to sign his name; it has already been stamped on the card by the addressograph. Incidentally, the name can be easily read in filing.

(2) The list of reportable diseases has been simplified to emphasize those in which there is particular public-health interest in this State.

(3) One of these cards addressed on the addressograph and inclosed in a window envelope is mailed each week to every practicing physician in the State. He is thus stimulated periodically to recall his cases of notifiable disease and report them on a card placed in his hands for this purpose. The work of reporting has been made as simple as possible.

(4) The return address is printed on the card, and after the physician has filled in his report it is only necessary for him to drop the card in the mail. In those counties where there is a whole-time county health officer (23 of the 67 counties in Alabama, reaching 52 per cent of the population and 59 per cent of the physicians), the cards return to the health officer (assistant collaborating epidemiologist) (Card B) for his record and are then forwarded by him to the State collaborating epidemiologist at the close of business on Saturday of each week. Where there is no county health officer, the card returns directly to the State collaborating epidemiologist (Card C). The complete return thus reaches Montgomery between Saturday and Tuesday. On Tuesday, after the reports have been tabulated, telegraphic report is made to the Surgeon General of the United States Public Health Service in Washington.

(5) In this system of weekly reports, in order to obviate delay in the notification of those communicable diseases requiring immediate action, in those counties where there is a whole-time health officer the physician is requested to report to the health officer by phone and let the written report follow at the usual time.

had no cases, he mails the report card blank * * *. Under this system the health department will know with absolute assurance whether a given physician has on a given day had no cases of reportable diseases or has forgotten to report."

In the report of the Department of Health of the city of Dallas, Texas, for 1919-1920, Mr. Frank states that as a result of applying this system, "the health administration is now three times as well informed as it formerly was as to the incidence and location of cases * * *."

(Card B.)

NOTIFIABLE DISEASES

Please notify by phone and make written report on this card of: Chicken Pox, Dengue, Diphtheria, Epidemic Meningitis, Measles, Infantile Paralysis, Scarlet Fever, Smallpox, Typhoid and Paratyphoid fevers. Any rare or unusual disease which is of importance to the public.

Please make written report on this card (immediate notification unnecessary) of: Dysentery, Gonorrhea, Epidemic influenza, Pneumonia, Malaria, Pellagra, Syphilis, Tuberculosis (all forms), Whooping Cough, Lethargic Encephalitis.

TREASURY DEPARTMENT
U. S. Public Health Service
OFFICIAL BUSINESS
Penalty for Private Use, \$300

ASST. COLLABORATING EPIDEMIOLOGIST,
Houston County Health Unit,
Dothan, Ala.

(Reverse side.)

Disease	Name of Patient or Case No.	Address—P. O. or Street	Race	Sex	Age
<p>DR. I. C. BATES, DOTHAN, ALA. HOUSTON CO.</p>					
<p>Date.....</p>					

Please list above your cases of reportable diseases for the past week. Mail immediately. If you have had none, please return card just the same.

(The size of the cards is 6 by 3½ inches, and they are shown here practically in their true proportions.)

(Card C.)

NOTIFIABLE DISEASES

Dengue, Diphtheria, Dysentery, Malaria, Pellagra, Scarlet Fever, Smallpox, Typhoid, and Paratyphoid, Tuberculosis (all forms), Gonorrhea, Measles, Meningitis (Epidemic Cerebrospinal), Ophthalmia, Neonatorum, Pertussis (Acute), Poliomyelitis (Acute), Rabies, Syphilis, Tetanus, Trachoma, Whooping Cough, Epidemic Influenza, and Lethargic Encephalitis, and any rare or unusual disease which is of importance to the public.

TREASURY DEPARTMENT
U. S. Public Health Service
OFFICIAL BUSINESS
Penalty for Private Use, \$300

COLLABORATING EPIDEMIOLOGIST

U. S. Public Health Service

Care of State Board of Health

Montgomery, Ala.

(Reverse side.)

Disease	Name of Patient or Case No.	Address—P. O. or Street	Race	Sex	Age
.....					
.....					
.....					
.....					
.....					
.....					
.....					

Date.....

DR. J. W. ROBERTS
GARLAND R. F. D
CONECUH CO. ALA.

Please list above your cases of reportable diseases for the past week. Mail immediately. If you have had none, please return card just the same.

(6) Each physician is asked to return the card whether he has any cases to report or not—the blank card indicating that he has no cases to report—otherwise there would be doubt as to whether there were no cases or he had simply neglected to report. This procedure makes it possible to gauge a little more accurately the completeness of the returns—per cent of physicians reporting regularly, an item of information which is extremely valuable.

(7) After the data have been tabulated in the bureau of epidemiology of the State Board of Health the cards are filed in that bureau alphabetically by name of county and physician. There is a guide card for every physician who is in active practice in each county. The file shows immediately who are the delinquent physicians. The completeness of the returns can be easily estimated, at the end of each month, and the delinquents stimulated to report.

3. RESULTS.

With the inauguration of a new system of reporting in 1923 the increased number of case reports is significant. With a stationary or declining death rate, reports of typhoid fever increased about 55 per cent; of malaria about 500 per cent; of tuberculosis about 120 per cent.² The greater increase in reports of the epidemic diseases—measles, and influenza and pneumonia—is not to be explained entirely by increased prevalence for that year.

TABLE 1.—*Comparison of notifiable-disease reports under old and new system of reporting in Alabama.*

Disease.	Number of cases reported.		
	Old system.		New system.
	1921	1922	1923
Typhoid fever.....	1,372	1,132	1,939
Malaria.....	797	1,405	6,850
Smallpox.....	2,196	630	323
Measles.....	687	185	19,726
Scarlet fever.....	738	534	797
Diphtheria.....	1,480	1,317	1,590
Influenza.....	152	2,685	12,111
Chicken pox.....	806	958	1,227
Tuberculosis.....	808	757	1,782
Pneumonia.....	282	358	3,383
Mumps.....	468	138	261
Pellagra.....	a 1,320	192	536
Poliomyelitis.....	3	33	21

^a Special investigation.

In 1921 and 1922 there is no figure available to indicate the percentage of physicians reporting. On the basis of the standards used in 1923 it was estimated that 70 per cent of the physicians in the organ-

² Percentages computed on the increase in 1923 over the average for the years 1921 and 1922.

ized (whole-time) counties reported with reasonable regularity, and 53 per cent of the physicians in the unorganized counties, or approximately 63 per cent for the State.

That this estimate of the completeness of reports is a reasonable one is indicated by comparing case reports with death reports. There were 357 deaths from typhoid fever in 1923. With a 10 per cent case fatality this would mean that about 3,570 cases had occurred. Actually, 1,939, or 54 per cent, of this estimated number were reported. About 200 deaths from diphtheria were recorded. Using a case fatality rate of 8 per cent, there should be about 2,500 cases of diphtheria annually. Physicians reported 1,590 cases, or 64 per cent of the number estimated on the basis of deaths.

4. DISCUSSION.

Although there is legal compulsion to report communicable diseases, no prosecutions have been brought. Reporting rests entirely on voluntary cooperation. It is the policy of the public health organization to work through and with the physicians of the State. Direct service is rendered, particularly through a system of State laboratories, which is being made as efficient as possible. Laboratory reports are checked against communicable disease reports. Where delinquency is found, the attention of the physician is called to his failure to reciprocate for the service which is being rendered him.

Depending upon the individual physician's conception of civic responsibility as compared with his professional obligation to the individual patient, he may be placed in one of three groups: (a) The cooperative (social-minded) physician; (b) the cooperative but negligent physician; (c) the uncooperative-(antisocial) physician.

It is not to be expected that all physicians will report. It should be possible, however, to secure a constant inflow of information from a representative and known proportion of physicians and to estimate the degree of completeness of the returns in successive months and years in different civil divisions.

Again, all cases of any disease are not seen by physicians. Varying with the disease, there is a certain number of mild, unrecognized or "missed," unattended, and unreported cases. The *proportion* of cases which is attended, recognized, and reported by physicians should become more or less constant from year to year for any particular disease.

Theoretically, then, the inevitable incompleteness of morbidity returns should be recognized. The data furnished by physicians' reports should be regarded as a sample, the size of which varies with the proportion of physicians reporting regularly and the disease under consideration, but should be made as large as practicable. On this sample may be based studies of the more important

epidemiological distributions of the disease, i. e., as regards time, space, age, race, and the trend.

Notification of individual cases by name and address indicates to the health officer that the disease is present in a locality. Field investigation is necessary to establish the exact degree of prevalence or to obtain more extensive epidemiological data.

CONCLUSION.

The new system of notification has increased the value of morbidity statistics in Alabama very materially.

SAFEGUARDING THE SANITARY QUALITY OF DRINKING AND CULINARY WATER SUPPLIED ON INTERSTATE CARRIERS.¹

By E. C. SULLIVAN, Assistant Sanitary Engineer, United States Public Health Service.

The authority for the supervision of the water supplies used for drinking and culinary purposes by interstate carriers as exercised by the United States Public Health Service is based upon the quarantine laws of the United States, enacted by Congress in the acts of March 27, 1890, February 15, 1893, and June 19, 1906. The particular act of Congress which is most directly responsible for the promulgation of the Interstate Quarantine Regulations and the supervision of water supplies is the act of February 15, 1893. This act, which is entitled "An Act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service" provides, in part, in section 3 that the Secretary of the Treasury shall, if in his judgment it is necessary and proper, make such additional rules and regulations supplementary to State and municipal regulations as are necessary to prevent the introduction of contagious and infectious diseases into the United States from foreign countries, or into one State or territory or the District of Columbia from another State or territory or the District of Columbia.

Based upon these acts of Congress, interstate quarantine regulations of the United States have been promulgated from time to time, the present regulations having been promulgated by the Secretary of the Treasury on May 3, 1921. Section 19 of these regulations provides for the supervision of drinking and culinary water as follows:

SECTION 19. Water provided by a person, firm, company, or corporation for drinking or culinary purposes on any car, vessel, or other conveyance while engaged in interstate traffic shall be from a source which is approved by the Surgeon General of the United States Public Health Service as producing water of satisfactory sanitary quality and safety.

¹ Address made at the joint meeting of the municipal section of the Providence Engineering Society and the local section of the American Society of Civil Engineers, in Providence, R. I., Feb. 20, 1924.

(a) Certificates for water supplies used for the aforesaid purposes shall be procured from the United States Public Health Service and filed by the common carrier, whether person, firm, company, or corporation, whenever the Surgeon General of the United States Public Health Service may direct, but not less often than semiannually, in March and September: *Provided*, That where such water supplies are under the adequate supervision of the respective State departments of health, certificates may be required but once annually, with the approval of the Surgeon General of the United States Public Health Service.

(b) Certificates concerning the safety and sanitary quality of such water shall be based upon its relative freedom from contamination, or exposure to contamination, by microorganisms and substances recognized as harmful or deleterious to the consumer's health or liable to spread infectious or contagious disease, as determined through a survey of the sanitary conditions under which the supply is produced and the results of bacteriological and chemical analysis of samples of the water. In making such determinations, survey and laboratory methods which are acceptable to the Surgeon General of the United States Public Health Service shall be followed.

(c) Certificates for water supplies may be prepared by the respective State departments of health having jurisdiction over the sources of supply or by officers of the United States Public Health Service, and are to be forwarded to the Surgeon General of the United States Public Health Service for approval.

(d) Common carriers, whether persons, firms, companies, or corporations, providing water from approved supplies shall cause such water to be handled from the source of supply to the delivery to consumers in such manner that the safety or sanitary quality of such water shall not be impaired. Water cooled for drinking purposes shall be cooled in such manner that ice can not come into contact with such water.

(e) Water coolers and containers shall be cleansed at least once in each week while in use. The storage tanks for water for drinking and culinary purposes shall be drained and flushed regularly. Scrubbing of the interior of storage tanks on vessels, or the entrance into them for purposes other than repairing, is forbidden.

(f) Certificates of inspection covering the methods of obtaining, purifying, and distributing water supplies for drinking and culinary purposes on vessels shall be procured from the United States Public Health Service and filed by the common carrier whenever the Surgeon General of the United States Public Health Service may direct, but in any case not less often than once a year.

(g) Portable hose or tubing that is used for filling drinking-water containers, or storage tanks from which such containers are filled, shall have metal nozzles with a smooth surface, which shall be protected from dirt and contamination, and before the free end or nozzle of said hose or tubing is put into the water container or storage tank it shall be flushed and washed by a plentiful stream of water.

(h) The provisions of this section shall also apply to vessels plying between foreign ports on or near the frontiers of the United States and adjacent ports in the United States.

Administratively, the work of supervising the quality of the water provided for drinking and culinary purposes on interstate carriers is divided into the following subdivisions:

(1) The annual or semiannual issuance of certificates of inspection to the various railroad and vessel companies, giving approval or disapproval to the use of the water from the various sources of supply used for drinking and culinary purposes on cars or vessels.

These certificates are issued in accordance with the recommendations of the State health officers of the various States, based upon the findings of the field surveys made by the sanitary engineers attached to the State health departments and upon the results of bacteriological analyses of samples of the water in question.

(2) The making of sanitary surveys of railroad coach and terminal yards and investigations of the methods employed in supplying water to the coaches, and the recommending of improvements when necessary. This work is done mainly by the sanitary engineers of the Public Health Service and is based in part on other sections of the Interstate Quarantine Regulations.

