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Current Organizational Patterns of Statistical Activities in State Health Departments

By DANIEL D. SWINNEY, M. A.*

The purpose of this article is twofold: to describe the existing patterns of statistical organization in the 48 State health departments and the administrative relationships and functions of those organizations, and to present the opinions of personnel concerned with statistical activities.

Four articles published previously have covered the general organization of statistical activities in State health departments. Linder, in 1939, described the problems of statistical organization from the point of view of the registrar of vital statistics (*1*). The basic patterns he outlined still exist. In 1940, Mountin and Flook (in a revised edition of Public Health Bulletin No. 184) indicated the specific statistical activities that were being carried on in State health departments (*2*). Whitman, in a paper presented at the 1946 Annual Meeting of the American Public Health Association, described the uses made of statistical data by State health departments, and briefly noted current trends in statistical organization (*3*). In 1947, this writer, using official publications and reports, analyzed the current status of statistical organization and the related classification and compensation plans (*4*). National summaries were given, but the information available was not sufficiently detailed to permit analyses and tabulations by States.

This article is based on the results of extensive field investigations in approximately 30 States, and on correspondence or conversations with personnel in the other States. Detailed information was obtained on all aspects of the administration and content of statistical activities and their relationships to the program being administered. These investigations were made in cooperation with subcommittees of the Vital Statistics Section of the American Public Health Association. While this article is limited to problems relating to the organization of statistical activities, subsequent articles will deal specifically with related problems of personnel.

*Public Health Administrator, Division of Public Health Methods.

For the purpose of this discussion, statistical activities are defined as the collection, tabulation, analysis, and presentation of quantitative data on any aspect of public health services, their administration, environment, or medical content.

Analysis of the organization of statistical activities in the 48 State health departments as of October 1947 reveals that there are five basic patterns of organization.

State health departments having:

1. No central statistical organization; [1]
2. A division of vital statistics with some central statistical services;
3. A division of vital statistics with an independent central tabulating unit;
4. A central statistical division, with an independent division of vital records;
5. A central statistical division covering all registrations and statistical activities.

The distribution of these patterns by State health departments is

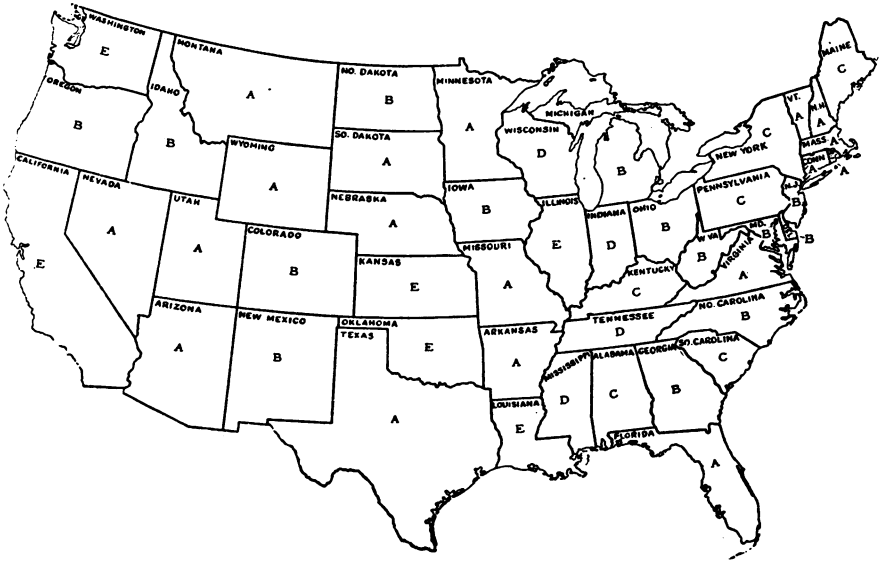


Figure 1. State health departments classified by type of statistical organization as of October 1947.

A. No central statistical organization—18.
B. Division of vital statistics with some central statistical services—14.
C. Division of vital statistics with independent central tabulating unit—6.
D. Central statistical division with independent division of vital records—4.
E. Central statistical division—6.

[1] Except the bureau or division of vital statistics which is responsible for the registration, maintenance, and tabulation of births, deaths, etc., and other activities connected directly therewith.

shown in figure 1, and descriptions of the patterns with specific examples are presented in the following pages.

States With no Central Statistical Organization

Eighteen State health departments [2] have no central statistical organization serving the entire department. Each major subdivision of the health department is responsible for all its own record keeping, reporting and statistical functions. The collection, tabulation, and analysis of vital records is the function of a separate division or bureau of vital statistics. The organizational structure of the Minnesota Department of Health indicates a pattern of record keeping and statistical activity similar to that of the other States in this group (fig. 2). All statistical activity in this department is decentralized to the divisional level of administration.

MINNESOTA DEPARTMENT OF HEALTH

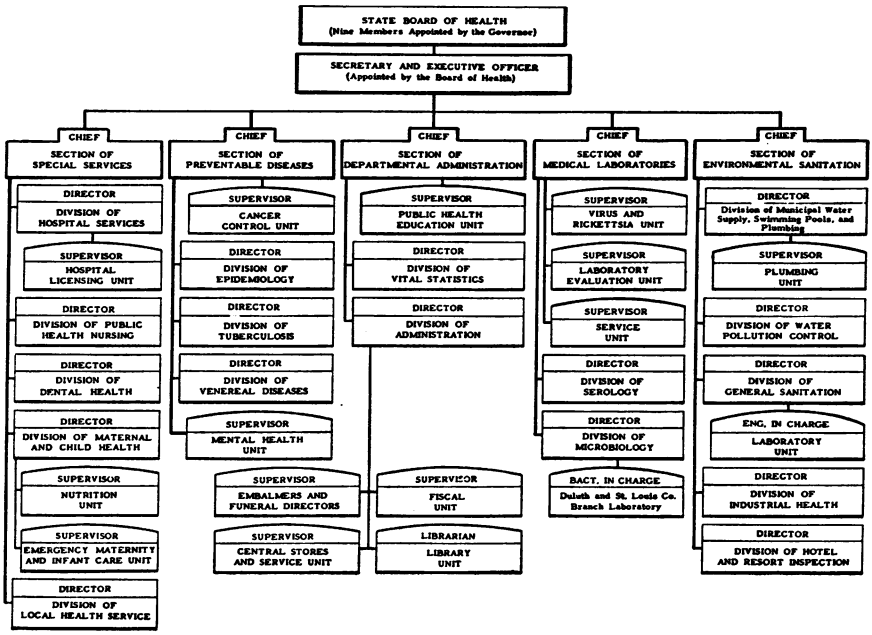


Figure 2

In this pattern, each division director has the primary responsibility for the administration of the technical services offered by his division, including the collection, compilation, and analysis of all statistical reports that are needed or required, the initiation and maintenance of all records for the particular program, and the release of data

[2] Arizona, Arkansas, Connecticut, Florida, Massachusetts, Minnesota, Missouri, Montana, Nebraska' Nevada, New Hampshire, Rhode Island, South Dakota, Texas, Vermont, Utah, Virginia, Wyoming.

concerning the program to the public and other agencies. The functions of the Division of Vital Statistics at present are primarily limited to the collection, maintenance, and routine analysis of vital statistics. One statistician is employed in that division, and is available for consultation with other divisions on request. Plans are being made to compile and reproduce accident statistics in the future. There are no other statistical units per se in the health department. The record keeping and the reporting requirements for both the State department and the local health units are determined by the professional personnel in the operating programs. Tabulations, analyses, and interpretations of data of a complex character or denoting highly significant trends are the concern of the division director and his assistant.

Five of the State health departments in this group have the same type of administrative structure as in Minnesota, while 12 have the various divisions grouped under a small number of bureaus. Actually the only difference in these 12 States is the fact that division directors report to a bureau chief instead of to the State health officer or his deputy. In other words, they are once removed from the top echelon of authority and policy determination. In several of the smaller States, the State health officer is the registrar of vital records, and the director of the division of vital statistics is the assistant registrar. In Nevada, the Division of Vital Statistics is merged with the personnel functions of the department, while in South Dakota vital statistics and public health education are in one division. In Massachusetts, the Division of Vital Statistics is under the Secretary of State, and is not directly associated with the State Department of Health, although a cooperative relationship exists.

In this group of States the functions of the various divisions of vital statistics are all primarily the same—the collection, maintenance, and analysis of data relating to births, deaths, and in some instances marriages and divorces. A few of them are responsible for tabulating the communicable disease reports and for other small statistical services for some other divisions in the health department. They are, however, not centralized statistical divisions in any sense of the word.

Several of these States lack a trained statistician in the State department of health. With a few exceptions, the State health officers recognize the need for the employment of such a person, but are without either funds or candidates for such a position. Approximately one-third of these States have general plans for reorganizing and expanding their statistical activity when funds and personnel become available. In general, the plans for reorganization and expansion stem from the desire to achieve greater administrative efficiency and economy by centralizing and pooling all mechanical

tabulating equipment, and to relieve other division directors from administrative detail.

States With a Division of Vital Statistics and Some Centralized Statistical Services

Another pattern of statistical organization appearing in 14 States [3] is the expansion of the functions of the division of vital statistics to include limited statistical services to other divisions. In most of these States such services are restricted to those emanating from mechanical tabulation. This pattern is an outgrowth of the desire to achieve economy and efficiency by pooling all mechanical tabulating equipment and specialized statistical personnel. In general, the program divisions supervise the collection of the data, edit them, and plan the tabulations. The central tabulating unit punches the cards and tabulates the data. The final tables are then returned to the program division for analysis and release. In some instances, routine analyses are made in the tabulating unit. In several of the States, statistical consultant services are made available to other divisions in the health department. In a smaller number of the States extensive analytical studies are made for other divisions.

The Michigan Department of Public Health (fig. 3) has the type of statistical organization described above. This State has a Bureau of Records and Statistics instead of a vital statistics bureau. Plans for the future provide for the expansion of this bureau into a centralized statistical bureau. It cannot now be so classified because of its limited functions.

The specific functions of the central tabulating units vary from State to State. In each of the States of this group, a majority of the major tabulations are processed through the central unit. None of the central tabulating units is, as yet, doing all the tabulating work for all divisions of the health department. In each of the departments some division directors prefer to supervise their own tabulations. In most of the States, however, all the mechanical tabulations are done by the central tabulating unit. The size of the tabulating units and the amounts and types of equipment, of course, vary with the size of the States and the scope of their statistical operations. Most of the States employ at least one person well trained in tabulating procedures and machine equipment. Few of the tabulating supervisors, however, have had formal statistical training. One of the States has no one on its health department staff who is trained thoroughly in mechanical tabulation. The tabulating unit in this instance is actually directed by the IBM [4] service unit in the area.

[3] Colorado, Delaware, Georgia, Indiana, Iowa, Maryland, Michigan, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oregon, West Virginia.

[4] International Business Machine Corporation.

