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MENTAL HYGIENE IN THE STATE HEALTH DEPARTMENT

By VICTOR H. VOGEL, *Passed Assistant Surgeon, United States Public Health Service*

It is not necessary to agree with psychoanalytical methods of treatment to quote with approval a statement made by Freud 22 years ago:

> But one day the conscience of society will awaken, and we shall realize that * * * man has the same claim to mental treatment that he now has to surgical aid. And we shall also come to see that the neuroses menace the health of the people no less than does tuberculosis, and that, like tuberculosis, the neuroses cannot be left to the ineffectual care of the individual himself. When that time comes, institutes and consultation centers will be established and staffed with * * * trained physicians, so that men who would otherwise give way to drink, women who might break down as a result of overwhelming deprivations, and children whose choice would be limited to delinquency or neurosis, may be strengthened * * * to resist such unhealthy tendencies and * * * become capable of social achievements * * *.[1]

Health officers have been concerned with the conservation and prolongation of life. Remarkable results have been obtained; the average expectation of life at birth has risen from 38 years to 61 years since 1787. But should not health officers be concerned with the quality of life as well as the quantity of life? We deal not with pigs or chickens, but with human beings, individuals who have emotions, who have likes and dislikes, who experience happiness or sorrow and elation or depression. Not only do we experience these feelings, but they affect directly our capacity to take our place in the community as contented, healthy, law-abiding, self-respecting, self-supporting citizens. Mental hygiene is concerned with the abilities of people to adapt themselves to life; to live happier, more productive lives. As a matter of fact, from the standpoint of longevity alone, mental disease is a matter of public health concern because "* * * the mortality rates of the mentally diseased are at least five times as high as the rate for the general population * * *."[2]

Should deaths by suicide concern the health officer less than deaths from typhoid or diphtheria? Is an emotionally dead person maintained for forty years in a mental institution less of a community problem

[1] Freud: Address given in 1918 at the International Psychoanalytic Congress in Budapest. The Psychoanalytic Quarterly, 9: 164 (1940).

[2] Falk, I. S., and Hirsch, N. D. M.: Social security measures as factors in mental health programs. Publication No. 9 of The American Association for the Advancement of Science, p. 194.

than a person dead of smallpox? The productive labor of both is permanently lost to the community but the psychotic individual is a ward of the State at perhaps $350 a year until he dies, when it still costs just as much to bury him as it did the smallpox victim. The mentally ill person maintained by his family outside the institution is not necessarily any less of a problem. Many the family whose normal relationships with happy emotional life for the children and happy marital accord for the parents are disrupted by the presence of a mentally ill person. Can we doubt that increased juvenile delinquency and rising divorce rates result? Is not a divorce as serious to the total well-being of a community as a case of diphtheria?

Chronic invalidism in neurotic individuals undoubtedly is a greater drain on the resources of a community than all its cases of typhoid fever. It is probable that the total incapacity from all types of mental disorder in a community is greater than the disability from all physical conditions combined. In the United States, "the number of totally and permanently disabled mental deviants (exclusive of the temporarily or partially disabled) is probably about 2 millions, and they, taken together with the immediate members of their families, probably equal nearly 7 million persons." [3] Are not such problems as tantrums, extreme shyness, troublesome aggressiveness, and pathologic lying or stealing in children matters that concern human welfare, and are they not evidence of levels of health? They are forerunners of far more serious threats to total health than arise from dental caries, flat feet, or poor posture, which give concern to public health officials.

Dr. Ira S. Wile states:

> It must be obvious that public health should concern itself with life—and all of it. This involves promoting the prevention of all things that tend to diminish the fullness of life, its intensity, its extent, or its duration. Every community harbors many individuals who are not defective nor psychotic, but who are unstable, inefficient, inadequate, antisocial, and they are all communal hazards. Many of them are merely victims of societal indifference or neglect. Some of them in sheer ignorance would in turn make society their victim. Mental hygiene would seek to restore such persons to normality, but further, would attempt to lessen the likelihood that such unhealthful groups will develop. Hence, mental hygiene has value in pointing out some of the factors and consequences of the struggle for well-being. It can indicate the way of avoidance, the presence of and the mode of release from fears and anxieties. It would have men fit to live * * *. It would have men fit to work * * *. It would have men fit to learn * * *. It would have him fit to love. * * *.[4]

The capacity to live productively and happily is surely a concern of the same humanitarian organization which has been so long engaged in promoting public health in its usual conception. This quality of

[3] Falk, I. S., and Hirsch, N. D. M.: Social security measures as factors in mental health programs. Publication No. 9 of The American Association for the Advancement of Science, p. 193.