(3) The annual inspection of the sanitary conditions on all passenger vessels operating in interstate traffic, particularly with respect to having the sanitary system for the supplying of water for drinking and culinary purposes. Inspections are also made of as many freight vessels as possible. This work is done to a great extent by the sanitary engineers of the Public Health Service, but a certain amount of cooperation is obtained from the United States steamboat inspectors and other local agencies. In some instances, particularly in the cases of the cities located on the Great Lakes and inland rivers, the cooperation of the local health departments has been enlisted in the collection and analysis of water samples obtained from the vessels. New York City also cooperates in making sanitary inspection of local excursion vessels. The Canadian Government cooperates in the Great Lakes region through similar regulations and reciprocal exchange of information based upon inspections. Certificates may be issued for American vessels by American authorities based on Canadian inspections and vice versa.

With respect to the cooperative work of the State health departments with the Public Health Service in the certification of the various sources of supply used by the vessels and railroad companies, it is interesting to outline the inception of the present policies. Originally, the railroad companies (as at that time the certification work did not extend to vessel companies) were required to submit to the Public Health Service certificates which they themselves obtained locally certifying as to the sanitary quality of the water. They usually obtained these certificates from the local health officer or some private laboratory. Experience showed that such certificates were, sometimes, unreliable and could not be depended upon owing particularly to the fact that those providing the certificates were not always qualified to judge the sanitary quality and safety of water supplies. The next step was an attempt by the Public Health Service itself to make most of the surveys for the railroads, with a small degree of cooperation with the State health departments; but this was a task of great magnitude, and confusion and complica-

tions ensued. The complicated situation arose particularly as the result of frequent conflict between Federal and State views and recommendations relative to various supplies.

In 1917-18 the procedure resolved itself into the present policy whereby the active field work is done by the State health departments, the Public Health Service acting upon their recommendations. This is a logical procedure. It does away with the setting up of large Federal machinery to do work which can better be done by the States themselves, since they are in closer touch with local conditions and since the problem of safe water supplies is more their own problem than a National problem; for very often the supplies used by the railroads are public or semipublic supplies and are used to a far greater extent by local citizens than by persons traveling interstate—a total of about 72 per cent of the interstate carrier supplies being used locally.

The active work of the representatives of the Public Health Service in connection with the certification of the sources of supply has been that of liaison agents with the State departments of health for the purpose of unifying and coordinating their work by the maintenance of a uniform policy and procedure. One of the aims of the Public Health Service has been to bring about the establishment of sanitary engineering divisions in States in which they have been lacking, and in strengthening the sanitary engineering divisions in the States where they have been weak. In order to achieve these purposes, sanitary engineers of the Public Health Service have been detailed to a number of States at one time or another during the past six years to demonstrate the value of having a sanitary engineering division in the State health department, not only for a proper supervision of the water supplies of the State but for a proper handling of other important sanitary engineering problems. The sanitary engineers of the Public Health Service have also been detailed for short periods of time (from one to six months) to certain States to make cooperative surveys of water supplies and to place the certification procedure upon a sounder foundation. Largely through the efforts of the Public Health Service and sometimes through its financial assistance, sanitary engineering divisions have been established in 14 additional State health departments since 1918.

It has also been the policy of the Public Health Service to assist the sanitary engineering divisions of the States having limited funds, by appointing the State sanitary engineer or some other properly trained official as a collaborating sanitary engineer in the Public Health Service at a nominal salary and paying his travel expenses when engaged in making field surveys in connection with the certification work. Twenty-eight States were availing themselves of this financial aid at the close of the fiscal year 1923. It might be

well to make mention here that it is required that a field survey showing the actual physical conditions existing be made before a certificate is issued. In order to assist in having a uniform certification procedure and also that the State sanitary engineers might be brought together to discuss problems of mutual interest, the Public Health Service has been instrumental in having formed a conference of State sanitary engineers which has been meeting annually for the past several years.

In order to give some idea of the scope and magnitude of the work of certification of water supplies in safeguarding their use for human consumption, it is worth while to quote some statistics. During the fiscal year ending June 30, 1923, the railroad companies requested certification for a total of 3,129 supplies—1,985 of which were public supplies, 384 privately owned supplies, and 760 railroad owned supplies. Of these 3,129 supplies, 1,541 were certified as being of satisfactory sanitary quality, 78 were certified as being polluted and the use was prohibited, 57 were provisionally certified, and action was pending for 1,453 other supplies. These figures represent a percentage certification of 54 per cent. For the vessel companies, certification was requested for 303 supplies—260 public, 37 private, and 6 vessel-company owned. Of these supplies 80 were certified as satisfactory, 1 as polluted, 2 were certified provisionally, and action was pending for 220 supplies—representing a percentage certification of 27 per cent. The explanation of the lower percentage certification for the vessel companies lies in part in the fact that this work was extended only two years ago to include vessel companies, and State health department facilities are not sufficient as yet to embrace all the work. The majority of the vessel companies, however, obtain their water from the municipal supplies of large cities, and the certificates themselves are not such important factors as in the case of the railroads, which often obtain their water in isolated localities that do not have the great degree of supervision that is exercised over the seaport municipal supplies.

To sum up briefly this portion of the subject, it has been the aim of the Public Health Service to aid and strengthen the State departments of health in this branch of sanitary engineering rather than to set up a Federal organization for the purpose. The general effect of the whole certification procedure and the strengthening of the position of the State sanitary engineering divisions which has resulted have played no small part in contributing to the reductions of the typhoid fever rates during the past decade. The certification procedure has served as a lever in the hands of many State health departments whereby they are able to have their recommendations more fully observed. The influence of the railroads and the effect which an unfavorable certification has had upon the citizens of

a town who see the drinking-water taps in the railroad station posted as being dangerous for use by placards of a Federal agency which they recognize as having no ulterior motive in so doing, have naturally aided the State health department. This has been particularly the case in some of the western and southern States in which the State health departments have had little legislative authority to supervise and make recommendations for the public water supplies of their States. As a Federal agent, however, they have been able to do this in cases in which their own power and authority were lacking.

The second subdivision of the work of the Public Health Service in safeguarding the quality of drinking and culinary water supplied by interstate carriers is the supervision of the actual methods employed by the railroads in the delivery of water to the coaches and in the cleansing of the water coolers. This work involves inspections of the railroad coach yards and investigations of the methods employed and the making of recommendations for improvements to the proper railroad officials. Most of this work is done by the sanitary engineers of the Public Health Service, although in some cases, representatives of the State health departments assist in the work. In order properly to carry out this work as well as the work of vessel supervision (which will be described later), and for the purpose of facilitating general cooperative work with the State health departments, the United States has been divided into 7 interstate sanitary districts with one or two sanitary engineers attached to each district.

The handling of the water from the time it leaves the yard hydrant or tap up to the time that it reaches the lips of the consumer, is the danger spot in safeguarding the quality. The adage of "many a slip 'twixt cup and lip" is particularly applicable here. Railroad coach yards are not always the cleanest of places, even under the best conditions. They are primarily intended to be places where the coaches are to be cleaned. In spite of the best efforts of railroad authorities, the supplying of pure drinking and culinary water is a secondary consideration in the mind of many railroad yard employees, who fail to realize the sanitary significance of many acts. It is a case involving the human element again. It is, therefore, one of the purposes of the district engineers of the Public Health Service to make thorough investigations of the railroad coach yards of the larger cities as often as possible, as a rule about once each year.

Some of the points to which particular attention is paid are as follows: Examination of the coolers in the coaches to ascertain whether they have been properly cleansed; checking over the record cards attached to the coolers to make sure that they are being maintained; inspection of the general cleanliness of the cars; observation

of the methods employed in the cleansing and steaming of the coolers and the facilities for the same; observation of methods employed in the handling of the water and ice to see whether proper provisions are made for protecting the ends of the filling hose and buckets from contamination. Care is also taken to make sure that the coolers are properly iced, to see that the ice is placed in the proper compartment and is not heaped so high that the melted ice overflows or runs down into the water compartment. Other features considered are the general condition of the yards, the toilet facilities for the employees, and making certain that the coach toilets are not being used by the yard employees.

As provided in the interstate quarantine regulations, the drinking water and the ice for cooling are required to be kept in separate compartments in the coach water coolers. However, owing to the time and expense involved, the railroads were given until July 1, 1924, to fully comply with this requirement. At the present time the railroads have already complied to an extent of about 80 per cent of their equipment, but all of the equipment must be changed over before July 1, 1924, since no further extensions of time are to be granted. The present arrangement is to install a remodeled or new cooler whenever a car goes into the shops for repairs.

Concerning the types of coolers, those are best which are designed so as to have separate places for admitting the ice and water, thus avoiding the possibility of placing the ice in the wrong compartment. The ideal design of cooler is illustrated by the type installed in the recently built Pullman cars. In these cars the water is stored in tanks beneath the cars and is distributed by air pressure to taps. In the drinking-water cooler, which is supplied directly from these tanks, the water passes through a coil of pipe surrounded by ice, and is thereby cooled without coming in contact with the ice.

Close cooperation exists between the Public Health Service and the American Railway Association, particularly with the medical and surgical section. As a result the medical and surgical section practically formulate the rules and regulations for the sanitary requirements, and the Public Health Service acts as a sort of official sanitary advisor. An illustration of this cooperation is found in the Standard Railway Sanitary Code. The Railway Sanitary Code is a compilation of sanitary rules and regulations drawn up principally by the railroad medical officials themselves for the purpose of having uniform State laws relative to railroad sanitation. The provisions of the Railroad Sanitary Code are in accord with the requirements of the Interstate Quarantine Regulations and have been approved by the Conference of State and Provincial Health Officers and recommended to the several States for adoption. Many of the States have

accepted the Railway Sanitary Code and incorporated it in their own health regulations or sanitary code.

Other illustrations of the degree of interest shown by the American Railway Association in the subject of water supplies is to be found in the various reports of subcommittees of the Joint Committee on Drinking Water Supplies which outline features of coach-yard construction, care of hose, tanks and coolers, handling of ice, etc.

The third division of the Public Health Service work of safeguarding water supplies used in interstate traffic is the sanitary supervision of the water-supply systems on vessels. The pioneer work of the Public Health Service in this matter began in the Great Lakes region through investigations of outbreaks of typhoid fever involving Great Lakes vessels during the period of 1908-1912. It was clearly shown that contaminated drinking water supplies on lake carriers were the cause of a marked increase in the typhoid fever rates among Great Lakes sailors as compared with seamen on ocean carriers. In 1914 the provisions of the Interstate Quarantine Regulations were enlarged to include requirements for the water supplied to vessels from overboard, and, in 1917, special requirements for the Great Lakes were promulgated in Treasury Department Circular No. 72, which is as follows:

To Owners, Agents, and Masters of Vessels Operating on the Great Lakes:

On and after the official opening of navigation in 1917, any person, firm, or corporation operating vessels in interstate traffic on the Great Lakes will be required to furnish on such vessels water for drinking or culinary purposes under one of the following conditions:

(a) If water for drinking or culinary purposes is not obtained ashore, it must be treated by an approved method.

(b) If water for drinking or culinary purposes is obtained ashore, it must be from an approved source.

On and after the official opening of navigation in 1917, the piping system on all vessels must be so arranged that no connection can be made between the drinking water system and any other water system.

On and after the official opening of navigation in 1917, an approved sign, reading "Do Not Drink This Water," must be properly placed at every tap or other outlet not connected with the drinking water system.

Lake carriers are requested to acknowledge the receipt of this letter.

W. G. McADOO,
Secretary.

The marked decrease in water-borne illness, particularly typhoid fever, among seamen hospitalized in the Great Lakes region demonstrated the value of these sanitary requirements, and in a somewhat similar circular promulgated in March 1921, these special requirements were extended to all vessels operating in "interstate traffic or between foreign ports on or near the frontiers of the United States and adjacent ports in the United States."

The work of the Public Health Service in vessel water-supply supervision has three main branches, involving respectively the supervision of water supplies on coastal vessels, on Great Lakes vessels, and on inland river vessels. Each of these branches involves work of a somewhat different nature.

Practically without exception coastal interstate carriers obtain their drinking and culinary water supplies from certified sources ashore; and the problems to be dealt with, therefore, are mainly concerned with the transportation of the water to the vessel and the proper storage and distribution on the vessel itself. The problem of the transportation of the water to the vessel is a comparatively easy one when proper facilities exist at the docks for delivery of water to the vessel by means of a hose. In instances where such facilities do not exist on the docks, or in cases where a vessel in stream requires water, it is necessary to use a waterboat as a means for transportation. A waterboat is usually a barge or tug fitted up to carry large quantities of water and with sufficient pumping capacity to deliver the water to another vessel in a relatively short period of time. It has been the purpose of the Public Health Service to have the pumps and piping systems on the water boats arranged so that they can draw water only from the tanks and not from the sea-cocks or bilges, as had previously been the case, and also to have them comply with the various other sanitary requirements for vessels.