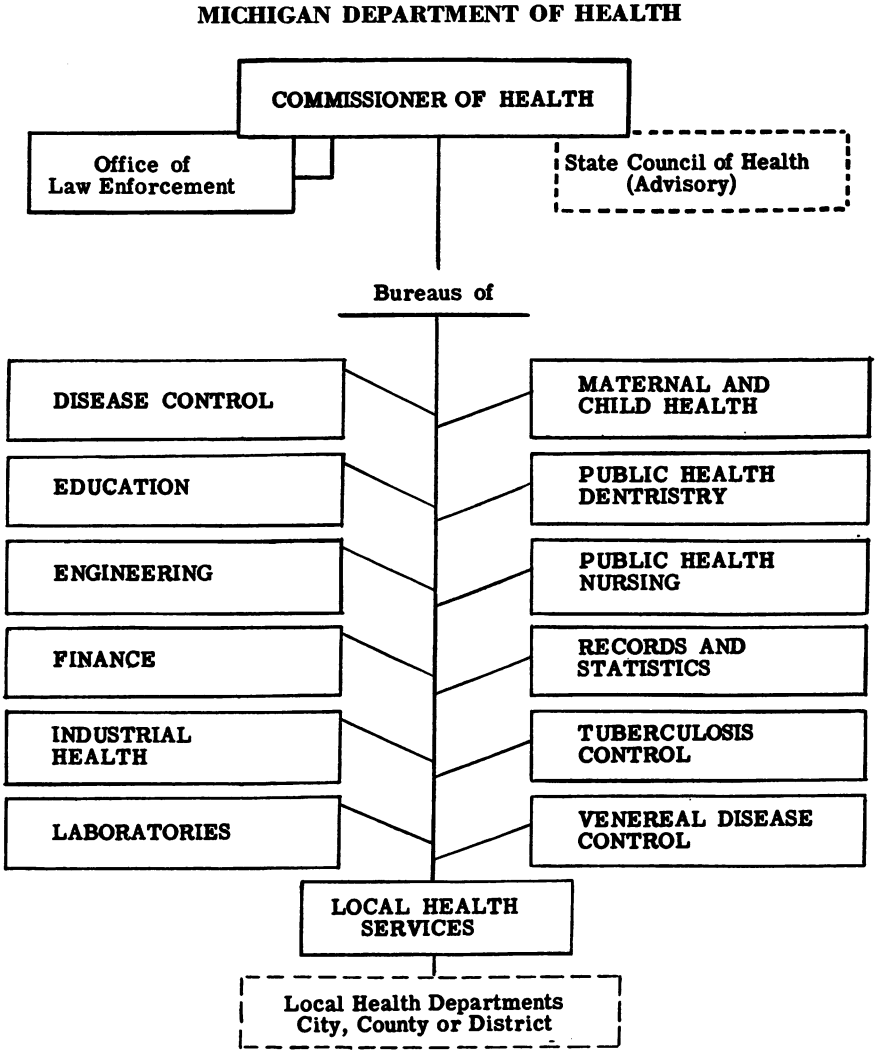


Figure 3

States With a Division of Vital Statistics Plus an Independent Central Tabulating Unit

Six States [5] have a slightly different pattern of organization. They have established a division of vital statistics and an independent central tabulating unit. All other statistical activities are performed by individual program divisions. In other words, all statistical activity except mechanical tabulation is decentralized, and the latter is placed in a separate division that is divorced completely from other statistical activity. In Alabama, New York, and South Carolina, the

[5] Alabama, Kentucky, Maine, New York, Pennsylvania, South Carolina.

tabulating divisions are a component part of the bureau of administration or its equivalent.

Only one of the six States has a statistician associated directly with the tabulating unit. In New York State, the senior statistician in the Division of Vital Statistics is available to the other divisions for statistical consultation. In addition, the senior statistician often represents the department on statistical matters affecting the department as a whole.

The organization of the Alabama Health Department is typical of the pattern described above (fig. 4). Although most of the actual statistical work of the Alabama Health Department is accomplished under the supervision of the directors of specific programs, the Bureau of Vital Statistics is called upon frequently for statistical consultation, and occasionally does some of the statistical work involved. This is true particularly in the fields of maternal and child health, venereal disease, tuberculosis, and administration. Such consultation and analyses are functions of the analysis unit of that bureau.

ALABAMA STATE BOARD OF HEALTH

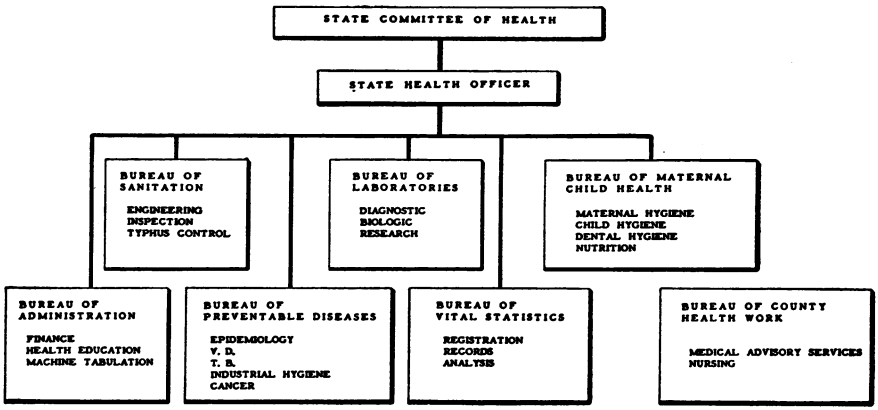


Figure 4

States With a Central Statistical Division Plus an Independent Division of Vital Records

Four States (Indiana, Mississippi, Tennessee, Wisconsin) have centralized their statistical services in an independent division, with a separate division responsible for the registration of vital records. The tabulation and analysis of vital records are among the functions of the statistical division in each of the States. Inasmuch as Tennessee was the first to establish this type of organization, it is of interest

TENNESSEE DEPARTMENT OF PUBLIC HEALTH

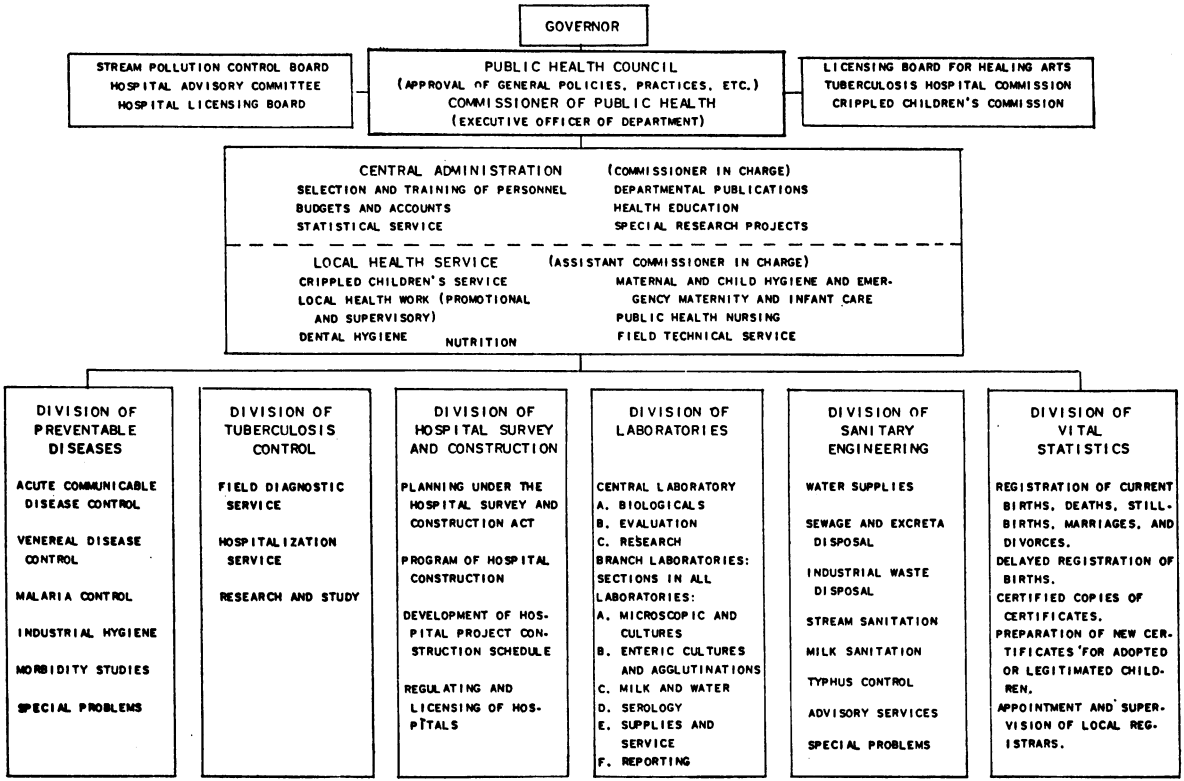


Figure 5

to review not only its organization (fig. 5) and its relationship to other health department activities, but also its functions. The Statistical Service, it will be noted, is an integral part of the Commissioner's Office. In other words, it is a staff agency providing staff services and technical assistance, but is relieved of any administrative or operating responsibilities. It is not directly responsible for the collection of any basic statistical data. This represents an overt effort of the Commissioner of Health to free the chief of the Statistical Service from all administrative detail in order that time will be available for "thinking the programs through" and for planning, analysis, and interpretation. This organization also is designed to facilitate the elimination of biases which may result from having a vested interest either in a specific program or in the collection of basic statistics regarding that program.

The service provides a central tabulating unit, assistance in the analysis of statistical data, and consultation on any recording or statistical problem in any part of the Tennessee Department of Public Health. Both routine and special studies are planned and conducted in cooperation with the division directors concerned. In order that data may be handled with speed and accuracy, punch cards are used extensively.

The service has a pool of statisticians and statistical workers which may be assigned indefinitely to a particular division, or to work on specific projects. The service supervises and maintains all central registers and is responsible for all statistical reports and releases made to outside agencies. The major statistical analyses are made by or with the assistance of the Statistical Service. The chief of the service is chairman of the Departmental Record Committee, which meets bimonthly and approves new forms and reviews old ones.

A program of statistical activities has been developed, placing emphasis on both administrative and research studies according to the relative needs. Important contributions have been made in both fields of endeavor. Cooperation has been given to a special research center established in the Division of Tuberculosis Control. The service has produced many papers and studies in the fields of public health and statistics. In cooperation with other divisions of the health department, training programs have been and are now being conducted for clerks, statisticians, and other public health personnel, including doctors, needing additional orientation on record-keeping and statistical problems.

Figure 6 shows the functional organization of the Tennessee Statistical Service.