With respect to the control of sanitary conditions relative to the drinking and culinary water supplies on the coastal interstate carriers themselves, the main consideration is a proper arrangement of the tanks and piping systems. As a result of the inspections of the passenger vessels, many changes have been made, such as locking down the manholes to the tanks, providing drain valves to tanks, the elimination of toilet discharge lines passing through tanks, providing special filling lines to tanks when such have been necessary, the breaking of sea-water or impure boiler-feed water tank connections to the drinking and culinary water tanks, the elimination of sea, bilge, or ballast pump connections to and from the drinking and culinary water tanks, providing special pumps for the delivery of the drinking and culinary water tanks about the vessel, the elimination of all cross connections between drinking and culinary tanks and lines and other impure water systems (such as are sometimes found at shower baths, for example), the posting of taps supplying water from impure sources of supply with signs warning that the water is not suitable for drinking and culinary use, and the elimination of common cups used by the crew by the installation of bubbler taps and the separation of drinking water and the ice used for cooling. It has been very fortunate that the number of above enumerated conditions which have been found per vessel has been

small, thereby rendering the necessary changes comparatively inexpensive. In many cases the changes have involved mainly the removal of a short length of pipe to break some undesirable cross connection. It should be explained that the Public Health Service, while prohibiting cross connections between the drinking and culinary water supply system and other sources of supply, does permit an emergency cross connection to be kept on hand to be slipped into place for use while an emergency lasts, but to be removed immediately upon the conclusion of the emergency.

The problems of the control of water supplies on Great Lakes vessels differ mainly from those of coastwise vessels through the fact that the majority of the vessels obtain their drinking and culinary water from overboard sources of supply and the vessels must therefore be equipped with treatment apparatus. The danger resulting from cross connections between the treated water lines and untreated water lines aboard the vessel is greatly enhanced in the case of Great Lakes vessels through the fact that such connections can more readily pollute the treated water undetected than can be done in the case of salt water cross connections on coastwise vessels. It has been the experience on Great Lakes vessels that practically every vessel has been found to have one or more such cross connections, very often existing unknown to the officers of the vessel and found only through the thorough inspections of the piping lines by the Public Health Service inspectors or from inspections following the development of typhoid fever cases.

Other features of Great Lakes vessels requiring particular attention are the maintenance of the treatment apparatus in proper operating condition, the elimination of by-passes around the treatment apparatus, many of which were installed during the period of 1918-1920, when the Public Health Service control of Great Lakes vessels was limited because of the exigencies of the war, and the proper posting of overboard water taps with warning signs. Special attention is given to this latter point, since practically all of the vessels, passenger and freight, with the exception of some of the larger, newer passenger vessels, have systems of taps supplying untreated overboard water for ablutionary purposes.

The methods of treating drinking and culinary water on Great Lakes vessels which have given satisfactory service to date are—

- (1) Filtration followed by exposure to rays emitted from a mercury vapor ultra-violet ray lamp;
- (2) Filtration followed by contact with ozone;
- (3) Filtration followed by chlorination; and
- (4) Distillation.

It is the policy of the Public Health Service to give approval to no particular types of apparatus, but to judge solely by the results

which are obtained. If an apparatus works favorably on a vessel, produces a water of satisfactory sanitary quality, is automatic and foolproof in its action, then the vessel will be favorably certified. If it does not do so, the vessel is unfavorably certified, which prohibits the use of that particular type of apparatus. In this connection it should be stated that the essential condition for a treatment apparatus is that it must be arranged so that untreated water will not pass through the treatment apparatus in the event that it breaks down or is not properly operating.

The filtration apparatus which is used in conjunction with the ultra-violet ray apparatus, the ozone apparatus, and the chlorination apparatus usually consists of two vertical 30''-diameter rapid sand pressure filters. They are provided with an alum shunt feed box for adding a coagulant (aluminum sulphate) and should not be operated at a greater rate than 3 gallons per square foot of filtering area per minute. These filters can not be depended upon as a purifying agency as they have a low bacterial efficiency. Their inefficiency is due to a number of causes, including lack of time for sufficient chemical reaction with the coagulant before the water reaches the filters. Another unsatisfactory feature is that water having an increased bacterial count is allowed to pass through the filters immediately after they have been washed, unless care is taken to allow the filtered water to run to waste until sufficient time has elapsed for a "floc" to form. The primary function of these filters on a vessel is to remove the suspended matter from the water prior to passage through the main treatment apparatus.

The ultra-violet ray lamp apparatus is the system which is used mainly upon the Great Lakes passenger vessels, since it has a moderately large capacity, about 750 gallons per hour. The apparatus consists of a cast-iron shell, shaped like a Maltese cross, with a quartz tube through its axis and containing baffle plates so arranged as to spread the water in a thin film while passing through the ultra-violet field. The mercury vapor lamp is placed within the quartz tube. Other auxiliary pieces are a fixed orifice for limiting the flow of water to the capacity of the machine and a solenoid valve with air chamber located in the water intake line to the sterilizer and arranged to close and prohibit the flow of water whenever the voltage drop across the terminals of the mercury vapor lamp becomes too low for adequate sterilization. In addition, there is an automatic control panel with voltmeters, ammeters, relays, and coils for controlling the voltage to the mercury vapor lamp and the operation of the solenoid valve. It is also necessary to provide a motor-generator unit for supplying 220 volts direct-current when the same is not available. Although this apparatus is expensive to install and its upkeep is high, it gives very efficient service when

properly operated. The main disadvantage is that because of the complicated electrical nature of the apparatus some marine engineers are inclined to shirk the proper operation of the apparatus.

The ozone sterilizing apparatus is installed aboard a few Great Lakes passenger vessels. The present installations have been made during the past two years and are reported to be giving generally efficient service. These installations, in addition to the pressure rapid sand filters, have consisted of (1) a time relay operating a valve in the filtered water line and set so as to permit the delivery of filtered water to the sterilizer only when the ozonator is operating and not before it has been in operation for one minute; (2) a transformer unit, stepping direct current from 110 to 12,000 volts; (3) an ozonator with a dielectric system of the grid type, consisting of glass plates 9 by 4 inches on which sheet electrodes are mounted; (4) an aspirator for drawing the "ozonized air" into the water ozone mixers, of which there are 12 units attached to one manifold and discharging directly into a storage tank; and (5) a blower for the preliminary drying of the air drawn into the ozonator. This apparatus is similar to the ultra-violet ray lamp apparatus in that it also is of a somewhat complicated nature.

The use of chlorination apparatus on Great Lakes vessels has been successfully developed only during the past navigating season. A few years ago attempts were made to design apparatus which would function satisfactorily on vessels, but the installations were not successful. The present apparatus is stated to deliver a satisfactory water for drinking and culinary purposes provided that it receives reasonable operating attention. It is said to be very simply constructed. It is not absolutely certain as yet whether it will function satisfactorily under all operating conditions; but should it do so, it will be a valuable apparatus in delivering large quantities of adequately treated water.

The distillation method of purifying water is the type of purification apparatus most commonly found on freight vessels operating on the Great Lakes. The stills usually have a capacity of from 20-30 gallons of distilled water per hour. They supply these vessels with sufficient purified water for drinking and culinary use. They are relatively expensive to operate in the steam consumed, but they give very efficient service with a minimum of attention. The stills consist essentially of (1) a boiling chamber, where heat is applied to the water to be distilled by means of a steam coil; (2) a condensing coil, where the steam from the boiling chamber is condensed; (3) a cooling coil, where the temperature of the condensed steam is lowered. The essential point is that the whole apparatus must be constructed so that there is no possibility of undistilled water passing through the apparatus.

With respect to vessels operating on inland rivers, particularly the Ohio and Mississippi Rivers, the sanitary conditions with respect to the water supplies were particularly chaotic at the time of the extension of the Public Health Service supervision to that region in 1921. The annual reports of the Public Health Service for a number of years previous had contained accounts of epidemics of diarrhea and typhoid fever caused by boats along these rivers. Itinerant excursion boats which changed their headquarters from time to time during the operating season have been known to leave a trail of diarrhea and typhoid fever behind them. For example, in 1912 there was an outbreak among 1,200 passengers on a Mississippi River excursion steamer, of 600 cases of diarrhea and 13 cases of typhoid fever with 5 deaths. Some very strange superstitions have prevailed in that region. It has been a rather common belief among river men that "flowing water will purify itself in a flow of 3 feet." Another superstition among the negro deck hands has been that a lump of coal placed in a barrel of water will purify the water. Fortunately those superstitions have been corrected to a large extent.

Many of the vessels have had several distinct water-supply systems aboard, as the necessity for keeping the draft as light as possible does not enable them to carry sufficiently large quantities of pure water to last through long trips. For this reason some river vessels have as many as four different water systems aboard, as follows: (1) A pure-water system carrying drinking water from city supplies or water that is distilled or otherwise purified aboard; (2) a hot-water system carrying boiled but turbid water from the boilers, suitable for dish-washing, but unfitted for drinking purposes on account of its appearance; (3) an ablutionary water system carrying river water which has been filtered through porous stone or pressure sand filters, thus rendering it clear but unsafe to drink; and (4) a raw-water system supplying river water for feeding boilers, flushing decks, and fighting fires. The main feature of the routine inspections of river vessels has been to bring the conditions into conformation with requirements similar to those outlined for coastal and Great Lakes vessels.

A special feature of the work has been the providing of more adequate facilities for the boats obtaining water from the various city supplies along the rivers. Previously, it had been the custom to obtain the drinking water from a street hydrant in barrels and to truck or roll the barrels down the river-front landing, usually a distance of several hundred feet at least and a vertical drop of 25 to 75 feet, depending upon the height of the bluff and the stage or level of the river. A more sanitary arrangement had not been provided because the rise and fall of water stages in the river had not permitted

fixed connections to the wharf boat or landing wharf. The Public Health Service engineers detailed to the river work have made a special point of obtaining water connections direct to the wharf boats. The type of connection recommended has consisted of a pipe line down the river landing with a number of hydrants at different stages of the river, so that a flexible connection to the wharf boat may be attached to the proper or nearest hydrant, according to the stage at which the river happens to be at the particular time. Through the efforts of the Public Health Service during the past two years, such pipe lines have been installed at 10 cities along the Mississippi River and at 9 cities along the Ohio River. The cities have been persuaded to install the lines as public-health measures wherever possible, but where that has not been possible the vessel companies have made the installations. Through the installation of these pipe lines the river steamers can now obtain drinking and culinary water by direct hydrant connections with sufficient frequency to do away with the former insanitary practice of having negroes fill barrels of water at street hydrants on the water front.

To illustrate the scope of the work carried on by the Public Health Service in the supervision of water supplies on vessels, it is of interest to quote some of the statistics for the fiscal year ending June 30, 1923. During that year the Public Health Service engineers and inspectors made 1,460 inspections of vessels operating in interstate traffic, 424 of these being inspections of coastal carriers, 485 of Great Lakes carriers, and 551 of inland river vessels. During the same period, 3,915 samples of water were collected from vessels and analyzed, either by the local health departments or Public Health Service laboratories. The majority of these water samples were obtained from Great Lakes or inland river vessels where the local health departments were closely cooperating in this phase of the work.

With respect to the results in increased sanitation achieved by the work of vessel supervision, the diminution of serious outbreaks of water-borne disease involving vessels demonstrate this point. The figures for the number of cases of typhoid fever hospitalized yearly in the Public Health Service hospitals in the Great Lakes region give a relative index of the value of the work in that region. These cases represent only a portion of those occurring, since passenger typhoid fever cases do not come into the marine hospitals, and often sick seamen are treated elsewhere privately; nevertheless they illustrate the value of this work. It is to be regretted that the statistics are not available for the years 1905-1915.

Number of cases of typhoid fever hospitalized yearly in United States Marine hospitals in the Great Lakes region.

Year.	Number of cases admitted to United States Marine hospitals.	Year.	Number of cases admitted to United States Marine hospitals.
1900.....	100	1915.....	60
1901.....	160	1916.....	70
1902.....	139	1917.....	49
1903.....	185	1918.....	39
1904.....	174	1919.....	24
1905.....	128	1920.....	20
		1921.....	13
		1922.....	17

In concluding, it might be stated that in the work of vessel supervision, as in railroad supervision, there exists a considerable degree of cooperation with the marine interests. The Lake Carriers Association, an organization of Great Lakes shipping interests, which includes about 80 per cent of the carriers, has assisted materially in making the work successful, particularly through educational work among the crews of the ships of the companies connected with the Association. The coastal carriers are not so closely allied as the Great Lakes interests, but important cooperation has been obtained from their various organizations. The naval architects and shipbuilding companies have been brought into cooperation with the Public Health Service through review of the plans of new vessels by the Public Health Service and through conferences relative to Public Health Service policies.

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SOME ANTIVACCINATION STATISTICS.

The following note on vaccination statistics and the manner in which they are often used, or, rather, abused, by the antivaccinationists, is taken from The Medical Officer for June 7, 1924:

"A typical example of reckless antivaccination propaganda has recently been exposed by Prof. F. E. Wynne, medical officer of health

of Sheffield. In a letter to the Sheffield Telegraph (May 19, 1924) he writes: 'My attention has been called to a recent letter in the Derbyshire Times, sent by Miss L. Loat, secretary of the National Anti-Vaccination League, in which the following passage occurs: "In the days when the majority of children born were vaccinated, the majority of the smallpox cases were vaccinated cases. At Sheffield in 1886 there were 350 vaccinated cases in children under 10 years of age and 10 of these were in babies under 1 year." The facts are as follows: There was no epidemic of smallpox in Sheffield in 1886, but the figures quoted evidently refer to the outbreak which took place in 1887 and 1888. In that epidemic, of 68,236 vaccinated children under 10 years of age, 353, or 0.5 per cent, were attacked, and 6, or 0.009 per cent, died. Of 2,259 unvaccinated children under 10 years of age, 228, or 10.1 per cent, were attacked, and 100 (exclusive of children aged under one month), or 4.4 per cent died.' Doctor Wynne adds that these figures are quoted from a report of Doctor Barry, who investigated this outbreak on behalf of the local Government board."

DEATHS DURING WEEK ENDED JUNE 21, 1924.

Summary of information received by telegraph from industrial insurance companies for week ended June 21, 1924, and corresponding week of 1923. (From the Weekly Health Index, June 24, 1924, issued by the Bureau of the Census, Department of Commerce.)

	Week ended June 21, 1924.	Corresponding week, 1923.
Policies in force.....	56, 391, 496	52, 544, 646
Number of-death claims.....	9, 646	9, 413
Death claims per 1,000 policies in force, annual rate.....	8. 9	9. 3

Deaths from all causes in certain large cities of the United States during the week ended June 21, 1924, infant mortality, annual death rate, and comparison with corresponding week of 1923. (From the Weekly Health Index, June 24, 1924, issued by the Bureau of the Census, Department of Commerce)

City	Week ended June 21, 1924		Annual death rate per 1,000 corresponding week, 1923	Deaths under 1 year		Infant mortality rate, week ended June 21, 1924 ¹
	Total deaths	Death rate ¹		Week ended June 21, 1924	Corresponding week, 1923	
Total (65 cities).....	6, 191	11. 9	12. 0	754	731	
Akron.....	31			7	2	74
Albany.....	35	15. 4	15. 1	2	4	46
Atlanta.....	89	20. 4	20. 6	8	12	
Baltimore.....	187	12. 4	13. 1	22	23	65
Birmingham.....	72	18. 7	19. 2	7	15	
Boston.....	206	13. 8	13. 2	24	26	67
Bridgeport.....	31			6	7	96
Buffalo.....	127	12. 1	11. 4	17	14	72
Cambridge.....	30	14. 0	13. 1	1	5	17
Camden.....	34	14. 0	7. 1	5	3	82
Chicago.....	617	10. 9	10. 6	86	71	80
Cincinnati.....	113	14. 4	13. 7	11	12	69
Cleveland.....	172	9. 8	9. 9	15	29	38

¹ Annual rate per 1,000 population.

² Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and estimated births for 1923. Cities left blank are not in the registration area for births.

³ Data for 63 cities.

⁴ Deaths for week ended Friday, June 20, 1924.

Deaths from all causes in certain large cities of the United States during the week ended June 21, 1924, infant mortality, annual death rate, and comparison with corresponding week of 1923—Continued.

City	Week ended June 21, 1924		Annual death rate per 1,000 corresponding week, 1923	Deaths under 1 year		Infant mortality rate, week ended June 21, 1924
	Total deaths	Death rate		Week ended June 21, 1924	Corresponding week, 1923	
Columbus.....	64	12.5	11.8	9	7	85
Dallas.....	49	13.6	12.0	9	5	5
Dayton.....	28	8.6	8.8	4	5	67
Denver.....	57			9	9	3
Des Moines.....	31	11.1	13.0	5	3	
Detroit.....	217			39	44	73
Duluth.....	29	10.6	7.8	5	1	109
Eric.....	22			3	2	62
Fall River †.....	27	11.6	12.5	3	2	42
Flint.....	16			5	5	86
Fort Worth.....	33	11.6	6.9	3	0	
Grand Rapids.....	25	8.8	11.8	2	7	31
Houston.....	47			8	14	7
Indianapolis.....	79	11.8	15.7	8	7	59
Jacksonville, Fla.....	34	17.3	16.2	6	2	
Jersey City.....	76	12.7	12.5	8	13	57
Kansas City, Kans.....	24	10.6	9.0	3	2	58
Kansas City, Mo.....	77	11.2	14.4	8	11	
Los Angeles.....	262			27	22	84
Louisville.....	63	12.7	15.4	5	9	47
Lowell.....	24	10.8	14.0	4	4	71
Lynn.....	15	7.5	11.2	4	1	101
Memphis.....	63	19.1	19.9	7	9	
Milwaukee.....	96	10.2	8.3	16	10	76
Minneapolis.....	54	6.7	11.6	6	13	32
Nashville †.....	40	16.9	16.2	4	5	
New Bedford.....	18	7.1	14.8	3	7	47
New Haven.....	33	9.8	10.6	2	5	26
New Orleans.....	139	17.7	16.1	29	14	
New York.....	1,279	11.1	10.5	146	153	59
Bronx Borough.....	156	9.3	8.3	11	11	39
Brooklyn Borough.....	415	9.9	9.6	48	57	51
Manhattan Borough.....	575	13.3	12.4	65	65	66
Queens Borough.....	101	9.5	10.8	18	19	91
Richmond Borough.....	32	12.8	7.8	4	1	73
Newark, N. J.....	88	10.3	12.2	12	18	56
Norfolk.....	32	10.2	17.7	4	5	72
Oakland.....	39	8.2	9.8	4	2	50
Oklahoma.....	23			2		
Omaha.....	51	12.8	14.5	9	8	96
Paterson.....	35	13.0	17.6	2	5	34
Philadelphia.....	460	12.3	11.7	53	35	63
Pittsburgh.....	164	13.7	14.6	30	26	102
Portland, Oreg.....	59	11.1	11.6	4	7	41
Providence.....	78	16.7	13.6	9	13	73
Richmond.....	54	15.3	17.3	16	10	194
Rochester.....	76	12.2		5		39
St. Louis.....	189	12.1	13.2	18	15	
St. Paul.....	58	12.4	9.9	4	3	34
Salt Lake City †.....	31	12.6	9.9	7	3	140
San Antonio.....	63	17.2	20.9	16	8	
San Francisco.....	120	11.4	12.1	9	7	54
Schenectady.....	20	10.4	5.8	1	1	30
Seattle.....	54			5	2	49
Somerville.....	15	7.8	9.5	0	1	0
Spokane.....	26			1	2	22
Springfield, Mass.....	37	13.0	13.4	6	3	101
Syracuse.....	38	10.5	15.0	4	6	50
Tacoma.....	20	10.1	8.2	2	2	48
Toledo.....	70	13.2	10.6	6	3	56
Trenton.....	36	14.5	15.1	0	3	0
Utica.....	19	9.4	7.1	1	1	22
Washington, D. C.....	112	12.0	16.3	14	17	81
Waterbury.....	22			4	4	93
Wilmington, Del.....	30	13.0	12.4	3	6	67
Worcester.....	39	10.4	11.4	4	2	48
Yonkers.....	27	12.8	10.7	4	5	87
Youngstown.....	33	11.1	11.4	8	7	110

† Deaths for week ended Friday, June, 20, 1924.

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 Week Ended June 28, 1924.

ALABAMA.		ARKANSAS—continued.	
	Cases.		Cases.
Cerebrospinal meningitis.....	1	Smallpox.....	9
Chicken pox.....	26	Trachoma.....	1
Diphtheria.....	12	Tuberculosis.....	13
Dysentery.....	263	Typhoid fever.....	6
Influenza.....	13	Whooping cough.....	57
Influenza reported as "devil's grip".....	37		
Malaria.....	80	CALIFORNIA.	
Measles.....	138	Cerebrospinal meningitis—Santa Barbara.....	1
Mumps.....	45	Diphtheria.....	198
Ophthalmia neonatorum.....	1	Influenza.....	1
Pellagra.....	13	Lethargic encephalitis:	
Pneumonia.....	18	Hayward.....	1
Poliomyelitis.....	3	San Joaquin County.....	1
Scarlet fever.....	3	San Mateo.....	1
Smallpox.....	48	Measles.....	221
Trachoma.....	3	Scarlet fever.....	93
Tuberculosis.....	26	Smallpox:	
Typhoid fever.....	20	Long Beach.....	12
Whooping cough.....	22	Los Angeles.....	36
		Los Angeles County.....	39
ARIZONA.		Ontario.....	9
Leprosy.....	1	Scattering.....	26
Measles.....	2	Typhoid fever.....	23
Mumps.....	1		
Tuberculosis.....	5	COLORADO.	
Typhoid fever.....	1	(Exclusive of Denver.)	
		Chicken pox.....	11
ARKANSAS.		Diphtheria.....	10
Chicken pox.....	20	Measles.....	38
Diphtheria.....	3	Rocky Mountain spotted fever.....	1
Hookworm disease.....	5	Scarlet fever.....	6
Influenza.....	7	Smallpox.....	1
Malaria.....	157	Tuberculosis.....	36
Measles.....	36	Typhoid fever.....	3
Mumps.....	23	Whooping cough.....	12
Pellagra.....	15		
Scarlet fever.....	6		

CONNECTICUT.

	Cases.
Cerebrospinal meningitis.....	1
Chicken pox.....	56
Diphtheria.....	30
German measles.....	7
Influenza.....	1
Lethargic encephalitis.....	1
Measles.....	132
Mumps.....	38
Pneumonia (lobar).....	13
Poliomyelitis.....	1
Scarlet fever.....	53
Tetanus.....	1
Tuberculosis (all forms).....	37
Typhoid fever.....	6
Whooping cough.....	18

DELAWARE.

Measles.....	3
Mumps.....	1
Scarlet fever.....	3
Tetanus.....	1
Tuberculosis.....	1
Typhoid fever.....	2
Whooping cough.....	7

FLORIDA.

Diphtheria.....	2
Malaria.....	43
Pneumonia.....	3
Typhoid fever.....	8

GEORGIA.

Chicken pox.....	10
Diphtheria.....	2
Dysentery (bacillary).....	13
Hookworm disease.....	19
Influenza.....	1
Malaria.....	24
Mumps.....	11
Paratyphoid fever.....	1
Pellagra.....	1
Pneumonia.....	10
Scarlet fever.....	5
Smallpox.....	26
Tetanus.....	1
Tuberculosis (pulmonary).....	10
Typhoid fever.....	7
Whooping cough.....	2

ILLINOIS.

Cerebrospinal meningitis—Cook County.....	1
Diphtheria:	
Cook County.....	60
Scattering.....	24
Influenza.....	4
Measles.....	491
Pneumonia.....	135
Scarlet fever:	
Cook County.....	83
Scattering.....	34
Smallpox:	
Lake County.....	18
Scattering.....	23
Tuberculosis.....	314
Typhoid fever.....	12
Whooping cough.....	103

¹ Week ended Friday.

INDIANA.

	Cases.
Chicken pox.....	64
Diphtheria.....	51
Influenza.....	1
Leprosy—Lake County.....	1
Measles.....	158
Mumps.....	3
Pneumonia.....	1
Scarlet fever.....	43
Smallpox.....	108
Tuberculosis.....	23
Typhoid fever.....	12
Whooping cough.....	57

IOWA.

Diphtheria.....	8
Scarlet fever.....	7
Smallpox.....	7
Typhoid fever.....	2

KANSAS.

Cerebrospinal meningitis.....	3
Chicken pox.....	34
Diphtheria.....	15
German measles.....	1
Influenza.....	5
Measles.....	124
Mumps.....	78
Pellagra.....	2
Pneumonia.....	23
Scarlet fever.....	19
Smallpox.....	22
Trachoma.....	1
Tuberculosis.....	85
Typhoid fever.....	10
Whooping cough.....	72

LOUISIANA.

Anthrax.....	3
Diphtheria.....	10
Dysentery (epidemic).....	41
Hookworm disease.....	6
Malaria.....	36
Measles.....	6
Pellagra.....	12
Pneumonia.....	6
Poliomyelitis.....	1
Scarlet fever.....	6
Smallpox.....	1
Tuberculosis.....	22
Typhoid fever.....	14

MAINE.