TENNESSEE STATISTICAL SERVICE

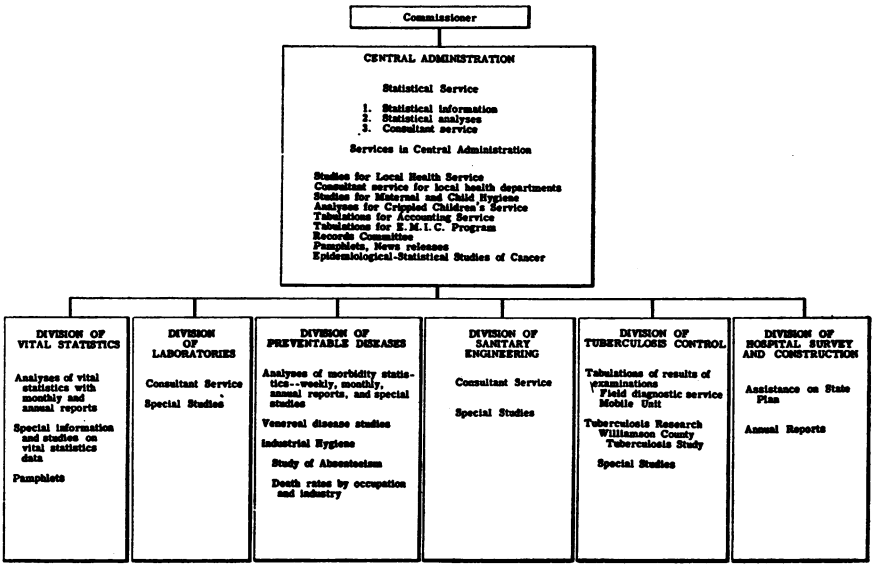


Figure 6

States With a Completely Centralized Statistical Division

Six States [6] have centralized all statistical services, including data collection, in one administrative unit, thus presenting another pattern of administration. Except in California, the directors of the centralized statistical bureaus report administratively to the State health officers. In California the director (or chief of Bureau of Statistics and Records), reports to the chief of the Division of Administration, who also has the Bureau of Business Management, the Bureau of Health Education, and the Office of Recruitment and Training under his supervision.

All the centralized statistical bureaus in these six States are in the beginning stage of their development. All have been established with the intention of centralizing all major statistical operations, and all have made varying degrees of progress toward that end. California has perhaps advanced the most (fig. 7).

The chief of the Bureau of Records and Statistics in California reports administratively to the chief of the Division of Administration who reports to the State Director of Public Health. The major functions of the chief of the Bureau of Records and Statistics may be summarized as follows:

1. Planning the programs for and directing the collection, tabulation, analysis, and presentation of statistics relating to morbidity, mortality, and all other phases of public health;

[6] California, Illinois, Kansas, Louisiana, Oklahoma, Washington.

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

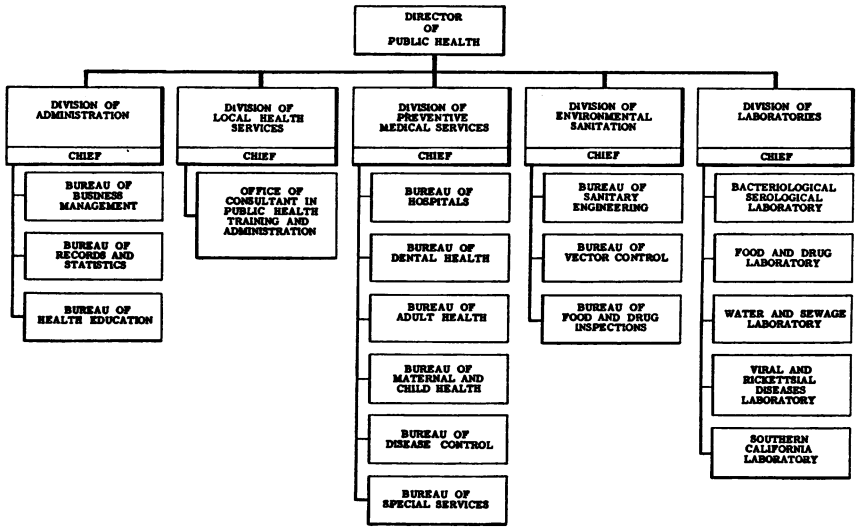


Figure 7

2. Developing records, forms, and procedures for collecting, recording and analysing data on services of the various divisions and bureaus of the State Department of Public Health and local health departments;

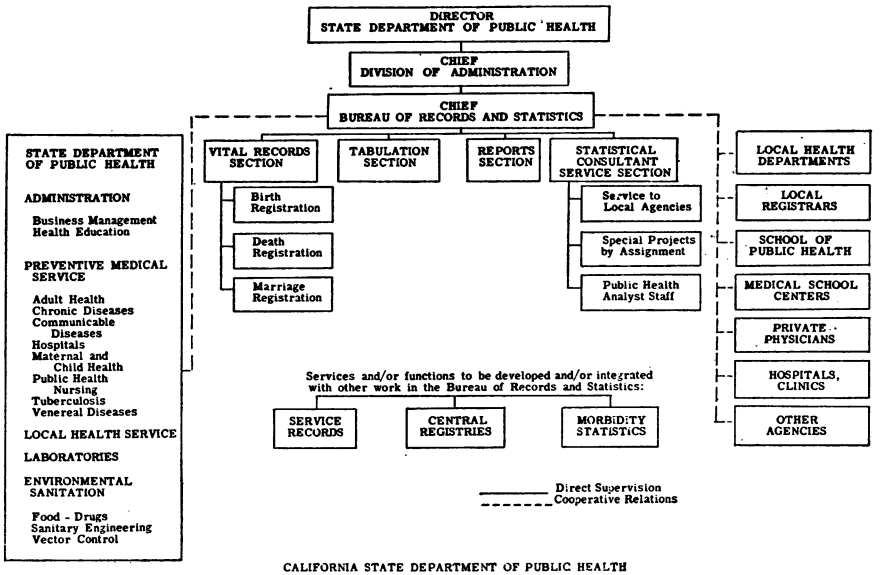
3. Maintaining working relationships with local, State, and national agencies or organizations in gathering, recording, and reporting statistics.

The organization of the California Bureau of Records and Statistics is shown in figure 8.

The Vital Records Section (fig. 9) has complete responsibility for the registration of births, deaths, marriages, and related records, their maintenance and coding, and issuance of certified copies. These functions are performed in the offices at the State Capitol in Sacramento.

The Tabulation Section is located in the offices of the State Department of Public Health in San Francisco, and is a complete tabulating unit designed and equipped to meet the mechanical tabulating needs of the entire department. Current arrangements include plans for tabulating all machinework and routine reports in connection with vital statistics, morbidity, adult health, maternal and child health, venereal disease, tuberculosis, and local health department activities. In addition, through the use of punch cards, central registers will be maintained on cancer, tuberculosis, rheumatic fever, typhoid carriers, and handicapped children.

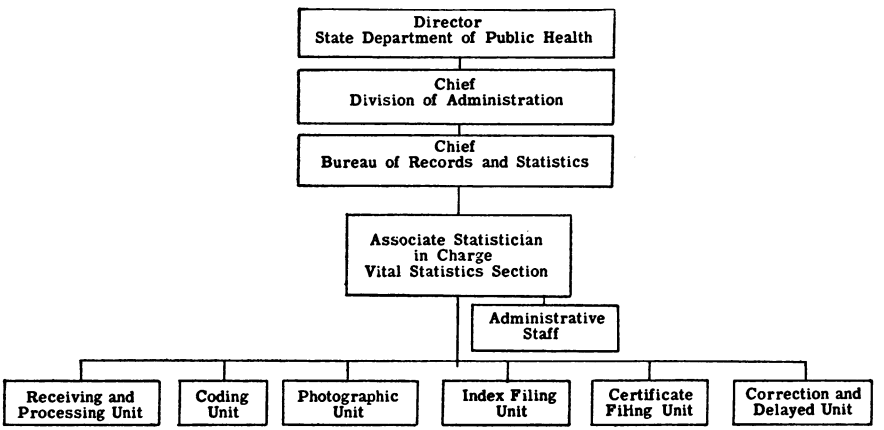
BUREAU OF RECORDS AND STATISTICS



CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

Figure 8

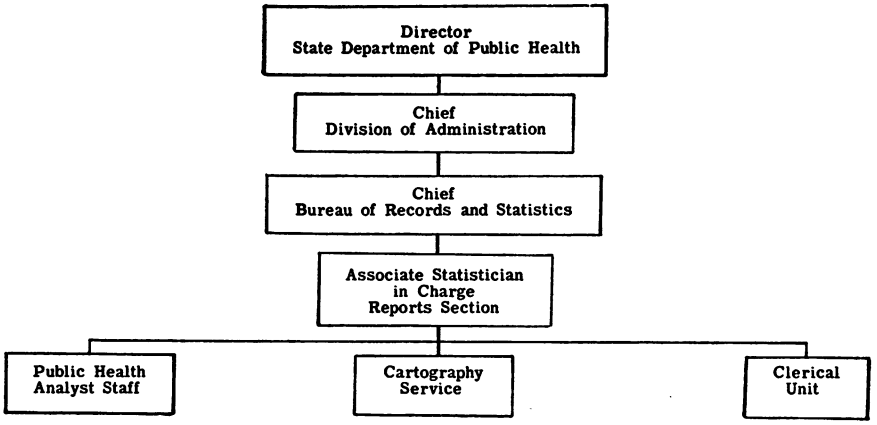
VITAL STATISTICS SECTION



CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH
BUREAU OF RECORDS AND STATISTICS

Figure 9

REPORTS SECTION



California State Department of Public Health
Bureau of Records and Statistics

Figure 10

The Reports Section (fig. 10) is the service section of the Bureau. It provides the major statistical services available to other parts of the Department of Health, exclusive of mechanical tabulation. This section is responsible for:

1. Providing consultation with reference to planning statistical studies, to data collection, methods of analysis, and devices of presentation;
2. Initiating plans for coordinating statistical techniques within the department;
3. Reviewing, indexing, and distributing all statistical data coming from the department or elsewhere;
4. Replying to special requests for statistical data;
5. Maintaining a library of statistical reference and source data;
6. Providing direct services such as typing statistical tables and cartography;
7. Compiling regular (monthly, quarterly, annual, or biennial) and special statistical reports from machine tabulation and other sources;
8. Making special studies and statistical analyses.

The Statistical Consultation Service Section is developing a plan for a fully integrated field consultant service to local health departments on records and statistics. At present, its most important function is to provide technical services for the various bureaus or services.

This service primarily consists of the assignment of public health analysts or statisticians to the bureaus or services. The analysts are assigned after a review of program objectives with the bureau and service chiefs. The assignment may be for an indefinite period of time or for the completion of special projects. The analyst assigned to a bureau or service is responsible administratively to the chief of that bureau or service, but is professionally and technically responsible to the chief of the Bureau of Records and Statistics. As of July 1947, there were 23 persons in professional statistical positions (either statisticians or public health analysts) in the department and 13 were assigned to other bureaus or services. The aim is to achieve, through the coordination of the work of the public health analysts assigned to the various bureaus and services and through periodic program review with bureau and service chiefs, a fully integrated utilization of statistical resources in the department.

The plan to achieve this coordination includes the following:

1. Periodic program reviews by bureau and service chiefs and the chief of Bureau of Records and Statistics;
2. Periodic staff meetings of all statisticians and public health analysts to: (a) present progress reports on statistical activities in each division, (b) discuss current problems of interest to all professional personnel;
3. Supervisory conferences between public health analysts assigned to bureaus and services and the chief of Bureau of Records and Statistics;
4. Provision of consultative and other routine statistical services including tabulating, graphic presentation, etc.

At present there are also personnel working in cooperation with the Division of Local Health Services on records and evaluation of services. Plans are being made for the review of all other records, and the preparation of a departmental record manual is being considered.

The other five States with a centralized statistical division are in varying stages of development. These divisions have progressed to the extent that their classification as a centralized statistical agency is clear-cut both as to function and demonstrated activity. Three, and possibly four, of the States are handicapped because they lack a sufficient number of qualified statisticians. This has been reflected particularly in their inability to spend an adequate proportion of their time on analytical studies. Nearly all these divisions have younger personnel in training to assume greater professional responsibility.