Chicken pox.....	29
German measles.....	55
Measles.....	48
Mumps.....	28
Pneumonia.....	3
Scarlet fever.....	29
Septic sore throat.....	1
Typhoid fever.....	3
Vincent's angina.....	2
Whooping cough.....	7

MARYLAND.¹

Cerebrospinal meningitis.....	1
Chicken pox.....	67

MARYLAND—continued.		MISSOURI.	
	Cases.		Cases.
Diphtheria	28	Cerebrospinal meningitis	2
Dysentery	1	Chicken pox	17
German measles	7	Diphtheria	26
Influenza	5	Measles	59
Lethargic encephalitis	2	Mumps	48
Malaria	1	Pneumonia	5
Measles	115	Scarlet fever	70
Mumps	14	Small pox	19
Ophthalmia neonatorum	1	Tuberculosis	46
Pneumonia (all forms)	36	Typhoid fever	3
Scarlet fever	36	Whooping cough	21
Septic sore throat	1		
Tetanus	1	NEW JERSEY.	
Tuberculosis	65	Chicken pox	150
Typhoid fever	13	Diphtheria	51
Whooping cough	37	Influenza	2
		Malaria	1
MASSACHUSETTS.		Measles	320
Actinomycosis	1	Pneumonia	64
Cerebrospinal meningitis	7	Poliomyelitis	1
Chicken pox	101	Scarlet fever	99
Conjunctivitis (suppurative)	12	Smallpox	9
Diphtheria	114	Typhoid fever	11
German measles	36	Whooping cough	159
Hookworm disease	2		
Influenza	1	NEW MEXICO.	
Lethargic encephalitis	4	Chicken pox	4
Malaria	1	Diphtheria	7
Measles	350	Malaria	2
Mumps	150	Measles	23
Ophthalmia neonatorum	20	Mumps	2
Pneumonia (lobar)	47	Pneumonia	3
Poliomyelitis	2	Scarlet fever	2
Scarlet fever	185	Tuberculosis	2
Septic sore throat	1	Typhoid fever	3
Smallpox	1		
Trachoma	5	NEW YORK.	
Tuberculosis (all forms)	161	(Exclusive of New York City.)	
Typhoid fever	8	Diphtheria	78
Whooping cough	50	Influenza	1
		Lethargic encephalitis	1
MICHIGAN.		Measles	735
Diphtheria	49	Pneumonia	114
Measles	317	Poliomyelitis	3
Pneumonia	35	Scarlet fever	171
Scarlet fever	101	Smallpox	3
Smallpox	90	Typhoid fever	7
Tuberculosis	67	Whooping cough	177
Typhoid fever	8		
Whooping cough	68	NORTH CAROLINA.	
		Cerebrospinal meningitis	1
MINNESOTA.		Chicken pox	50
Chicken pox	71	Diphtheria	8
Diphtheria	27	German measles	1
Measles	33	Measles	146
Pneumonia	2	Scarlet fever	17
Scarlet fever	100	Smallpox	34
Smallpox	45	Typhoid fever	29
Tetanus	1	Whooping cough	253
Tuberculosis	64		
Typhoid fever	5	NORTH DAKOTA.	
Whooping cough	18	Diphtheria	4
		Measles	16
MISSISSIPPI.		Scarlet fever	1
Diphtheria	3	Smallpox	10
Smallpox	7	Tuberculosis	1
Typhoid fever	21	Whooping cough	24

OREGON.		WASHINGTON—continued.	
	Cases.		Cases.
Chicken pox.....	12	Pneumonia.....	1
Diphtheria:		Poliomyelitis—Tacoma.....	1
Portland.....	9	Scarlet fever.....	32
Scattering.....	3	Smallpox.....	43
Measles.....	32	Tuberculosis.....	48
Mumps.....	3	Typhoid fever.....	2
Pneumonia.....	12	Whooping cough.....	6
Scarlet fever.....	12		
Smallpox.....	19	WEST VIRGINIA.	
Tuberculosis.....	13	Diphtheria.....	5
Typhoid fever.....	1	Scarlet fever.....	10
		Typhoid fever.....	3
SOUTH DAKOTA.		WISCONSIN.	
Diphtheria.....	2	Milwaukee:	
Measles.....	19	Chicken pox.....	69
Scarlet fever.....	15	Diphtheria.....	9
Smallpox.....	1	Measles.....	41
Tuberculosis.....	12	Pneumonia.....	2
		Scarlet fever.....	15
TEXAS.		Smallpox.....	4
Chicken pox.....	36	Tuberculosis.....	7
Diphtheria.....	10	Whooping cough.....	17
Dysentery.....	12	Scattering:	
Influenza.....	21	Cerebrospinal meningitis.....	1
Leprosy.....	1	Chicken pox.....	119
Measles.....	26	Diphtheria.....	33
Mumps.....	32	German measles.....	7
Paratyphoid fever.....	9	Influenza.....	15
Pellagra.....	2	Measles.....	226
Pneumonia.....	6	Ophthalmia neonatorum.....	1
Scarlet fever.....	6	Pneumonia.....	8
Smallpox.....	15	Scarlet fever.....	68
Trachoma.....	1	Smallpox.....	47
Tuberculosis.....	44	Tuberculosis.....	30
Typhoid fever.....	13	Typhoid fever.....	1
Whooping cough.....	33	Whooping cough.....	78
		WYOMING.	
VIRGINIA.		Chicken pox.....	9
Smallpox—Albemarle County.....	1	Diphtheria.....	1
WASHINGTON.		Mumps.....	6
Chicken pox.....	52	Rocky Mountain spotted fever.....	2
Diphtheria.....	69	Smallpox.....	1
Measles.....	19	Tuberculosis.....	2
Mumps.....	14	Whooping cough.....	1
Paratyphoid fever.....	4		

Report for Week Ended June 21, 1924.

DISTRICT OF COLUMBIA.

	Cases.		Cases.
Chicken pox.....	22	Smallpox.....	2
Diphtheria.....	3	Tuberculosis.....	25
Influenza.....	1	Typhoid fever.....	1
Measles.....	6	Whooping cough.....	4
Scarlet fever.....	14		

¹ Deaths.

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.	Cerebro-spinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Pollomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
MAY, 1924.										
Alabama.....	3	35	206	317	1,045	46	2	30	327	57
Illinois.....	7	464	122	1	3,825	1	4	1,063	161	63
Iowa.....		70			183			137	110	
Kansas.....	6	110	44	0	2,367	3	2	204	150	15
Maine.....	3	44	22				1	127	3	18
Mississippi.....	1	49	388	6,315	1,903	1,115	3	29	58	89
North Carolina.....	2	95			3,132		1	214	568	38
Oregon.....		44			175			89	72	10
South Dakota.....	1	38	7		596			223	7	6
Virginia.....	8	83	951	183	2,109	18	4	107	62	64
Washington.....	1	104	0	0	447	0	1	200	205	14
Wisconsin.....	4	194	128	0	1,326	0	0	657	112	42
Wyoming.....		3	1		382			44	1	2

OUTBREAK OF SMALLPOX IN HOPEWELL, N. J.

An outbreak of smallpox has been reported by the State health department of New Jersey. The earlier cases occurred in May, in Hopewell, Mercer County, but were not recognized as smallpox until the disease had spread. Cases were found in Hopewell Township, Ewing Township, and Trenton. Reports for the State were as follows: Week ended June 7, 1924, 19 cases; June 14, 1924, 18 cases; June 21, 1924, 18 cases. An emergency hospital was established at Hopewell, and vaccinations were performed daily.

PLAGUE-INFECTED GROUND SQUIRRELS IN SAN LUIS OBISPO COUNTY, CALIF.

Under date of June 20, 1924, three plague-infected ground squirrels were reported to have been found in San Luis Obispo County, Calif.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES.

Diphtheria.—For the week ended June 14, 1924, 35 States reported 1,336 cases of diphtheria. For the week ended June 16, 1923, the same States reported 1,284 cases. One hundred and two cities, situated in all parts of the country and having an aggregate population of more than 28,600,000, reported 900 cases of diphtheria for the week ended June 14, 1924. Last year for the corresponding week they reported 753 cases. The estimated expectancy for these cities was 883 cases. The estimated expectancy was based on the experience of the last nine years, excluding epidemics.

Measles.—Thirty States reported 6,935 cases of measles for the week this year and 16,317 cases for the week last year. One hundred and two cities reported 2,842 cases of measles for the week this year and 5,302 cases last year.

Scarlet fever.—Scarlet fever was reported for the week as follows: Thirty-four States, this year, 2,205 cases; last year, 1,763 cases. One hundred and two cities—this year, 1,056 cases; last year, 897 cases; estimated expectancy, 614 cases.

Smallpox.—Thirty-five States reported 858 cases of smallpox for the week ended June 14, 1924. For the corresponding week of last year they reported 346 cases of this disease. One hundred and two cities reported smallpox for the week as follows: 1924, 334 cases; 1923, 90 cases; estimated expectancy, 147 cases.

Typhoid fever.—Three hundred and thirty-seven cases of typhoid fever were reported for the week ended June 14, 1924, by 34 States. For the corresponding week of last year the number was 256 cases. One hundred and two cities reported 104 cases for the week this year and 65 cases for the week last year. The estimated expectancy for these cities was 98 cases.

Influenza and pneumonia.—Very few deaths from influenza have been reported recently. Pneumonia deaths were reported for the week by 102 cities as follows: 1924, 571 deaths; 1923, 423 deaths.

City reports for week ended June 14, 1924.

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence how many cases of the disease under consideration 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 week of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1915 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city.	Chick- en pox, cases re- ported.	Diphtheria.		Influenza.		Meas- les, cases re- ported.	Mumps, cases re- ported.	Pneu- monia, deaths re- ported.	Scarlet fever.	
		Cases, esti- mated expect- ancy.	Cases re- ported.	Cases re- ported.	Deaths re- ported.				Cases, esti- mated expect- ancy.	Cases re- ported.
NEW ENGLAND.										
Maine:										
Lewiston.....	3	1	0	0	0	22	0	1	4	2
Portland.....	6	2	4	0	0	0	41	0	1	1
New Hampshire:										
Concord.....	0	1	0	0	0	17	0	0	0	0
Vermont:										
Barre.....	0	0	0	0	0	0	0	0	1	0
Burlington.....	2	0	2	0	0	4	0	0	0	1
Massachusetts:										
Boston.....	22	50	48	2	1	104	13	24	31	73
Fall River.....	6	3	3	0	0	3	6	3	2	5
Springfield.....	8	2	0	1	0	11	11	1	4	14
Worcester.....	16	3	3	0	0	22	5	1	4	4
Rhode Island:										
Pawtucket.....	0	1	2	0	0	1	0	1	1	3
Providence.....	0	8	5	0	0	5	0	8	6	16
Connecticut:										
Bridgeport.....	3	4	7	0	0	4	1	2	3	15
Hartford.....	9	5	0	0	0	0	9	0	3	0
New Haven.....	12	3	1	0	0	8	16	6	1	12

City reports for week ended June 14, 1924—Continued.

Division, State, and city.	Chicken pox, cases re- ported.	Diphtheria.		Influenza.		Meas- les, cases re- ported.	Mumps, cases re- ported.	Pneu- monia, deaths re- ported.	Scarlet fever.	
		Cases, esti- mated expect- ancy.	Cases re- ported.	Cases re- ported.	Deaths re- ported.				Cases, esti- mated expect- ancy.	Cases re- ported.
MIDDLE ATLANTIC.										
New York:										
Buffalo.....	3	13	3	0	0	25	50	10	18	9
New York.....	200	279	275	11	4	824	168	147	118	165
Rochester.....	8	7	1	0	0	34	19	8	7	15
Syracuse.....	15	6	10	0	0	54	17	5	6	20
New Jersey:										
Camden.....		2	8	0	0	1		2	2	6
Newark.....		14	11	6	0	118		6	14	15
Trenton.....	4	3	2	0	0	11	1	8	1	3
Pennsylvania:										
Philadelphia.....		54	68	3	2	169		43	46	67
Pittsburgh.....	44	18	26	0	0	46	97	23	14	34
Reading.....	12	2	1	0	0	5	48	0	1	1
Scranton.....	0	3	3	0	0	4	0	5	2	1
EAST NORTH CENTRAL.										
Ohio:										
Cincinnati.....	16	10	4	1	0	32	10	6	6	11
Cleveland.....	104	21	13	1	0	133	166	14	18	10
Columbus.....	15	1	2	0	0	0	1	2	4	17
Toledo.....	28	6	6		1	0	0	13	13	26
Indiana:										
Fort Wayne.....	6	3	3	0	0	60	0	1	1	2
Indianapolis.....		5	3	0	0	56		3	9	3
South Bend.....	2	1	2	0	0	5	0	1	1	6
Terre Haute.....	14	1	2	0	0	2	0	0	1	0
Illinois:										
Chicago.....	135	107	65	1	1	273	98	50	64	91
Cicero.....	2	2	1	0	0	7	7	0	0	1
Peoria.....	6	1	0	0	0	1	1	2	2	3
Springfield.....		0	0	0	0	2		0	2	1
Michigan:										
Detroit.....	138	54	32		1	135	60	24	45	66
Flint.....		2							2	
Grand Rapids.....	21	1	3	0	0	9	19	2	3	9
Wisconsin:										
Madison.....	7	0	1	0	0	0	0	2	1	5
Milwaukee.....	155	11	19	0	0	39	34	0	20	16
Racine.....	12	1	3	0	0	0	0	0	2	3
Superior.....	0	1	0	0	0	0	0	1	1	4
WEST NORTH CENTRAL.										
Minnesota:										
Duluth.....	11	1	0	0	0	7	1	3	1	13
Minneapolis.....	70	12	9		1	12	4	5	17	32
St. Paul.....		12	12	0	0	2		4	10	28
Iowa:										
Sioux City.....	0	1	2	0		1	0		1	0
Waterloo.....	0	0	1	0		0	5		3	1
Missouri:										
Kansas City.....	5	6	2	1	1	15	10	11	4	13
St. Joseph.....	4	1	0	0	0	0	1	2	1	1
St. Louis.....	25	31	27	0	0	47	36		15	53
North Dakota:										
Fargo.....	0	1	1	0	0	0	0	0	1	1
Grand Forks.....	0	0	0	0	0	1	0	0	0	0
South Dakota:										
Aberdeen.....	1		1	0		11	1			0
Sioux Falls.....	12	0	0	0	0	0	0	1	0	0
Nebraska:										
Lincoln.....		1	5	0	0	2		0	1	0
Omaha.....	11	4	1	0	0	5	0	10	5	2
Kansas:										
Topeka.....	10	1	0	0	0	5	5	1	1	16
Wichita.....	20	1	0	0	0	2	4	3	1	0

City reports for week ended June 14, 1924—Continued.