Content and Scope of Statistical Activities and the Role of the Statistician in Health Department Programs

In each of the States where field observations were made, discussions were held with the State health officer, division directors, and other key personnel concerning the conduct and organization of statistical activities within the department.

Without exception, the health officers stressed the increased number of reports and records that are developing, and the amount of personnel and time required to collect and process the data. The majority did not question the value of the reports and records, but expressed concern over the lack of staff time and skills to plan adequately in this field of activity. They felt that adequate planning and coordination would eliminate nonessential items, and could improve administration through increased utilization of the data collected. Several stated, however, that they were unable to see either the necessity for, or the potential utility of, much of the data that were being collected.

The discussions revealed differences of opinion on the content and scope of statistical activities, the role that the statistician is qualified to play in health department programs, and the optimum arrangements for organizing the statistical services. These opinions are of importance, for they reveal fundamental problems that must be considered in training all types of public health personnel, and in determining health department organization. They are presented under the major topics listed above.

There is widespread belief that, in an administrative organization such as a health department, statistics is primarily an administrative or "important clerical" function through which facts are collected, tabulated, and presented, perhaps in graphic form. According to this view, the statistician is employed to assume the responsibility for the detail of those operations. He may or may not participate in the determination of the data to be collected or in the formulation of policies regarding such collection. His responsibility is limited to accurate tabulation, summarization, and perhaps presentation of data in order that they may be analysed and interpreted by the individuals responsible for the operations of the functions involved. His role is that of an administrative assistant who is not responsible for thinking the programs through, but for administering the mechanics involved in obtaining needed factual data.

Others, and perhaps the majority, expressed the opinion that statistics is an important body of knowledge involving professional disciplines and techniques which are applicable to all aspects of public health administration and programming. Such disciplines and techniques are held to be important tools in the definition of health needs, in the formulation of policy, and in the evaluation of efforts to

meet those needs. Statisticians, they assert, should be trained not only in statistics but in public health.

Other questions arose in the discussions on the content of statistics and the role of the statistician. There was agreement that central mechanical tabulating units were desirable if justified on the basis of the volume of data tabulated. Some individuals, however, believed that mechanical tabulation is primarily an administrative function, and as such is not necessarily a part of the functions of the statistician. They maintained that the prerequisites for its successful direction are mechanical knowledge of the machines and general administrative ability.

A larger number of persons felt that tabulating processes are an inherent part of the techniques available to the statistician, and that the supervisor of such a unit should be responsible to a statistician. One of the primary needs in most tabulating units, it was stated, is someone who can visualize the whole tabulating process with respect to any data that are to be tabulated, to prevent errors, and inefficiency by thorough analysis of procedures before tabulations are started.

Another controversial problem is the relationship between registration and analysis of vital records and other statistical functions. Some argue that registration is basically an administrative and legal function which requires interests and skills that are not necessarily statistical, for they require a different kind of training. In most State health departments the direction of registration is a full-time job in itself. The statistical work involved is secondary and can be handled either by statisticians in the bureau of vital records or by an independent statistical unit.

Others argue that the registration functions should be considered a part of the over-all statistical functions of the department. Although the registration of births, deaths, marriages, divorces, etc., is an administrative and legal procedure, it is also a procedure involving the collection of basic statistical data. Accuracy in definitions, uniformity in entries, completeness in coverage, and statistically accurate tabulations are essential if accurate basic indices of health are to be obtained. Furthermore, the data collected must be related to the population and other public health and statistical data.

Arguments Advanced Against a Centralized Organization of Statistical Activities

1. Statistical procedures in a health department are dependent on the specific health problems of the area and the efforts to solve those problems. The centralization of the statistical functions in one unit overemphasizes the importance of statistics, reducing effectiveness because of remoteness from the operational levels. In an organi-

zation where each division is responsible for its own statistical activities, the person or persons responsible for those activities can concentrate full time on the problems of one public health program. As time goes on, a detailed knowledge and understanding of the medical aspects of the program as well as of the needs and problems in administration may be acquired. The removal of the statistician from the operating division tends to circumvent the acquisition of this knowledge and reduce the effectiveness of the statistics.

2. The director of any specific program should have complete responsibility for the administration of that program except for broad policy formulation. He should be permitted to obtain and utilize such statistical data as he wishes, resources permitting, without interference by or reliance on other divisions, or other administrative philosophies.

3. Too large a proportion of the funds appropriated for public health is being expended for administrative "superstructures" at the expense of the personnel and services at operating levels. The creation of a centralized statistical unit would mean the addition of another "superstructure" necessitating greater drains on an already deficient budget. In addition, the establishment of such a unit would mean the employment of more nonmedical personnel who would try to establish more records and reports, requiring more "paper shuffling" and more equipment, reducing the funds and personnel available for the development of local health services.

4. In most organizations centralization has inherent disadvantages which may off-set its more popularly conceived advantages of efficiency, etc. These disadvantages are striking both from the point of view of the operating personnel and the statisticians who are interested primarily in getting "the job done." Statistics is an important program tool and, when need for it is recognized, plans for its use should be effected. In a health department with a centralized statistical unit, such plans may be delayed because other priorities pre-empt the equipment and services available. In addition, considerable time may be lost in writing memoranda and holding conferences. The problem may be further complicated by the need to deal with personnel who are not familiar with the details of the program under consideration.

A central tabulating unit has continual difficulty in establishing priorities, particularly when it is responsible for budgets, financial and pay-roll records, equipment inventories, etc. These operations frequently have the highest priority, and other important statistical operations must be deferred. Another factor is that in many instances special tabulations or trial runs of statistical data are desired and machine time in the central unit may not be available.

If a bureau, a division, or a specific program is responsible for its

own statistical activities, these "bottlenecks" can be eliminated on a more logical basis, and in strict accordance with the director's opinion. He is not forced to exert pressures for, or to exaggerate the importance of, his activities at the expense of other health department activities. He is his own master within the resources available to him.

If the registration of vital records is considered a part of the statistical activities, the placement of that function in a centralized statistical unit is a mistake. The statistician vested with the responsibility for registration will find that he is absorbed in administrative and legal problems with little time left for an analytical and thoughtful approach to the statistical needs of the organization.

Arguments Advanced in Favor of a Centralized Statistical Organization

1. The primary goal of the public health services is to protect the health of the community at large; to achieve it, a generic and not a categorical approach must be made. In most areas of the United States there is an immense gap between the health needs and the financial and personnel resources available to meet those needs. The generic approach necessitates an over-all definition of those needs, and an evaluation of current efforts to meet them. Such definition and evaluation are difficult if not impossible to achieve without central coordination of statistical activities. Someone has to weave an over-all pattern from the data that are available. Most health officers have neither the time nor the skills necessary. A central statistical organization will facilitate this approach.

2. The correlation of statistical data collected by different program divisions is difficult because the personnel involved lack acquaintance with the data available throughout the department and ready access to those data. Such correlations are essential if health needs are to be defined and accomplishments evaluated. For example, much of the data collected by a division of maternal and child health should be related to data on births and deaths collected by the division of vital statistics. The data on nursing activities are of limited usefulness unless related specifically to the activities and problems of the services utilizing public health nurses. All these data should be related to the demographic characteristics of the area. This latter task is difficult because of the infrequency of the census. Special studies and many estimates are needed to establish current relationships. Uniform population indices should be used throughout the department. Central coordination and control are necessary to facilitate such correlations.

3. Most health officers are confronted continually with problems concerning record keeping and statistics. They are asked to approve new procedures which may overlap, conflict with, or duplicate the

procedures of other divisions. Complaints are received about existing procedures and burdens which they impose upon the organization. They receive requests for information which is not available or easily obtained from any single segment of the department. These problems can be met more effectively and easily if they can be referred to qualified personnel in a statistical office having department-wide functions. Such an office can be a coordinating mechanism which simplifies the task of administration.

4. In general, State health departments have insufficient resources to permit the employment of a qualified statistician in each program unit. In fact the budgets of many departments would not permit the employment of more than one statistician. The services of any statistician who is employed should therefore be available to all divisions in the department. The clerks who have the major responsibility for records and reports functions in the various programs, as well as the professional personnel, can profit from the technical direction and guidance that would thus be available. The clerks are competent usually for the immediate job they are doing, but lack the experience and training necessary for dynamic utilization of the statistical techniques that are applicable to the field of public health.

5. Experience indicates that the development of a progressive statistical program is more likely if the person in charge of planning statistical services is not a subordinate of individual program directors. He should be able to discuss the major problems of statistics, their application to a given field, and their relationships to over-all policy on an equal professional footing with other policy making staff members. Then major differences or disagreements on policy may be settled by the health officer. Such an arrangement will facilitate the accomplishment of valid results and serve as a bulwark against the vested interests of individual program directors or competition among them.

6. The statistical services such as coding, editing, tabulating, and graphic presentation can be performed more accurately, economically, and efficiently in a central unit than in widely dispersed units. In the first place, most divisions have an insufficient amount of such work to utilize fully the mechanical tabulating equipment that is needed. Pooling such needs facilitates justification for the rental of such equipment, and lends assurance of its fuller utilization. Secondly, qualified personnel are needed to direct and operate the equipment. If equipment is pooled, the amount of work may be sufficient to justify the employment of full-time trained personnel, and, in turn, should result in more accurate work, efficiently performed at less expense. Thirdly, in many health departments clerical operations in connection with pay rolls, central registers, administrative reporting, etc., could be performed with substantial financial savings through the

utilization of mechanical methods if tabulating equipment were available. Fourthly, the pooling of such operations removes many routine administrative problems from the responsibility of already overworked professional personnel throughout the department.

Summary

A study of statistical activities in the 48 State health departments as of October 1947, indicates that five basic patterns of organization have developed:

1. Eighteen do not have any central statistical organization with functions that cover the entire department, except for the functions concerning records of births, deaths, etc. Each major subdivision of the health department is responsible for all its record keeping, reporting, and statistical functions.
2. Fourteen have established a central tabulating unit as an integral part of the division of vital statistics, with the other statistical functions remaining the responsibility of the individual program directors.
3. Six have established a central tabulating unit apart from the division of vital statistics, with the other statistical functions remaining the responsibility of the individual program directors.
4. Four have placed all their statistical functions in an independent division, with a separate division responsible for the registration of vital statistics.
5. Six have centralized all statistical functions, including the registration of vital statistics, in one division or bureau.

During the study, opinions of many health officers and other key health department personnel were recorded concerning the pros and cons of the various forms of statistical organization. Many diverse views were expressed. One group held that, except for routine services such as tabulating, all statistical activity should be left to the responsibility of the directors of the various operating programs. This opinion was based primarily on the fear that if statistical functions are removed from the operating programs and placed in a central unit their adequacy and usefulness will be diminished. The majority felt that, in general, some form of a centralized statistical unit should be developed because it would facilitate:

1. Over-all analyses of the health needs of the area and the services being offered to meet those needs.
2. Elimination of duplicate and overlapping record keeping and statistical forms and procedures.
3. More economic and efficient administration.
4. More profitable utilization of statistical personnel.
5. Correlation of statistical data among the programs being administered and with other demographic information.

In conclusion, the consensus was that, although the form of organization for statistical activities may vary, depending on a variety of circumstances, coordination and not necessarily centralization of those activities on a department-wide basis is essential.

ACKNOWLEDGMENT

Appreciation is expressed for the cooperation received from the State health officers and members of their staffs in the conduct of this study. Especial appreciation is given to the State health officers for authorizing the use of specific data on organizational structures, and for the helpful advice and criticisms from them and others, including Dr. Halbert L. Dunn, Dr. Antonio Ciocco, and their staffs of the Public Health Service; Dr. Paul Densen of the Veterans' Administration, and Dr. W. Thurber Fales of the Baltimore Health Department.

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Sickness Absenteeism Among Industrial Workers

Third and Fourth Quarters of 1948

By W. M. Gafafer*

The accompanying data on 8-day or longer disabilities experienced by male employees during the third and fourth quarters of 1948 are derived from periodic reports from industrial sick benefit associations, company relief departments, and group health insurance plans. The reports cover approximately 200,000 male workers in various industries.

It will be seen in the table that the third quarter rates for 1948 and 1947 are similar. On the other hand, the 1948 fourth quarter rate (86.2) for sickness and nonindustrial injuries when compared with the corresponding rate for 1947 shows a decrease of 16 percent, the respiratory group of diseases being responsible for approximately half of this decrease. Attention is also directed to the 33-percent decrease

*Principal Statistician, Division of Industrial Hygiene, Bureau of State Services, Public Health Service.
The report for first and second quarters of 1948, and for year 1947 appeared in Public Health Reports 63: 1489–1497 (1948).

in influenza and grippe which effects half of the decrease in the respiratory group of diseases.

The fourth-quarter respiratory rate of 27.3 is the lowest fourth-quarter rate yielded in the 10-years, 1939–48, being almost 40 percent below the 10-year mean of 45.0.

Number of absences per 1,000 males (annual basis) on account of sickness and nonindustrial injuries disabling for 8 consecutive calendar days or longer, by cause; experience of MALE employees in various industries, third and fourth quarters of 1948 [1]

Cause [2]	Number of absences per 1,000 males (annual basis) beginning in specified period						
	Fourth quarter		Third quarter		Year		
	1948	1947	1948	1947	1948	1947	1943–47
Sickness and nonindustrial injuries	86.2	102.7	89.4	88.9	101.4	108.9	131.1
Nonindustrial injuries (169–195)	10.5	10.9	12.8	13.1	12.1	11.8	12.3
Sickness	75.7	91.8	76.6	75.8	89.3	97.1	118.8
Respiratory diseases	27.3	35.9	20.2	18.6	31.8	37.1	52.3
Tuberculosis of respiratory system (13)	.3	.6	.5	.6	.6	.6	.7
Influenza, grippe (33)	7.8	11.7	4.9	4.4	10.2	14.9	21.5
Bronchitis, acute and chronic (106)	5.3	6.6	4.0	3.1	5.8	5.6	8.6
Pneumonia, all forms (107–109)	4.0	3.9	2.3	2.3	4.3	3.8	5.9
Diseases of pharynx and tonsils (115b, 115c)	3.3	3.9	2.7	3.0	3.5	3.9	5.4
Other respiratory diseases (104, 105, 110–114)	6.6	9.2	5.5	5.2	7.4	8.3	10.2
Digestive diseases	15.2	15.4	16.0	16.9	16.5	16.8	18.0
Diseases of stomach except cancer (117, 118)	5.6	5.2	5.2	4.7	5.6	5.2	6.0
Diarrhea and enteritis (120)	1.9	1.7	2.6	2.4	2.1	2.2	2.4
Appendicitis (121)	3.2	3.3	3.5	3.9	3.4	3.6	4.0
Hernia (122a)	1.6	1.9	2.0	2.5	2.3	2.3	2.3
Other digestive diseases (115a, 115d, 116, 122b–129)	2.9	3.3	2.7	3.4	3.1	3.5	3.3
Nonrespiratory-nondigestive diseases	31.0	37.2	37.7	37.0	37.9	39.4	43.6
Infectious and parasitic diseases (1–12, 14–24, 26–29, 31, 32, 34–44) [3]	1.6	1.8	2.2	2.8	2.5	2.5	2.7
Rheumatism, acute and chronic (58, 59)	3.1	4.0	3.5	3.1	4.1	3.8	5.2
Neurasthenia and the like (part of 84d)	1.4	1.4	1.6	1.5	1.6	1.7	2.0
Neuralgia, neuritis, sciatica (87b)	2.1	2.2	2.1	2.3	2.4	2.4	3.1
Other diseases of nervous system (80–85, 87, except part of 84d, and 87b)	1.0	1.7	1.8	1.8	1.5	1.7	1.9
Diseases of heart and arteries, and nephritis 90–99, 102, 130–132)	5.4	6.4	6.0	6.0	6.5	6.9	7.0
Other diseases of genitourinary system (133–138)	2.7	3.1	3.2	2.9	3.0	3.1	3.2
Diseases of skin (151–153)	3.1	3.8	3.7	3.8	3.3	3.5	3.5
Diseases of organs of movement except diseases of joints (156b)	2.2	2.7	2.6	2.4	2.8	2.9	3.5
All other diseases (45–57, 60–79, 88, 89, 100, 101, 103, 154, 155, 156a, 157, 162)	8.4	10.1	11.0	10.4	10.2	10.9	11.5
Ill-defined and unknown causes (200)	2.2	3.3	2.7	3.3	3.1	3.8	4.9
Average number of males	199,931	195,496	202,820	194,801	198,837	194,243	1,116,899

[1] Industrial injuries and venereal diseases are not included.
[2] Numbers in parentheses are disease title numbers from International List of Causes of Death, 1939.
[3] Exclusive of influenza and grippe, respiratory tuberculosis, and venereal diseases.

INCIDENCE OF DISEASE

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

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED APRIL 30, 1949

A slight increase in the incidence of measles was recorded for the country as a whole. A total of 29,437 cases was reported, as compared with 29,165 last week and a 5-year (1944–48) median of 28,426. The largest increase (from 4,059 cases last week to 4,619 currently) was reported in the East North Central area, and the largest decrease (from 1,947 to 1,323), in the West North Central area. The 8 States reporting more than 829 cases each and showing increases are as follows (last week's figures in parentheses): Pennsylvania 2,745 (2,334), New Jersey 2,312 (2,213), Wisconsin 2,004 (1,889), California 1,631 (1,261), Connecticut 1,535 (1,418), Ohio 1,384 (921), North Carolina 1,205 (967), Massachusetts 954 (748). The total reported for the year to date is 402,317 cases (more than for a corresponding period since 1944, 428,804), as compared with a 5-year median of 306,597.

A total of 2,074 cases of influenza was reported, as compared with 2,288 last week and 1,594 for the 5-year median. States reporting currently more than 101 cases (last week's figures in parentheses) are as follows: Maine 304 (last week 3, next earlier week 101), South Carolina 296 (623), Alabama 183 (75), Texas 822 (931).

Of 68 cases of poliomyelitis reported (last week 45, 5-year median 28), only 2 States reported more than 3 cases—Texas 19 (last week 7) and California 14 (last week 5). The total reported since March 19 (average week of lowest seasonal incidence) is 293, as compared with 214 for the same period last year and a 5-year median of 182.

During the week 5 cases of smallpox were reported, 1 each in Kentucky (last week 1), Oklahoma, Colorado, New Mexico (last week 1), and Arizona. Of 6 cases of Rocky Mountain spotted fever, 2 occurred in California and 1 each in Virginia, Oklahoma, Montana, and Wyoming. One case of "Virus X" infection was reported in Idaho.

A total of 9,531 deaths was recorded during the week in 94 large cities in the United States, as compared with 9,522 last week, 9,077 and 9,021, respectively, for the corresponding weeks of 1948 and 1947, and a 3-year (1946–48) median of 9,021. For the first 17 weeks of the year to date the total is 166,421, as compared with 169,914 for the corresponding period last year.

Telegraphic case reports from State health officers for week ended April 30, 1949

[Leaders indicate that no cases were reported]

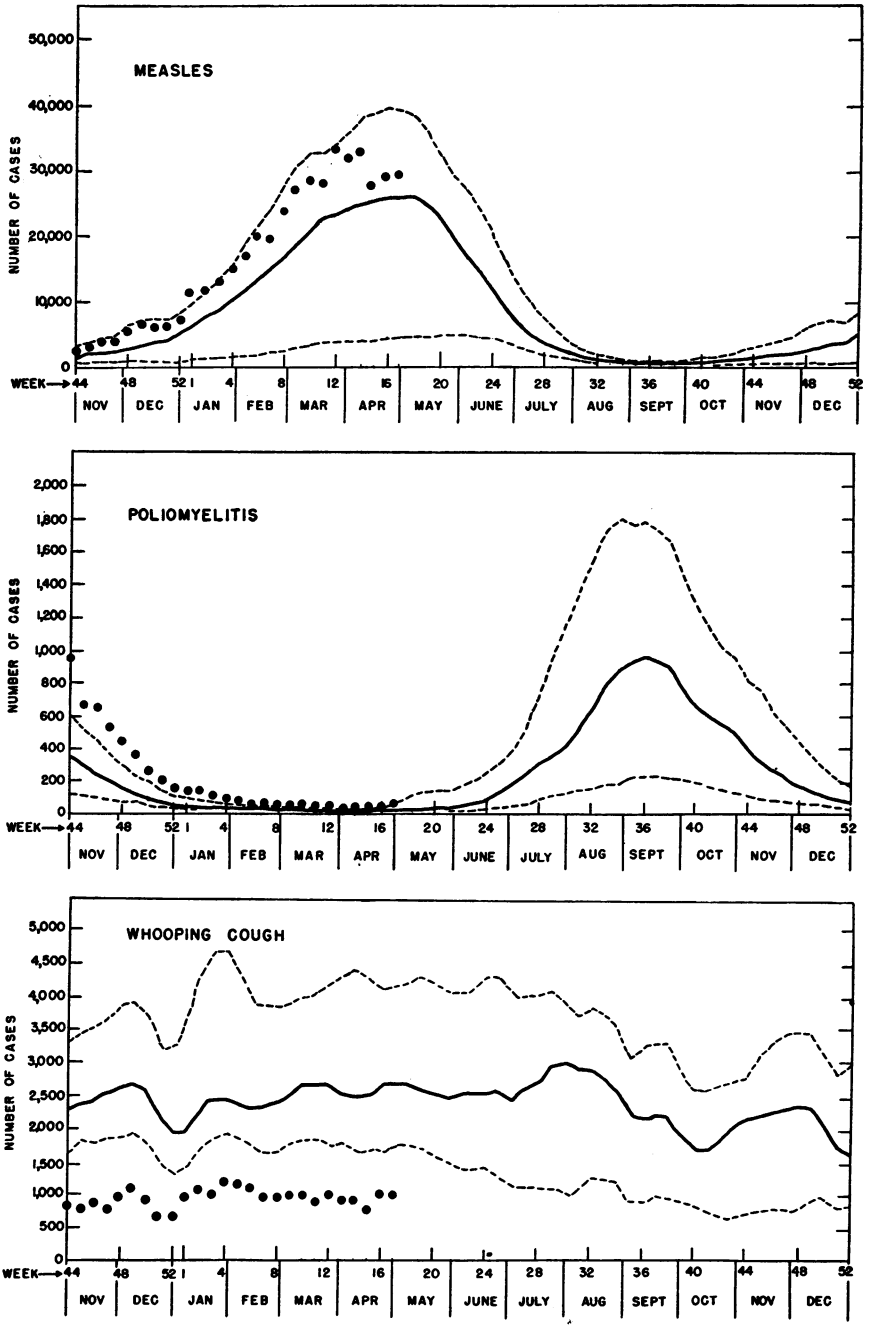
Division and State	Diphtheria	Encephalitis, infectious	Influenza	Measles	Meningitis, meningococcal	Pneumonia	Poliomyelitis	Rocky Mountain spotted fever	Scarlet fever	Smallpox	Tularemia	Typhoid and paratyphoid fever [a]	Whooping cough	Rabies in animals
NEW ENGLAND														
Maine			304	440	1	12			9				19	
New Hampshire			3	155	1	7			17				5	
Vermont				223		6			5				2	
Massachusetts	14	1		954					154			1	60	
Rhode Island				86		6			4			1	1	
Connecticut	4		2	1,535	1	45	2		29			1	11	
MIDDLE ATLANTIC														
New York	11	1	[c] 2	2,322	6	223	2		[d] 161			1	91	5
New Jersey	3	1	4	2,312	2	57	1		110				45	1
Pennsylvania	1		(c)	2,745	8		1		264			2	94	
EAST NORTH CENTRAL														
Ohio	10		2	1,384	5	70	1		243			4	57	18
Indiana	8			229		19	2		54				11	15
Illinois			10	173	3	162	3		107			1	41	5
Michigan [b]			2	829	5	50	1		320			1	33	8
Wisconsin	2		31	2,004	3	4			33				21	
WEST NORTH CENTRAL														
Minnesota	2	1		199	3	9			28					
Iowa		1		96	2	2	1		11			1	6	6
Missouri	1		3	296	1	38			25				4	
North Dakota		2	3	26					1					
South Dakota	1			35										
Nebraska			2	173		2			8					
Kansas	1			498	3	10			9			3	1	
SOUTH ATLANTIC														
Delaware				68					6				4	
Maryland [b]				369	1	45			[d] 44				10	
District of Columbia	2			141	2	14			7				1	
Virginia	3	1	101	841	2			1	9			6	33	1
West Virginia			26	78		7	3		15				14	
North Carolina	2			1,205	5		3		11				27	
South Carolina	2	1	296	529		89			2				25	2
Georgia	1	1	13	657	4	69			16		2	1		7
Florida	2		10	182		6	2		9		1	2	7	2