Division, State, and city.	Chick- en pox, cases re- ported.	Diphtheria.		Influenza.		Meas- les, cases re- ported.	Mumps, cases re- ported.	Pneu- monia, deaths re- ported.	Scarlet fever.	
		Cases, es- timated ex- pectancy.	Cases re- ported.	Cases re- ported.	Deaths re- ported.				Cases, es- timated ex- pectancy.	Cases re- ported.
SOUTH ATLANTIC.										
Delaware:										
Wilmington.....	0	2	0	0	0	3	1	0	2	3
Maryland:										
Baltimore.....	63	13	18	4	1	154	26	14	15	0
Cumberland.....	0	0	2	0	0	0	0	1	1	0
Frederick.....	0	0	0	0	0	2	0	0	0	4
District of Colum- bia:										
Washington.....	20	8	4	0	0	17		12	9	30
Virginia:										
Lynchburg.....	2	0	1	0	0	0	9	0	0	1
Norfolk.....	13	0	1	0	0	7	3	0	1	0
Richmond.....	5	1	3	0	0	85	2	3	1	0
Roanoke.....	1	1	0	0	0	0	1	0	1	3
West Virginia:										
Charleston.....	0	1	0	0	0	30	1	1	1	1
Huntington.....	0	0	0	0	0	0	0	0	1	0
Wheeling.....	1	1	0	0	0	13	2	1	1	4
North Carolina:										
Raleigh.....	4	0	0	0	0	1	0	0	0	0
Wilmington.....	1	1	0	0	0	2	0	2	0	1
Winston-Salem.....	0	0	0	0	0	1	1	4	1	7
South Carolina:										
Charleston.....	0	1	1	0	0	0	0	1	0	0
Columbia.....	3	1	0	0	0	0	7	2	0	0
Greenville.....	0	0	0	0	0	1	0	0	0	0
Georgia:										
Atlanta.....	2	1	5	0	0	0	2	9	3	8
Brunswick.....	1	0	0	0	0	0	0	0	0	0
Savannah.....	0	0	0	0	0	1	0	0	0	1
Florida:										
St. Petersburg.....	0	1	0	0	0	0	0	1	0	0
Tampa.....	0	1	0	0	0	0	0	1	0	0
EAST SOUTH CENTRAL.										
Kentucky:										
Covington.....	0	1	1	0	0	1	0	4	1	0
Lexington.....	3	0	0	0	0	4	0	2	1	0
Louisville.....	9	3	2		1	15	1	1	1	4
Tennessee:										
Memphis.....	2	1	2		1	2	2	4	2	2
Nashville.....	0	1	0		1	4		2	1	0
Alabama:										
Birmingham.....	4	1	0	0	0	2	5	6	1	0
Mobile.....	0	0	0	0	0	3	0	0	0	0
Montgomery.....	1	0	1	0	0	0	0	3	0	0
WEST SOUTH CENTRAL.										
Arkansas:										
Fort Smith.....	2	1	1	0			1		1	0
Little Rock.....	1	0	0	0	0	4	0	3	0	1
Louisiana:										
New Orleans.....	4	4	9	0	0	1	0	10	1	5
Shreveport.....	0		1	0	0	0	0	2		0
Oklahoma:										
Oklahoma.....	0	1	1	0	0	0	0	2	1	0
Tulsa.....	0	0	0	0		3	0		0	0
Texas:										
Dallas.....	22	2	2	0	0	4	0	2	1	2
Galveston.....	0	0	0	0	0	0	0	1	0	4
Houston.....	0	1	2	0	0	0	0	2	0	0
San Antonio.....	0	2	2	0	0	0	0	7	0	0
MOUNTAIN.										
Montana:										
Billings.....	5	0	0	0	0	0	0	0	0	0
Great Falls.....	3	1	6	0	0	0	0	2	1	1
Helena.....	0	0	0	0	0	0	0	1		0
Missoula.....	0	0	0	0	0	0	0	1	1	0

City reports for week ended June 14, 1924—Continued.

Division, State, and city.	Chick- en pox, cases re- ported.	Diphtheria.		Influenza.		Meas- les, cases re- ported.	Mumps, cases re- ported.	Pneu- monia, deaths re- ported.	Scarlet fever.	
		Cases, esti- mated expect- ancy.	Cases re- ported.	Cases re- ported.	Deaths re- ported.				Cases, esti- mated expect- ancy.	Cases re- ported.
MOUNTAIN—CON.										
Idaho:										
Boise.....	0	1	0	0	0	3	0	0	1	1
Colorado:										
Denver.....	0	10	0	0	0	0	0	5	7	0
Pueblo.....	8	1	5	0	0	5	1	1	1	1
New Mexico:										
Albuquerque.....		1	0	0	0	1		1	1	0
Utah:										
Salt Lake City.....	24	2	4	0	0	12	2	4	3	0
Nevada:										
Reno.....	0	0	0	0	0	0	0	1	0	0
PACIFIC.										
Washington:										
Seattle.....	16	3	6	0		4	1		9	6
Spokane.....	41	2	32	0		12	0		3	15
Tacoma.....	9	1	4	0		1	5		2	2
Oregon:										
Portland.....	7	5	2	0	0	2	3	3	7	7
California:										
Los Angeles.....	90	26	65	2	0	123	5	9	9	24
Sacramento.....	4	2	10	0	0	6	0	1	1	0
San Francisco.....	67	17	31	0	0	6	22	6	11	18

Division, State, and city.	Popula- tion, July 1, 1923, estimated.	Smallpox.			Tubercu- losis, deaths reported.	Typhoid fever.			Whooping cough, cases reported.	Deaths, all causes.
		Cases, estimated expectancy.	Cases reported.	Deaths reported.		Cases, estimated expectancy.	Cases reported.	Deaths reported.		
NEW ENGLAND.										
Maine:										
Lewiston.....	33,790	0	0	0	2	0	0	0	1	11
Portland.....	73,129	0	0	0	0	1	1	0	0	16
New Hampshire:										
Concord.....	22,408	0	0	0	1	0	0	0	0	9
Vermont:										
Burr.....	110,008	0	0	0	1	0	0	0	0	1
Burlington.....	23,613	0	0	0	0	0	0	0	0	7
Massachusetts:										
Boston.....	770,400	0	0	0	10	2	2	0	10	209
Fall River.....	120,912	0	0	0	1	1	2	0	7	33
Springfield.....	144,227	0	0	0	3	0	0	0	0	35
Worcester.....	191,927	0	0	0	3	0	0	0	6	34
Rhode Island:										
Pawtucket.....	68,799	0	0	0	2	0	0	0	0	16
Providence.....	242,378	0	0	0	1	1	1	0	2	60
Connecticut:										
Bridgeport.....	143,555	0	0	0	1	0	1	0	0	25
Hartford.....	138,036	0	0	0	3	0	0	0	1	32
New Haven.....	172,967	0	0	0	3	1	0	0	1	37
MIDDLE ATLANTIC.										
New York:										
Buffalo.....	536,718	0	0	0	14	1	0	0	18	126
New York.....	5,927,625	0	0	0	119	12	44	0	204	1,241
Rochester.....	317,867	0	0	0	5	0	0	0	2	64
Syracuse.....	184,511	0	0	0	4	0	0	0	3	42
New Jersey:										
Camden.....	124,157	0	0	0	0	1	1	0		31
Newark.....	438,699	0	0	0	6	1	0	0		90
Trenton.....	127,390	0	7	0	3	0	0	0	3	37
Pennsylvania:										
Philadelphia.....	1,922,788	0	0	0	41	8	1	0		428
Pittsburgh.....	613,442	1	0	0	10	1	0	0	23	152
Reading.....	110,917	0	0	0	0	0	0	0	0	8
Scranton.....	140,636	0	0	0	0	0	0	0	1	

¹ Population Jan. 1, 1920.² Pulmonary only.

City reports for week ended June 14, 1924—Continued.

Division, State, and city.	Population, July 1, 1923, estimated.	Smallpox.			Tuberculosis, deaths reported.	Typhoid fever.			Whooping cough cases reported.	Deaths, all causes.
		Cases, estimated expectancy.	Cases reported.	Deaths reported.		Cases, estimated expectancy.	Cases reported.	Deaths reported.		
EAST NORTH CENTRAL.										
Ohio:										
Cincinnati.....	406,312	1	25	0	7	1	0	0	12	110
Cleveland.....	888,519	2	4	0	16	3	1	0	79	177
Columbus.....	261,082	1	2	0	7	1	0	0	7	59
Toledo.....	268,338	1	22	4	0	1	0	0	26	69
Indiana:										
Fort Wayne.....	93,573	1	1	0	2	0	1	0	0	31
Indianapolis.....	342,713	6	45	0	8	1	0	0	0	89
South Bend.....	76,709	1	1	0	2	1	0	0	1	22
Terre Haute.....	68,539	0	2	0	3	0	0	0	1	14
Illinois:										
Chicago.....	2,886,121	1	8	0	55	4	3	0	0	645
Cicero.....	55,968	0	0	0	0	0	0	0	0	5
Peoria.....	79,675	1	0	0	2	0	0	0	0	20
Springfield.....	61,833	2	0	0	0	1	0	0	0	17
Michigan:										
Detroit.....	995,668	6	56	15	30	4	2	0	52	278
Flint.....	117,968	0	1	0	0	1	0	0	0	0
Grand Rapids.....	145,947	0	1	0	0	0	1	0	2	32
Wisconsin:										
Madison.....	42,519	1	0	0	0	0	0	0	22	10
Milwaukee.....	484,595	5	2	0	0	1	0	0	22	83
Racine.....	64,393	0	1	0	0	0	0	0	0	9
Superior.....	139,671	2	3	0	0	0	0	0	0	9
WEST NORTH CENTRAL.										
Minnesota:										
Duluth.....	106,289	3	4	0	2	1	0	0	5	19
Minneapolis.....	406,125	18	7	0	4	0	0	0	3	94
St. Paul.....	241,891	5	6	0	2	0	1	0	0	61
Iowa:										
Sioux City.....	78,662	2	0	0	0	0	0	0	0	0
Waterloo.....	39,667	0	3	0	0	0	0	0	3	0
Missouri:										
Kansas City.....	351,819	8	0	0	8	1	0	0	25	88
St. Joseph.....	78,232	5	0	0	0	0	0	0	0	28
St. Louis.....	863,853	4	3	0	12	3	4	1	21	208
North Dakota:										
Fargo.....	24,841	0	6	0	1	0	0	0	0	6
Grand Forks.....	14,547	1	0	0	0	0	0	0	0	0
South Dakota:										
Aberdeen.....	15,829	0	0	0	0	0	0	0	0	0
Sioux Falls.....	29,206	1	0	0	0	0	0	0	0	7
Nebraska:										
Lincoln.....	58,761	2	1	0	0	0	0	0	0	14
Omaha.....	204,382	8	2	0	7	0	0	0	0	64
Kansas:										
Topeka.....	52,555	2	0	0	0	0	0	0	3	7
Wichita.....	79,261	5	2	0	1	0	0	0	2	28
SOUTH ATLANTIC.										
Delaware:										
Wilmington.....	117,728	0	0	0	0	0	0	0	4	22
Maryland:										
Baltimore.....	773,580	0	16	0	13	4	2	0	24	165
Cumberland.....	32,361	0	0	0	1	0	0	0	0	12
Frederick.....	11,301	0	0	0	0	0	1	0	0	2
District of Columbia:										
Washington.....	1437,571	0	1	0	4	2	0	0	5	110
Virginia:										
Lynchburg.....	30,277	0	0	0	0	0	0	0	5	7
Norfolk.....	159,089	1	0	0	2	1	0	0	0	0
Richmond.....	181,044	0	0	0	3	2	0	0	12	60
Roanoke.....	55,502	1	0	0	1	1	2	1	4	15
West Virginia:										
Charleston.....	45,597	0	1	0	0	1	0	0	5	6
Huntington.....	57,918	0	0	0	1	0	0	0	0	10
Wheeling.....	156,208	0	0	0	0	1	0	0	1	18
North Carolina:										
Raleigh.....	29,171	0	1	0	0	0	0	0	1	11
Wilmington.....	35,719	0	0	0	0	0	0	1	3	19
Winston-Salem.....	56,230	2	8	0	1	1	1	0	9	25

¹ Population Jan. 1, 1920.

City reports for week ended June 14, 1924—Continued.

Division, State, and city.	Population, July 1, 1923, estimated.	Smallpox.			Tuberculosis, deaths reported.	Typhoid fever.			Whooping cough cases reported.	Deaths, all causes.
		Cases, estimated expectancy.	Cases reported.	Deaths reported.		Cases, estimated expectancy.	Cases reported.	Deaths reported.		
SOUTH ATLANTIC—continued.										
South Carolina:										
Charleston.....	71,245	0	2	0	1	2	0	0	0	27
Columbia.....	39,688	0	0	0	2	1	2	1	4	25
Greenville.....	25,789	0	1	0	0	1	0	0	0	8
Georgia:										
Atlanta.....	222,963	5	13	0	9	2	0	1	-----	72
Brunswick.....	15,937	0	1	0	1	0	1	0	0	4
Savannah.....	89,448	1	0	0	6	2	0	0	0	38
Florida:										
St. Petersburg.....	24,403	-----	-----	-----	-----	-----	-----	-----	-----	-----
Tampa.....	56,050	0	0	0	3	0	1	0	0	22
EAST SOUTH CENTRAL.										
Kentucky:										
Covington.....	57,877	0	0	0	1	0	0	0	0	19
Lexington.....	43,673	0	0	0	1	0	1	1	0	11
Louisville.....	257,671	1	1	0	4	1	5	0	0	54
Tennessee:										
Memphis.....	170,067	1	5	0	7	1	2	1	5	54
Nashville.....	121,128	0	1	0	4	3	0	0	-----	39
Alabama:										
Birmingham.....	195,901	2	13	0	2	4	0	0	3	C3
Mobile.....	63,858	1	1	0	1	0	1	0	0	22
Montgomery.....	45,383	0	1	0	0	1	0	1	5	14
WEST SOUTH CENTRAL.										
Arkansas:										
Fort Smith.....	30,635	0	0	-----	-----	0	0	-----	2	-----
Little Rock.....	70,916	0	0	0	3	0	3	0	3	-----
Louisiana:										
New Orleans.....	404,575	3	0	0	11	3	5	1	3	176
Shreveport.....	54,590	-----	1	0	0	-----	2	0	0	20
Oklahoma:										
Oklahoma.....	101,150	5	0	0	0	0	0	0	0	21
Tulsa.....	102,018	3	1	-----	-----	1	0	-----	3	-----
Texas:										
Dallas.....	177,274	3	3	0	4	1	0	0	0	53
Galveston.....	46,877	0	0	0	0	1	0	0	0	18
Houston.....	154,970	2	3	0	2	1	3	1	-----	36
San Antonio.....	184,727	0	0	0	7	1	0	0	0	61
MOUNTAIN.										
Montana:										
Billings.....	16,927	0	0	0	0	0	0	0	0	4
Great Falls.....	27,787	1	2	0	1	1	0	0	2	10
Helena.....	¹ 12,037	-----	0	0	1	-----	0	0	0	5
Missoula.....	¹ 12,668	1	0	0	0	1	0	0	0	7
Idaho:										
Boise.....	22,806	0	4	0	0	0	0	0	0	6
Colorado:										
Denver.....	272,031	10	0	0	14	0	0	0	0	73
Pueblo.....	43,519	0	0	0	1	0	0	0	0	8
New Mexico:										
Albuquerque.....	16,648	0	0	0	1	0	0	0	-----	9
Utah:										
Salt Lake City.....	126,241	5	0	0	6	1	0	0	1	35
Nevada:										
Reno.....	12,429	0	0	0	0	0	0	0	0	2
PACIFIC.										
Washington:										
Seattle.....	¹ 315,685	6	0	-----	-----	1	2	-----	0	-----
Spokane.....	104,573	4	8	-----	-----	0	1	-----	10	-----
Tacoma.....	101,731	3	1	-----	-----	0	0	-----	0	-----
Oregon:										
Portland.....	273,621	7	2	0	3	0	2	1	1	49
California:										
Los Angeles.....	666,853	1	49	0	28	2	3	0	21	211
Sacramento.....	69,950	0	0	0	2	0	2	0	0	18
San Francisco.....	539,038	1	0	0	13	2	0	0	2	142

¹ Population Jan. 1, 1920.

City reports for week ended June 14, 1924—Continued.

Division, State, and city.	Cerebrospinal meningitis.		Lethargic encephalitis.		Pellegra.		Poliomyelitis (infantile paralysis).		Typhus fever.		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases, est. expectancy.	Cases.	Deaths.	Cases.	Deaths.
NEW ENGLAND.											
Maine:											
Portland.....	1	0	0	0	0	0	0	0	0	0	0
Massachusetts:											
Boston.....	2	1	0	0	0	0	1	0	0	0	0
Connecticut:											
Hartford.....	0	0	1	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC.											
New York:											
New York.....	4	5	8	4	0	0	2	2	0	1	0
Syracuse.....	0	0	0	0	0	0	0	1	0	0	0
Pennsylvania:											
Pittsburgh.....	0	1	0	0	0	0	0	0	0	0	0
EAST NORTH CENTRAL.											
Illinois:											
Chicago.....	2	0	0	0	0	0	1	1	0	0	0
Michigan:											
Detroit.....	0	0	1	1	0	0	1	0	0	0	0
SOUTH ATLANTIC.											
Maryland:											
Baltimore.....	0	0	0	1	0	0	0	1	1	0	0
Virginia:											
Roanoke.....	0	0	0	0	0	1	0	0	0	0	0
North Carolina:											
Raleigh.....	0	0	0	0	0	1	0	0	0	0	0
South Carolina:											
Columbia.....	0	0	0	0	0	2	0	1	0	0	0
Florida:											
Tampa.....	0	0	0	0	0	1	0	0	0	0	0
EAST SOUTH CENTRAL.											
Tennessee:											
Memphis.....	0	0	0	0	0	1	0	0	0	0	0
Alabama:											
Birmingham.....	0	0	0	0	0	2	0	0	0	0	0
Mobile.....											
Montgomery.....	0	0	0	0	0	1	0	0	1	0	0
WEST SOUTH CENTRAL.											
Arkansas:											
Little Rock.....	0	0	0	0	1	0	0	0	0	0	0
Louisiana:											
New Orleans.....	0	0	1	0	0	0	0	0	0	0	0
Shreveport.....	0	0	0	0	0	1	0	0	0	0	0
MOUNTAIN.											
Colorado:											
Denver.....	0	1	0	0	0	0	0	0	0	0	0
PACIFIC.											
California:											
Los Angeles.....	2	0	0	0	0	0	0	0	0	0	0
San Francisco.....	0	2	1	1	0	0	1	0	0	0	0

The following table gives a summary of the reports from 105 cities for the ten-week period ended June 14, 1924. The cities included in this table are those whose reports have been published for all ten weeks in the Public Health Reports. Eight of these cities did not report deaths. The aggregate population of the cities reporting

cases was estimated at nearly 29,000,000 on July 1, 1923, which is the latest date for which estimates are available. The cities reporting deaths had more than 28,000,000 population on that date. The number of cities included in each group and the aggregate population are shown in a separate table below.

Summary of weekly reports from cities, April 6 to June 14, 1924.

DIPHTHERIA CASES.

	1924, week ended—									
	Apr. 12.	Apr. 19.	Apr. 26.	May 3.	May 10.	May 17.	May 24.	May 31.	June 7.	June 14.
Total.....	1,006	1,009	988	910	892	930	927	869	919	909
New England.....	102	99	111	97	83	78	94	85	90	73
Middle Atlantic.....	384	374	400	344	395	357	340	371	357	405
East North Central.....	210	211	156	173	157	168	175	¹ 130	150	² 155
West North Central.....	60	60	71	68	64	110	106	80	76	55
South Atlantic.....	52	52	50	38	31	42	32	³ 33	⁴ 41	35
East South Central.....	8	14	13	6	8	3	8	4	8	6
West South Central.....	24	31	33	18	26	16	18	18	18	17
Mountain.....	40	52	31	35	29	18	30	14	37	15
Pacific.....	126	116	123	131	99	138	124	134	112	148

MEASLES CASES.

Total.....	6,237	5,147	5,203	4,730	4,422	4,019	3,716	2,943	3,240	2,846
New England.....	401	353	354	379	339	271	310	227	247	175
Middle Atlantic.....	2,647	2,347	2,184	2,310	1,889	1,868	1,571	1,231	1,483	1,287
East North Central.....	838	675	829	703	862	781	873	¹ 733	747	² 755
West North Central.....	415	359	350	257	274	197	123	124	130	97
South Atlantic.....	626	487	518	485	457	465	468	³ 344	⁴ 317	317
East South Central.....	156	159	173	98	73	56	56	47	36	32
West South Central.....	323	188	127	104	71	51	33	28	19	11
Mountain.....	241	179	193	113	97	100	79	70	50	20
Pacific.....	590	400	475	281	360	230	198	139	211	152

SCARLET FEVER CASES.

Total.....	1,796	1,658	1,532	1,605	1,549	1,503	1,311	1,213	1,244	1,065
New England.....	326	253	271	242	210	213	165	168	181	143
Middle Atlantic.....	498	474	467	473	470	452	406	380	401	335
East North Central.....	345	334	284	325	318	336	279	¹ 259	243	² 249
West North Central.....	230	222	195	197	219	223	182	167	182	160
South Atlantic.....	218	189	168	171	159	118	134	³ 112	⁴ 121	92
East South Central.....	18	16	12	16	19	9	9	8	11	6
West South Central.....	26	27	18	23	15	14	14	11	11	12
Mountain.....	20	19	23	27	37	26	30	17	17	3
Pacific.....	115	124	94	131	102	113	92	91	77	65

SMALLPOX CASES.

Total.....	536	467	568	543	460	529	408	331	472	335
New England.....	1	1	0	0	0	0	0	0	0	0
Middle Atlantic.....	1	0	0	0	0	5	1	1	8	7
East North Central.....	141	164	193	186	165	213	181	¹ 149	174	² 153
West North Central.....	61	41	62	53	33	39	26	19	40	33
South Atlantic.....	98	93	98	70	95	51	54	³ 29	⁴ 39	44
East South Central.....	45	26	56	49	20	54	33	36	107	22
West South Central.....	4	5	2	4	1	7	6	7	5	7
Mountain.....	4	10	6	5	6	6	3	7	2	6
Pacific.....	181	127	152	176	140	154	104	83	97	58

¹ Figures for Columbus, Ohio, estimated. Report not received at time of going to press.

² Figures for Flint, Mich., estimated.

³ Figures for St. Petersburg, Fla., estimated.

Summary of weekly reports from cities, April 6 to June 14, 1924—Continued.

TYPHOID FEVER CASES.

	1924, week ended—									
	Apr. 12.	Apr. 19.	Apr. 26.	May 3.	May 10.	May 17.	May 24.	May 31.	June 7.	June 14.
Total.....	52	55	58	49	68	73	78	78	92	107
New England.....	4	4	7	4	9	2	6	9	3	7
Middle Atlantic.....	21	17	11	10	25	32	24	18	30	46
East North Central.....	7	7	10	11	9	12	7	16	11	29
West North Central.....	2	6	1	3	2	3	8	5	8	5
South Atlantic.....	10	4	8	11	11	8	18	13	12	10
East South Central.....	1	4	8	3	3	7	6	11	7	8
West South Central.....	2	4	6	3	3	3	5	10	13	13
Mountain.....	1	4	0	1	3	0	2	1	0	0
Pacific.....	4	5	7	3	3	6	2	5	8	9

INFLUENZA DEATHS.

Total.....	95	80	72	51	60	49	40	30	21	15
New England.....	3	3	3	2	2	1	2	1	1	1
Middle Atlantic.....	35	31	30	21	32	25	19	10	5	6
East North Central.....	25	14	12	7	10	5	11	10	3	2
West North Central.....	8	4	4	3	3	4	3	1	2	2
South Atlantic.....	7	6	10	5	7	5	6	5	3	1
East South Central.....	6	11	8	3	4	4	3	1	2	3
West South Central.....	3	4	3	4	0	3	1	1	2	0
Mountain.....	2	4	2	0	1	1	1	0	0	0
Pacific.....	6	3	0	6	1	1	3	1	3	0

PNEUMONIA DEATHS.

Total.....	1,222	1,101	959	935	782	743	644	630	590	575
New England.....	71	61	63	69	55	52	36	34	37	46
Middle Atlantic.....	494	474	430	392	332	343	285	267	276	250
East North Central.....	258	232	179	199	150	139	136	131	118	109
West North Central.....	74	64	49	53	42	41	28	40	22	40
South Atlantic.....	158	118	114	97	93	86	64	60	66	52
East South Central.....	53	57	42	44	29	22	32	40	18	20
West South Central.....	43	43	35	24	25	27	27	14	18	27
Mountain.....	32	25	26	27	24	13	11	18	14	15
Pacific.....	39	27	30	30	32	20	15	26	21	16

¹ Figures for Columbus, Ohio, estimated. Report not received at time of going to press.

² Figures for Flint, Mich., estimated.

³ Figures for St. Petersburg, Fla., estimated.

Number of cities included in summary of weekly reports and aggregate population of cities in each group, estimated as of July 1, 1923.

Group of cities.	Number of cities reporting cases.	Number of cities reporting deaths.	Aggregate population of cities reporting cases.	Aggregate population of cities reporting deaths.
Total.....	105	97	28,898,350	28,140,934
New England.....	12	12	2,098,746	2,098,746
Middle Atlantic.....	10	10	10,304,114	10,304,114
East North Central.....	17	17	7,032,535	7,032,535
West North Central.....	14	11	2,515,330	2,381,454
South Atlantic.....	22	22	2,566,901	2,566,901
East South Central.....	7	7	911,885	911,885
West South Central.....	8	6	1,124,564	1,023,013
Mountain.....	9	9	546,445	546,445
Pacific.....	6	3	1,797,830	1,275,841

FOREIGN AND INSULAR.

PLAGUE ON VESSEL.

At Bushire, Persia—Month of April, 1924.