EAST SOUTH CENTRAL														
Kentucky	4		3	489	3	28	1		23	1		1	11	19
Tennessee	2	1	42	364	1	34			14		2		9	
Alabama	2		183	629	1	128			4		1	1	15	15
Mississippi [a]	3		21	93	1	35	1		3		1	2	8	
WEST SOUTH CENTRAL														
Arkansas	3		47	597	1	43			1		10		19	4
Louisiana			5	28	7	37	2		5		1	4		1
Oklahoma	4		31	446	1	22		1	6	1	1		1	2
Texas	13	1	822	2,310	6	249	19		47		2	3	121	22
MOUNTAIN														
Montana			3	183				1	20		1		8	
Idaho	2		7	201		8	2		[d] 14			1	1	
Wyoming				15		20	1	1	1			1		
Colorado			12	390	2	19			13	1		2		
New Mexico			1	145		34			8	1		1	6	
Arizona	1		53	137		12			7	1			6	
Utah [a]				134		1	2		6		2		13	
Nevada [a]														
PACIFIC														
Washington	3			563	2	6	2		26				11	
Oregon			20	298	2	37	2		15				34	
California	3		10	1,631	2	31	14	2	[d] 97			1	84	4
Total	110	12	2,074	29,437	87	1,696	68	6	2,021	5	24	42	970	
Median, 1944–48	206	9	1,594	28,426	126		28	5	3,624	8	11	65	1,913	
Year to date 17 weeks	2,769	138	65,397	402,317	1,451	39,299	1,215	28	46,112	37	436	722	16,961	
Median, 1944–48	4,633	142	181,831	306.597	3,075		580	16	59,920	167	308	845	36,738	
Seasonal low week ends	(27th) July 10		(30th) July 31	(35th) Sept. 4	(37th) Sept. 18		(11th) Mar. 19		(32nd) Aug. 14	(35th) Sept. 4		(11th) Mar. 19	(39th) Oct. 2	
Since seasonal low week	7,883		101,667	454,710	2,295		293		68,810	52		262	26,994	
Median, 1943–48 [b]	12,199		319,765	341,543	4,579		182		98,491	243		370	64,127	

[a] Period ended earlier than Saturday.
[b] The median of the 5 preceding corresponding periods; for poliomyelitis and typhoid fever the corresponding periods are 1944–45 to 1948–49, inclusive.
[c] New York City and Philadelphia only, respectively.
[d] Including cases reported as streptococcal infection and septic sore throat.
[e] Including paratyphoid fever; currently reported separately, as follows: Rhode Island 1, Michigan 1, Kansas 1, Georgia 1, Florida 2, Louisiana 1, Colorado 2. Salmonella infections, not included, were reported as follows: Massachusetts 1, New York 1.
Alaska: Influenza 7; measles 1; streptococcal sore throat 1.
Territory of Hawaii: Measles 167.

Communicable Disease Charts

All reporting States, November 1948 through April 30, 1949



The upper and lower broken lines represent the highest and lowest figures recorded for the corresponding weeks in the 7 preceding years. The solid line is a median figure for the 7 preceding years. All three lines have been smoothed by a 3-week moving average. The dots represent numbers of cases reported for the weeks of 1949.

TERRITORIES AND POSSESSIONS

Panama Canal Zone

Notifiable diseases—January 1949.—During the month of January 1949, certain notifiable diseases were reported in the Panama Canal Zone and terminal cities as follows:

Disease	Residence [1]									
	Panama City		Colon		Canal Zone		Outside the zone and terminal cities		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Chagas disease						1				1
Chickenpox	21		2				3		26	
Diphtheria	4	1							4	1
Dysentery:										
Amebic	1		1		1		3		6	
Bacillary					1				1	
Hepatitis, infectious							1		1	
Malaria [2]	6	1	2		10		95	2	113	3
Measles					1				1	
Meningitis	3			1	1				4	1
Mumps	2		1		1				4	
Pneumonia		6			12	1		1	[3] 12	8
Poliomyelitis					1		2		3	
Tetanus	1								1	
Tuberculosis		22		6	5	3		2	[3] 5	33
Typhoid fever	1		1				3	1	5	1
Whooping cough								1	(3)	1
Yaws							1		1	

[1] If place of infection is known, cases are so listed instead of by residence.
[2] 3 recurrent cases.
[3] Reported in the Canal Zone only.

Virgin Islands

Notifiable diseases—January-March 1949.—During the months of January, February, and March, 1949, cases of certain notifiable diseases were reported in the Virgin Islands of the United States as follows:

Disease	January	February	March	Disease	January	February	March
Cancer		2	1	Ophthalmia	1		
Chickenpox	6	5	15	Pneumonia (lobar)		2	1
Gonorrhea	22	11	13	Septic sore throat	3		
Hookworm disease	2			Syphilis	13	14	9
Meningitis			4				

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended April 9, 1949.—During the week ended April 9, 1949, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		24	3	158	502	21	28	48	250	1,034
Diphtheria				4	2	1		1		8
Dysentery, bacillary				1					1	2
German measles				419	144		211	35	16	825
Influenza		88			3	5				96
Measles		271	58	98	171	250	173	322	281	1,624
Meningitis, meningococcal				1		1				2
Mumps		116	17	76	278	40	16	11	132	686
Poliomyelitis				1	1	1				3
Scarlet fever		7	1	109	103	3		9	14	246
Tuberculosis (all forms)		13	8	93	40	24	17	31	49	275
Typhoid and paratyphoid fever			1	6	1				1	9
Undulant fever					2					2
Venereal diseases:										
Gonorrhea		7	6	78	68	26	22	24	56	287
Syphilis		3	12	55	46	11	4	4	20	155
Whooping cough		30		85	33	16	1	1		166

JAPAN

Notifiable diseases—4 weeks ended March 26, 1949, and accumulated totals for the year to date.—For the 4 weeks ended March 26, 1949, and for the year to date, certain notifiable diseases were reported in Japan as follows:

Disease	4 weeks ended March 26, 1949		Total reported for the year to date	
	Cases	Deaths	Cases	Deaths
Diphtheria	1,473	122	4,957	513
Dysentery, unspecified	211	47	507	140
Encephalitis, Japanese "B"		1	2	1
Gonorrhea	13,906		43,185	
Influenza	245		636	
Malaria	110	3	309	8
Measles	16,167		31,586	
Meningitis, epidemic	163	41	380	94
Paratyphoid fever	96	5	429	13
Pneumonia	16,547		46,506	
Scarlet fever	320	2	1,158	19
Smallpox	13	1	16	1
Syphilis	17,033		49,517	
Tuberculosis	32,802		95,311	
Typhoid fever	257	45	1,155	136
Typhus fever	6	1	60	2
Whooping cough	5,535		17,135	

NOTE.—The above figures have been adjusted to include delayed and corrected reports.

FINLAND

Notifiable diseases—February 1949.—During the month of February 1949, cases of certain notifiable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	7	Paratyphoid fever	54
Diphtheria	143	Poliomyelitis	3
Dysentery	15	Scarlet fever	270
Gonorrhea	674	Syphilis	110
Malaria	1	Typhoid fever	34

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

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

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

Cholera

India—Calcutta.—During the week ended April 16, 1949, 265 cases of cholera, with 74 deaths, were reported in Calcutta, India.

Plague

Basutoland.—During the week ended February 5, 1949, 1 fatal case of plague was reported in Mohale's Hoek District, Basutoland.

Belgian Congo—Stanleyville Province.—During the week ended April 9, 1949, 1 fatal case of plague was reported in the village of Mange, west of Blukwa, Stanleyville Province, Belgian Congo.

China—Chekiang Province—Wenchow.—On April 5–6, 1949, 2 cases of plague were reported in Wenchow, Chekiang Province, China.

India.—For the week ended April 16, 1949, plague was reported in certain cities in India as follows: Calcutta 12 cases, Cawnpore 20 cases, with 2 deaths.

Indochina (French)—Cochinchina.—During the week ended April 9, 1949, 5 fatal cases of plague were reported in Cochinchina, French Indochina. The following week (week ended April 16), 1 fatal case was reported in this State.

Burma—Moulmein.—During the week ended April 9, 1949, 2 cases of plague were reported in Moulmein, Burma.

Smallpox

Gambia—Bathurst.—During the period February 5–April 16, 1949, 35 cases of smallpox were reported in Bathurst, Gambia.

Great Britain—England.—Information dated April 28, 1949, states that 11 confirmed cases of smallpox, 5 of them fatal, occurred among the passengers who were on board the steamship *Mooltan* when she arrived at the Port of London on April 2, with the body of a man aboard who died of the disease at sea. These cases are reported to have occurred at the following places: Port of London 1 (fatal), Paddington 2 (1 fatal), St. Pancras 1, Isle of Axholme 1 (fatal), Liverpool 1, Wembley 1 (fatal), Sutton and Cheam 1, Torquay 1 (fatal), Aylesbury 1, Richmond 1. No confirmed case has been reported in any person who was not on board the vessel, but contacts are still under observation, and the Ministry of Health is said to believe there is still some possibility of cases appearing at Liverpool, Richmond, and Aylesbury.