During the month of April, 1924, a case of plague was reported landed from a vessel at Bushire, Persia, with fatal termination in quarantine.

SMALLPOX ON VESSEL.

Steamship "Karoa"—At Durban, South Africa.

The steamship *Karoa* arrived at Durban, South Africa, from Bombay, India, May 7, 1924, with a case of smallpox on board in the person of a European. The patient was removed to the Salisbury Island quarantine station. The *Karoa* left Bombay April 16, 1924.

GREAT BRITAIN.

Lethargic Encephalitis—Glasgow.

The report of the public health department of Glasgow, Scotland, for the month of May, 1924, shows a sudden outbreak of lethargic encephalitis at Glasgow during the last week in April, followed by development of the outbreak during the month of May. Occasional cases of the disease had occurred during the period from January 1 to April 15. During the week ended April 26, 24 cases were notified, followed by 31, 34, and 44 cases during the weeks ended May 3, 10, and 17, respectively, and by 23 and 13 cases during the last two weeks of May. Direct association between cases was stated to have been wholly absent, but some groupings occurred among persons who had no association in common except residence in a particular street. The earliest incidence was among children; but the incidence of the later cases was stated to have been chiefly between the ages of 15 and 35. To June 4, 1924, the total number of reported cases from the beginning of April, 1924, was 189, with 15 deaths. (Population, 1,051,000.)

JAMAICA.

Smallpox (Reported as Alastrim).

During the week ended June 7, 1924, 42 new cases of smallpox (reported as alastrim) were notified in the island of Jamaica. Of these, two cases were notified for Kingston.

Chicken pox.

During the same period, four new cases of chicken pox were notified in the island of Jamaica.

LATVIA.

Communicable Diseases—April, 1924.

During the month of April, 1924, communicable diseases were notified in the Republic of Latvia as follows:

Disease.	Cases.	Disease.	Cases.
Cerebrospinal meningitis.....	1	Scarlet fever.....	128
Chicken pox.....	2	Smallpox.....	1
Diphtheria.....	53	Typhoid fever.....	61
Measles.....	282	Typhus fever ¹	39
Mumps.....	38	Whooping cough.....	54

¹ Paratyphus, 2 cases.

Dysentery—Malaria.

During the same period, seven cases of dysentery and one case of malaria were notified in the Republic of Latvia.

MADAGASCAR.

Plague—April 1-15, 1924.

During the period April 1 to 15, 1924, 54 cases of plague with 50 deaths were reported in the island of Madagascar. The occurrence was in the Province of Tananarive, with 8 cases and 8 deaths occurring in the town of Tananarive and 46 cases with 42 deaths in other localities of the Province.

MALTA.

Communicable Diseases—May 1-15, 1924.

During the period May 1 to 15, 1924, communicable diseases were reported in the island of Malta as follows:

Disease.	Cases.	Disease.	Cases.
Chicken pox.....	1	Scarlet fever.....	1
Diphtheria.....	1	Trachoma.....	10
Influenza.....	3	Tuberculosis.....	15
Measles.....	30	Typhoid fever.....	6
Pneumonia.....	1	Undulant fever.....	53

Population, officially estimated, 216,702.

PANAMA CANAL.

Communicable Diseases—May, 1924.

Communicable diseases were reported in the Panama Canal Zone during the month of May, 1924, as follows:

Disease.	Canal Zone.	Colon.	Panama.	Nonresident.	Total.
Chicken pox.....	6	2	9	1	18
Diphtheria.....	3	2	1	—	6
Dysentery.....	—	1	9	—	10
Hookworm disease.....	10	4	30	30	80
Leprosy.....	—	—	1	2	3
Malaria.....	78	3	7	51	137
Measles.....	29	17	1	1	48
Meningitis.....	—	1	—	—	1
Mumps.....	—	—	1	1	2
Pneumonia.....	2	3	21	—	26
Polio-myelitis.....	—	1	—	—	1
Tuberculosis.....	1	4	35	12	52
Typhoid fever.....	2	1	—	1	4
Whooping cough.....	11	2	1	—	14

PARAGUAY.

Precautions Against Plague—Chaco.

Information dated May 2, 1924, shows that the Paraguayan sanitary authorities have taken precautions to prevent the spread of plague into southern Paraguay from the Argentine territory of Chaco, where a number of cases have been reported as occurring during the month of April, 1924.

SPAIN.

Mortality from Certain Diseases—Barcelona, 1923.

Information received under date of June 7, 1924, shows reported mortality from certain diseases at Barcelona, Spain, during the year 1923, as follows: Cancer, 707; smallpox, 160; tuberculosis, 1,533; typhoid fever, 494. Population, officially estimated, 1,000,000.

SUMATRA.

Malaria—Batoe Bahra—January, 1924.¹

During the month of January, 1924, 178 cases of malaria with 15 deaths were reported at Batoe Bahra, island of Sumatra, Malay Archipelago.

UNION OF SOUTH AFRICA.

Plague.

During the week ended May 3, 1924, four cases of plague with three deaths, occurring among natives, were reported in the Kroonstad district of the Orange Free State, Union of South Africa.

¹ Public Health Reports, January 18, 1924, p. 134.

During the week ended May 10, 1924, six new cases of plague with five deaths were reported in the Union of South Africa, the occurrence being in one district of the Cape Province and two districts of the Orange Free State. The total occurrence of plague in the Union from December 16, 1923, to May 10, 1924, was reported as follows: Cases, 330 (white, 48; native, 282); deaths, 201 (white, 22; native, 179).

Smallpox—Typhus Fever—March, 1924.

During the month of March, 1924, 52 cases of smallpox occurring among the native population and 4 cases among the white population were reported in the Union of South Africa.

During the same period, 106 cases of typhus fever with 12 deaths were reported among natives and 15 cases with 1 death among the white population. For distribution of occurrence according to States, see page 1656.

VIRGIN ISLANDS.

Communicable Diseases—May, 1924.

During the month of May, 1924, communicable diseases were notified in the Virgin Islands of the United States as follows:

Island and disease.	Cases.	Remarks.
St. Thomas and St. John:		
Gonorrhoea.....	9	
Pellagra.....	1	
Syphilis.....	2	One imported. Secondary, 1; tertiary, 1.
Tuberculosis.....	2	Chronic pulmonary.
St. Croix:		
Chancroid.....	1	
Filariasis.....	7	Bancrofti.
Gonorrhoea.....	2	
Syphilis.....	3	Secondary.
Trachoma.....	6	
Tuberculosis.....	2	Chronic pulmonary.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER.

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended July 4, 1924.¹

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India.....				Apr. 20-May 3, 1924: Cases, 21,517; deaths, 16,219.
Bombay.....	May 4-10.....	1		
Calcutta.....	May 11-17.....	49	38	
Rangoon.....	do.....	7	5	
Indo-China:				
Saigon.....	Apr. 27-May 3.....	1	1	
Siam:				
Bangkok.....	May 4-10.....	2	2	

¹ From medical officers of the Public Health Service, American consuls, and other sources. For reports received from Dec. 29, 1923 to June 27, 1924, see Public Health Reports for June 27, 1924. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX AND TYPHUS FEVER—Continued.
Reports Received During Week Ended July 4, 1924—Continued.
PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Argentina: Chaco Territory.....				April, 1924: cases reported.
Ceylon: Colombo.....	May 11-17.....	3	1	Plague rats, 2.
China: Foochow.....	do.....		6	
Egypt: City—				Jan. 1–May 29, 1924: Cases, 252; deaths, 126.
Alexandria.....	Apr. 2.....	1	1	
Port Said.....	Apr. 24–May 3.....	1		
Suez.....	May 14–20.....	1		
Province—				
Assiout.....	Apr. 1–May 25.....	37	28	
Charkieh.....	Jan. 31.....	1		
Fayoum.....	Feb. 18–May 29.....	76	21	
Gharbieh.....	Apr. 21.....	1		
Girgeh.....	Jan. 17–May 13.....	10	3	
Kalioubieh.....	Jan. 6–May 22.....	10	1	
Kena.....	Apr. 9–May 17.....	44	26	
Menoufieh.....	Jan. 2–May 16.....	43	28	
Minia.....	Feb. 5–May 27.....	18	11	
India.....				Apr. 20–May 3, 1924: Cases, 31,494; deaths, 28,648.
Bombay.....	May 4-17.....	27	24	
Calcutta.....	May 11-17.....	4	4	
Karachi.....	May 18-24.....	8	5	
Madras Presidency.....	do.....	7	1	
Rangoon.....	May 11-17.....	12	13	
Iraq: Bagdad.....	Apr. 20–May 10.....	51	35	
Madagascar: Tananarive Province.....				Apr. 1-15, 1924: Cases, 54; deaths, 50.
Tananarive Town.....	Apr. 1-15.....	8	8	
Other localities.....	Apr. 1-15.....	46	42	
Persia: Bushire.....	Apr. 1-30.....	1	1	In quarantine from vessel.
Siam: Bangkok.....	May 4-10.....	2	2	
Union of South Africa.....				Apr. 27–May 10, 1924: Cases, 10; deaths, 8. Total, Dec. 16, 1923–May 10, 1924: Cases, 330; deaths, 201. (White, 48 cases; 22 deaths; native cases, 282; deaths, 179.)

SMALLPOX.

Canada: Quebec— Montreal.....	June 8-14.....	1		
China: Amoy.....	May 11-17.....			Present.
Chungking.....	do.....			Wide spread.
Manchuria— Dairen.....	May 12-18.....	6	2	
Harbin.....	May 13-19.....	1		
Tientsin.....	May 4-17.....	5		
Egypt: Cairo.....	Feb. 19–Mar. 11.....	9		
Great Britain: England and Wales.....				May 25-31, 1924: Cases, 75.
County— Derby.....	May 25-31.....	40		
Northumberland.....	do.....	15		
Nottingham.....	do.....	7		
York.....	do.....	5		
India.....				Apr. 20–May 3, 1924: Cases, 7,121; deaths, 1,535.
Bombay.....	May 4-17.....	172	99	
Calcutta.....	May 11-17.....	3	2	
Karachi.....	May 18-24.....	13	3	
Madras.....	do.....	4	1	
Rangoon.....	May 11-17.....	10	4	
Indo-China: Saigon.....	Apr. 27–May 3.....	40	23	Including 100 square kilometers of surrounding territory.
Iraq: Bagdad.....	Apr. 20–May 10.....	6	1	

CHOLERA, PLAGUE, SMALLPOX AND TYPHUS FEVER—Continued.**Reports Received During Week Ended July 4, 1924—Continued.****SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Italy:				
Messina.....	May 26-June 1....	1		
Jamaica.....				June 1-7, 1924: Cases, 42 (reported as alastrim).
Kingston.....	June 1-7.....	2		
Japan:				
Kobe.....	May 16-June 1....	1		
Java:				
East Java—				
Soerabaya.....	Apr. 13-19.....	25	9	
Latvia.....				Apr. 1-30, 1924: Cases, 1.
Mexico:				
Guadalajara.....	May 1-31.....	5	1	
Mexico City.....	May 4-17.....	29	17	Including municipalities in Federal District.
Palestine:				
Samak.....	May 27-June 2....	1		
Portugal:				
Lisbon.....	May 25-31.....	3		
Oporto.....	do.....	5	3	
Siam:				
Bangkok.....	Apr. 27-May 10...	3	3	
Spain:				
Barcelona.....				Year 1923: Cases, 160.
Sumatra:				
Medan.....	Jan. 1-31.....	5		
Tunis:				
Tunis.....	May 27-June 2....	3		
Union of South Africa:				
Cape Province.....	May 4-10.....			Mar. 1-31, 1924: Cases, 56 (white, 4 cases; native, 52). Outbreaks. Do. Do.
Orange Free State.....	do.....			
Transvaal.....	do.....			
On vessel:				
S. S. Karoa.....	May 7.....	1		At Durban, South Africa, from Bombay, India; vessel left Bombay Apr. 16, 1924. Patient, European.

TYPHUS FEVER.

Algeria:				
Algiers.....	May 1-31.....	19	8	
China:				Widespread.
Chungking.....	May 11-17.....			
Egypt:				
Cairo.....	Feb. 19-Mar. 11...	5	2	
Germany:				
Hamburg.....	May 25-31.....	3		
Iraq:				
Bagdad.....	Apr. 27-May 10...	2		
Latvia.....				Apr. 1-30, 1924: Cases, 39. Paratyphus, 1 case; paratyphus B., 1 case.
Mexico:				
Guadalajara.....	May 1-31.....		1	
Mexico City.....	May 4-17.....	17		Including municipalities in Federal District.
Tunis:				
Tunis.....	May 27-June 2....	3		
Union of South Africa:				
Cape Province.....				Mar. 1-31, 1924: Cases, 121; deaths, 13. (White—cases, 15; deaths, 1. Native—cases, 106; deaths, 12.)
Do.....	May 4-10.....			Mar. 1-31, 1924: Cases, 60; deaths, 5.
Natal.....				Outbreaks.
Durban.....	Apr. 20-25.....	1		Mar. 1-31, 1924: Cases, 2.
Orange Free State.....				Mar. 1-31, 1924: Cases, 19; deaths, 3.
Transvaal.....				Mar. 1-31, 1924: Cases, 25; deaths, 4.
Johannesburg.....	May 11-17.....	1		