India—Bombay.—For the week ended April 16, 1949, 168 cases of smallpox with 38 deaths were reported in Bombay, India.

Indochina (French)—Laos State.—During the week ended April 9, 1949, 54 cases of smallpox, with 12 deaths, were reported in Luang Prabang Province, Laos State, French Indochina.

Java—Batavia.—For the week ended April 16, 1949, 205 cases of smallpox were reported in Batavia, Java.

Korea.—During the week ended March 19, 1949, 409 cases of smallpox, with 45 deaths, were reported in Korea (period of occurrence not specified).

Republic of the Philippines—Mindoro Island.—During the week ended January 29, 1949, 2 cases of smallpox were reported in Mindoro Island, Philippine Islands.

Typhus Fever

Egypt.—During the week ended April 2, 1949, 40 cases of typhus fever were reported in Egypt.

Ethiopia.—Delayed report: During the period December 1–20, 1948, 50 cases of typhus fever were reported in Ethiopia, 45 of which were reported from Shoa Province.

Korea.—During the week ended March 19, 1949, 102 cases of typhus fever with 9 deaths were reported in Korea (period of occurrence not specified).

DEATHS DURING WEEK ENDED APR. 23, 1949

[From the Weekly Mortality Index, issued by the National Office of Vital Statistics]

	Week ended Apr. 23, 1949	Corresponding week, 1948
Data for 94 large cities of the United States:		
Total deaths	9,521	9,226
Median for 3 prior years	9,502	
Total deaths, first 16 weeks of year	156,890	160,837
Deaths under 1 year of age	638	662
Median for 3 prior years	662	
Deaths under 1 year of age, first 16 weeks of year	10,553	11,079
Data from industrial insurance companies:		
Policies in force	70,482,786	71,079,535
Number of death claims	13,524	13,134
Death claims per 1,000 policies in force, annual rate	10.0	9.7
Death claims per 1,000 policies, first 16 weeks of year, annual rate	9.7	10.5

Notifiable Diseases, Fourth Quarter, 1948[1]

The figures in the following table are the totals of the monthly morbidity reports received from State health authorities for October, November, and December, 1948. These reports are preliminary and the figures are more or less incomplete and subject to correction by final reports. The figures may be assumed to represent the civilian population only, although in some instances a few cases in the military population may be included. The comparisons made are with similar preliminary reports; but, owing to population shifts in many States since the 1940 census, the figures for some States may not be comparable with those for prior years, especially for certain diseases. Each State health officer has been requested to include in the monthly report for his State all diseases that are required by law or regulation to be reported in the State, although some do not do so. The list of diseases required to be reported is not the same for each State. Only 11 of the common communicable diseases are notifiable in all the States. In some instances cases are reported, in some States, of diseases that are not required by law or regulation to be reported and the figures are included although manifestly incomplete. There are also variations among the States in the degree of, and checks on, the completeness of reporting of cases of the notifiable diseases; therefore comparisons as between States may not be justified for certain diseases. As compared with the deaths, incomplete case reports are obvious for such diseases as malaria, pellagra, pneumonia, and tuberculosis, while in many States other diseases, such as puerperal septicemia, rheumatic fever, and Vincent's infection, are not reportable.

In spite of these and other deficiencies inherent in morbidity reporting, these monthly reports, which are published quarterly and annually in consolidated form, have proved of value in presenting early information regarding the reported incidence of a large group of diseases and in indicating trends by providing a comparison with similar preliminary figures for prior years. The table gives a general picture of the geographic distribution of certain diseases, as the States are arranged by geographic areas.

Leaders are used in the table to indicate that no case of the disease was reported.

Consolidated monthly State morbidity reports for October, November, and December 1948

Division and State	Anthrax	Chickenpox	Conjunctivitis[2]	Diphtheria*	Dysentery, amebic	Dysentery, bacillary	Dysentery, undefined	Encephalitis, infectious	German measles	Hookworm disease	Influenza	Malaria[3]	Measles*	Meningitis, meningococcal*	Mumps	Ophthalmia	Pellagra	Pneumonia, all forms
NEW ENGLAND																		
Maine		680		8		1			35		10		2,000	3	368			120
New Hampshire		368							6		15		329	3	280			21
Vermont		1,123		2					225		2		1,181		211			14
Massachusetts	1	5,384		113	1	10		10	189			2	8,122	18		[4]93		[5]262
Rhode Island		255		5		3			4		1	1	275	5	453			37
Connecticut		2,494	31	4	5	2		3	52	1	16		524	22	1,775			479
MIDDLE ATLANTIC																		
New York	1	4,480	24	74	103	202		8	[6]71	[6]31	[6]35	17	3,136	64	[6]431	[4]5		2,320
New Jersey	1	6,762		17	9	1			162		34	9	977	26	1,715	[4]2		668
Pennsylvania	3	5,831		97	6	9		5			35		2,580	57	1,258			957
EAST NORTH CENTRAL																		
Ohio		4,023	3	97	10	22	6		85		21		399	40	753	[4]123		537
Indiana		761		130	11	1		9	9		136		230	10	251			167
Illinois		4,395	12	17	105	49		9	106	1	42	[7]4	261	53	1,479	21		1,136
Michigan		4,349	39	47	124	68			120	12	25	5	2,912	25	1,456	[4]1		469
Wisconsin		6,270		4	5			1	203		117		2,289	19	1,869			[5]66

WEST NORTH CENTRAL																	
Minnesota		637	107	25	13	12	2	2		2	5	20	92	19			73
Iowa		1,010		14	3			4	1				133	14	706		27
Missouri		722		51			18	1			40	3	611	14	206		178
North Dakota		302	1	12				6			7		415	3			193
South Dakota		193		5				9			1		21	3	30		10
Nebraska		226		11	1						115		65	2	297		25
Kansas		819	7	30		4		2	21		28	1	247	6	312		128
SOUTH ATLANTIC																	
Delaware		33		5									23	1	4		5
Maryland		568		32	2	5	46	2	28		16	1	2,217	16	134	2	303
District of Columbia		123		8	3	54							89	2	27		167
Virginia		908		166	3		1,177	4			4,146	5	1,619	21	492		563
West Virginia		320		60		4		1	4		358		133	17	98		44
North Carolina				177	9	14		2				9	640	15			
South Carolina		237		282	22	97		7	32	503	3,212	487	80	8	161	[4]11	96	798
Georgia		218	5	277	6	80	4	2		746	156	27	224	12	414		18	447
Florida		132		136	55	26	16	3	16	1,305	65	21	373	18	198	[4]8	3	189
EAST SOUTH CENTRAL																	
Kentucky	1	381	3	177	3	40			60		17	7	586	26	152			292
Tennessee		476		141	72	16	6	6	23	4	223	10	317	14	366	[4]10	4	445
Alabama		356		372	2				21		210	35	603	21	102		1	374
Mississippi				109	30	59		3		1,404		28	136	8		[4]8		221
WEST SOUTH CENTRAL																	
Arkansas		410		62	76	29	629		18	5	1,293	101	867	8	174	2		305
Louisiana		64		57	241	1		3		187	45	3	176	17	73	2	1	314
Oklahoma		378		54	10	7	19	2	13	1	540	41	277	8	296		5	194
Texas				285	143	6,098	3,438					775	4,947	51		[4]21		1,619
MOUNTAIN																	
Montana		1,029	32			1			27		47		90	4	116			36
Idaho		324	6	9	2				53		184		262	4	325			101
Wyoming		443	2	4					4		29		449	1	150			21
Colorado		1,109		22	3	36			41		402	1	954	6	375			242
New Mexico	1	149	3	20	7	19	19		14		21	1	387	2	109	2	1	141
Arizona	1	222		50	24	165	11	1	48		1,208	4	588	6	72	[4]2	2	199
Utah		1,039		37	1	2			29		42	1	1,522	3	242			41
Nevada		26	6				5		25				45		5		1	9
PACIFIC																	
Washington	1	2,183	39	23	4		90		127		92		1,221	19	1,473			206
Oregon			2	23	51	26	3	1				1	1,730	5				219
California	1	5,146		78	89	190		11	744		124	6	2,574	68	5,853	1		[5]289
Total	11	67,358	322	3,369	1,254	7,353	5,489	117	2,616	4,202	13,115	1,626	49,928	787	25,261	314	133	15,671
Fourth quarter 1947	25	50,129	543	4,359	831	4,725	2,143	153	2,017	3,502	32,724	2,893	31,642	701	27,665	291	324	17,316
Median 1943–47	12	61,310	224	5,458	867	5,898	1,897	145	2,316	3,812	38,579	9,911	25,449	1,357	25,042	365	799	23,357
Alaska		86							11		17		1	4	55			6
Hawaii Territory		265	5	1	3	14			83	5	6	3	2,286		363			[5]19
Panama Canal Zone [6]		35		4	14	18			2			496	11	11	19			[6]63

See footnotes on page 656.

Consolidated monthly State morbidity reports for October, November, and December 1948—Conitnued

Division and State	Poliomyelitis*	Rabies in man	Rheumatic fever	Rocky Mountain spotted fever	Scarlet fever*	Septic sore throat	Smallpox*	Tetanus	Trachoma	Trichinosis	Tuberculosis, all forms*	Tuberculosis, respiratory	Tularemia	Typhoid fever	Paratyphoid fever	Typhus fever, endemic	Undulant fever	Vincent's infection	Whooping Cough*
NEW ENGLAND																			
Maine	11				207	17					110	99		2	4		1	3	197
New Hampshire	2				70	28					52							12	87
Vermont	1				91	2								2	1			2	141
Massachusetts	38				1,410	26		3	2	6	684	636		6	15		3		766
Rhode Island	2		33		85	10		2		2	131	118		4	6		2	6	72
Connecticut	35				301	67		6		7	414	376		3	[12] 3		18		95
MIDDLE ATLANTIC																			
New York	444				[10] 1,573	([11])		9		42	3,542	3,353		38	[12] 20	8	50		1,427
New Jersey	222				621	38		4		3	779		1	9			18		534
Pennsylvania	236		369	2	796					3	1,133		5	34	[12] 8		20		1,138
EAST NORTH CENTRAL																			
Ohio	268		32		2,147	4		3	1	1			16	38	6		38	4	426
Indiana	99	1	6		473	3		2			481	460	36	15	1		13	3	149
Illinois	327		18	1	1,219	16		2	1	1	1,686	1,572	27	18	1		119	38	369
Michigan	265		129		1,699	160		3		1	1,681		3	17	[12] 83		61		325
Wisconsin	254				554	39					476			2			62		297
WEST NORTH CENTRAL																			
Minnesota	561		16		539	49		2			795		2	6	[12] 1		57		45
Iowa	603				296	3					55			5			80		124
Missouri	113		16		269	13		2	244		719		18	20	1	1	17		72
North Dakota	30		1		119		1		3		82	78		2			2	7	37
South Dakota	717				31			1	15		86		1		1		17	1	1
Nebraska	191		1		178		1				86		1	1			16		20
Kansas	84				310	7		3	1		244	239	5	5	1		18	19	98
SOUTH ATLANTIC																			
Delaware	10				25						92	92		2			1		2
Maryland	48		24	2	187	19		1			703	373	4	13	1	1	13	4	190
District of Columbia	51				69					1			1		6				42
Virginia	154			4	260	568		1			939	924	13	25	3	1	13		244

West Virginia	49		4		269	9					545	539		22			1		212
North Carolina	296			8	455	6					958	933	17	18	3	22	4		196
South Carolina	68		56	1	97	1,613		1			122		5	10	6	7	5		190
Georgia	48		19	4	377	62		9			704	673	20	29	10	64	22	22	27
Florida	81	1			102	60		36	34		661	661	6	21	[12] 46	58	19	26	62
EAST SOUTH CENTRAL																			
Kentucky	45	2	8		601	17		1	41		503	501	3	14	3	7	1	4	225
Tennessee	99	2	11	1	703	113		11	1		1,599		12	37	1	5	10	50	172
Alabama	49			4	298			12			633		7	13	3	33	9		71
Mississippi	31		10		131			2			717	702	11	24		9	12		36
WEST SOUTH CENTRAL																			
Arkansas	22		5		88	260		10	34		579	573	19	22	2	3	8		130
Louisiana	44	1	8		96	12		6			784	752	10	33	4	15	9		15
Oklahoma	65			5	227	50			100		497	491	19	12	[12] 2		27		28
Texas	309				312	740			15		4,202		8	33	23	81	126		814
MOUNTAIN																			
Montana	22		1		162	19	1		6	3	125	120	2	4					58
Idaho	25		15		65	93	4	1	28		64			1			9	6	34
Wyoming	16		1		38	3					21	17	8	1			1	8	10
Colorado	30		17		154	69		1			204		4	11	4		35	8	114
New Mexico	20		5		88	7			14		[13] 290	[13] 275	2	76					37
Arizona	51		26		41	192			76		560	545	1	11	2		2		59
Utah	[13] 149		18		69	2			1		[13] 45	[13] 43	[13] 16		[12] 5		[13] 7		126
Nevada	15				30	6			1		12							1	2
PACIFIC																			
Washington	180		97		399	31					725		1	4	[12] 6		5	45	102
Oregon	103		12	1	233	51		1	5		189	174		7	2		1		126
California	2,429		127	[13] 2	958	187		9	20	8	2,138	1,989		40	43	2	34		605
Total	9,012	7	1,085	35	19,522	4,671	7	144	643	78	31,847	17,308	304	710	[12] 327	317	986	269	10,349
Fourth quarter 1947	3,335	5	916	60	19,273	4,054	20	107	348	110	30,957	17,533	252	717	273	332	1,396	560	32,131
Median 1943–47	4,008	6	[14] 1,021	32	32,260	2,441	67	108	443	67	28,091	16,267	252	892	184	1,494	1,262	576	27,460
Alaska			10		26	19					117	109						2	3
Hawaii Territory			4		4	1		4	2		230	218				1	10	1	18
Panama Canal Zone [3]	8							2			[9] 9			5			1	1	[9] 2

See footnotes on page 656.

Footnotes for Table on Pages 652 to 655

*Diseases marked with an asterisk (*) are reportable by law or regulation in all the States, including the District of Columbia. Typhoid fever is reportable in all the States; paratyphoid fever in all except 6 States. Syphilis is reportable in all the States and the District of Columbia but is not included in the table. Some States have increased and some have reduced the list of reportable diseases since the latest published compilation of reportable diseases (PUBLIC HEALTH REPORTS 59:317-340) (Mar. 10, 1944. Reprint No. 2544).

[1] For reports for first, second, and third quarters of 1948 see pp. 950, 1,424, and 224 of the PUBLIC HEALTH REPORTS for July 16 and October 29, 1948, and February 18, 1949, respectively.
[2] Includes cases of kerato and suppurative conjunctivitis and of pink eye.
[3] In a few States practically all cases contracted outside the United States.
[4] Reported as ophthalmia neonatorum.
[5] Lobar pneumonia only.
[6] New York City only.
[7] Does not include cases artificially induced.
[8] Includes the cities of Colon and Panama.
[9] In the Canal Zone only.
[10] Includes septic sore throat.
[11] Included in scarlet fever.
[12] Includes cases reported as salmonella infection.
[13] Includes nonresident cases.
[14] 3-year (1945–47) median.

The following list includes certain rare conditions, diseases of restricted geographical distribution, and those reportable in or reported by only a few States; last year's figures in parentheses (where no figures are given, no cases were reported last year):

Actinomycosis: Maine 1, Michigan 2, Minnesota 2 (1), Tennessee 1.
Botulism: Minnesota 1, Colorado 5 (1), California 3.
Cancer: North Dakota 206, Kansas 1,194, South Carolina 225, Georgia 55, Florida 428, Kentucky 18, Tennessee 1,019, Alabama 896, Arkansas 154, Louisiana 520, Montana 353, Idaho 164, New Mexico 150, Utah 46 (includes nonresidents), Nevada 3.
Coccidioidomycosis: Kansas 1, Arizona 9 (2), California 18 (16).
Dengue: South Carolina 1 (2), Mississippi 1, Texas 4 (4).
Dermatitis: New Hampshire 1, Missouri 9, Kentucky 21 (mycotic dermatitis), Arkansas 1.
Diarrhea: Rhode Island 1, Connecticut 5, New York 70 (26), Pennsylvania 120 (23), includes gastroenteritis, Ohio 340 (130), includes enteritis, Indiana 1 enteritis, Illinois 17 (8), Michigan 31 (5), Iowa 1, Kansas 48 (40), includes enteritis, Maryland 12 (5), South Carolina 2,130 (1,831), Florida 35 (34), Kentucky 14 (36), includes gastroenteritis, Oklahoma 2 (2), Idaho 73 gastroenteritis, Colorado 4 (1), includes enteritis, New Mexico 95 (68), California 35 (32), Alaska 23, includes enteritis.
Dog bite: Massachusetts 2,213, Illinois (all animal bites) 2,601 (2,638), Michigan 1,613 (1,624), Arkansas (all animal bites) 112 (125).
Encephalitis (other forms): Maine 1, Connecticut 2, New York 3, Ohio 2, Michigan 9, Nebraska 1, Maryland 4, Florida 21, Idaho 2, Colorado 2, New Mexico 6, Washington 7.
Erysipelas: New Hampshire 1, Connecticut 5, Ohio 3, Indiana 1, Illinois 70, Michigan 28, Wisconsin 11, South Dakota 2, Kansas 1, Maryland 7, Florida 13, Kentucky 3, Tennessee 8, Arkansas 5, Louisiana 1, Montana 1, Idaho 2, Colorado 6, Nevada 1, Oregon 7, Hawaii Territory 2.
Food poisoning: Maine 1, New York 434, New Jersey 3 (2), Ohio 8 (13), Illinois (includes cases reported as food infection) 48 (8), Minnesota 146 (54), Kansas 1, Florida 13, Louisiana 4 (6), Idaho 2 (1), Colorado 61 (2), New Mexico 13, Washington 41 (55), Oregon 11 (12), California 256 (166).
Granuloma inguinale: Florida 251 (72), Tennessee 13 (7), Mississippi 18 (71), Louisiana 38 (57), Idaho 1.
Impetigo contagiosa: Vermont 1, Rhode Island 1, New York 36, Ohio 85 (23), Indiana 10 (36), Illinois 13 (17), Michigan 637 (668), Missouri 32 (17), North Dakota 4 (2), Nebraska 9 (4), Kansas 17 (14), Maryland 1, Kentucky 14 (24), Montana 39 (9), Idaho 21 (19), Wyoming 7 (12), Colorado 8 (25), Nevada 26 (59), Washington 284 (521), Alaska 3 (1), Hawaii Territory 14 (37).
Jaundice (including hepatitis and Weil's disease): Maine 7 (3), New York 52 (99), Pennsylvania 19 (23), Ohio 2, Illinois 8 (9), Minnesota 4 (15), Maryland 4, South Carolina 2 (8), Florida 3 (1), Kentucky 18 (4), Tennessee 2 (8), Louisiana 1, Idaho 6 (6), Arizona 6, Washington 2, Oregon 11 (17), California 46 (39), Hawaii Territory 3 (2), Panama Canal Zone 4.
Leprosy: New York 2 (4), Florida 3 (2), Louisiana 1 (1), Texas 2 (2), Arizona 1, California 2 (1), Hawaii Territory 7 (6).
Lymphogranuloma venereum: Florida 58 (31), Kentucky 1, Tennessee 13 (15), Mississippi 23, Louisiana 15 (34), Utah (nonresident) 1.
Mononucleosis: Connecticut 23, Michigan 42, Minnesota 69, Maryland 11, South Carolina 4, Kentucky 7, Tennessee 10, Idaho 1.
Pellagra: Virginia 1, South Carolina 96, Georgia 18, Florida 3, Tennessee 4, Alabama 1, Louisiana 1, Oklahoma 5, New Mexico 1, Arizona 2, Nevada 1.
Psittacosis: Pennsylvania 1, Alabama 1, Washington 1, California 6 (4).
Puerperal septicemia: Mississippi 1, Arkansas 1.
Rabies in animals: New York 143 (191), Pennsylvania 27, Ohio 197 (152), Indiana 162 (72), Illinois 18 (16), Michigan 63 (55), Wisconsin 1, Minnesota 1 (1), Iowa 9, Kansas 6 (13), Virginia 29, South Carolina 42 (33), Georgia 85, Florida 75 (110), Kentucky 152, Alabama 67 (88), Arkansas 22 (24), Louisiana 4 (6), Oklahoma 37, Texas 350 (208), Arizona 4 (50 delayed reports), Utah 1 (1), California 51 (90).
Rat bite fever: Ohio 1.
Relapsing fever: Texas 15 (15), California 1 (5).
Rickettsialpox: New York 31.
Ringworm disease (including ringworm of the scalp): Connecticut 11, Pennsylvania 31 (1,149), Ohio 36 (29), Indiana 22, Illinois 849 (346), Michigan 546 (638), Minnesota 13 (12), Iowa 18 (126), Missouri 9 (12), Kansas 42 (7), Maryland 1, Georgia 35, Kentucky 18 (26), Montana 3 (2), Idaho 17 (20), New Mexico 6, Utah 10 (105), Nevada 1, Washington 393 (410), Oregon 3.
Scabies: Rhode Island 14 (4), Pennsylvania 109 (134), Ohio 37 (53), Indiana 2 (3), Michigan 383 (378), Missouri 23 (20), Kansas 17 (39), Maryland 2, Kentucky 38 (37), Montana 43 (24), Idaho 51 (59), Wyoming 9 (15), Nevada 2 (11), Alaska 4 (1).
Schistosomiasis: New York (City) 11.
Silicosis: New Hampshire 1, Arkansas 1, Idaho 8, Colorado 2, New Mexico 4 (2).
Yaws: Panama Canal Zone 11.
Yellow fever: Panama Canal Zone 8 cases (5 confirmed), 6 deaths, Nov. 11-Dec. 30, 1948.
Lymphocytic choriomeningitis: Massachusetts 4 (1), Rhode Island 2, Indiana 1, Tennessee 3 (4).