[4] Wile, Ira S.: The mental hygiene approach to public health. Mental Hygiene, 17: 380-395 (1933).

living is, I believe, the biggest problem yet remaining in the public health field. And the public health profession is responding. It is accepting the responsibility for obtaining better housing and better conditions of nutrition, which are concerned more with a better way of living than a better length of living. The Chairman of the Division of Medical Sciences of the American Medical Association in his recent address to that body, says:

> The health officer is responsible also for the development of health programs in special fields such as cancer control, mental illnesses, industrial hygiene, and the identification and treatment of crippled children.[5]

There are a number of reasons apparent why a concerted public health attack on mental health problems has so long been deferred. Techniques for accomplishment in this field have been obscure, but they are becoming clearer. More specialists, i. e., psychiatrists, psychologists, and social workers, are needed, but they will not appear in numbers until a demand for them is created. The very magnitude of this problem of assisting individuals to better social and community adjustment and the difficulty of deciding the most vulnerable points for a primary attack have deferred an organized concerted effort to reduce mental illness. Many of the factors which have delayed until recently an effective attack on syphilis apply to the field of mental disorders. I mention the stigma which society has attached to both of these types of illness with a consequent reluctance to admit the presence of disease in self or family, and with consequent disinclination to seek medical help, which in both cases has been prolonged and expensive. There is ample evidence, however, of a changing public opinion and, as in the case of syphilis, it is believed that an improving attitude of the public will not only permit but demand an effective program.

The President of the American Psychopathological Association[6] recently urged that the United States Government conduct a campaign for mental health similar to the campaign against syphilis. This opinion is one of an increasing number which recognize the necessity for a public health type of approach to the mental disorder problem. Dunham recently wrote that a primary condition for a mental hygiene program is that "* * * it should be a public health program. * * * There is no need to enter into an extended discussion of this point for it is well recognized that the prevalence of mental disease is of such magnitude that no private enterprise could make much headway in dealing with it, and, besides, the problem traditionally belongs to the State * * *. Experience with the present Federal program for the eradication of syphilis may prove valuable along

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[5] Diehl, Harold S.: Medical careers in public health. Chairman's address. J. Am. Med. Assoc., 115: 343-345 (August 3, 1940).

[6] Tomm, Douglas A.: Presidential address at Cincinnati, 1940.

certain lines in developing an attack against functional mental disorders." [7] Strecker recently stated:

> * * * physical hygiene or public health and mental hygiene are inseparable. The boundary line between them is hypothetical and he who cannot see how they merge into each other and belong to each other is not sound in his reasoning. The ultimate objective of the doctrine of a sound body is the production of a better and more fruitful mind.[8]

The appalling number of mental cases in institutions is well known. More than 600,000 persons in the United States are confined at present at a maintenance cost of over $200,000,000 a year. New cases are being admitted at the rate of about 120,000 a year. States are struggling in an effort to provide beds for this tide of admissions. It has been said that, "We have been so busy trying to bail out the boat that we haven't had time to caulk the seams." [9] There have been sincere efforts of various individuals and organizations to "caulk the seams." The activities of the National Committee for Mental Hygiene, organized in 1909, are notable. A number of mental hygiene clinics have been established with its assistance and a number independently, but no organization big enough and with sufficient resources has taken the responsibility for rendering an adequate service. Psychiatric clinics can rescue some from this stream of committed persons. If every admission to a State hospital costs the community $7,000, as has been estimated,[10] only three cases prevented or treated successfully short of institutionalization would be necessary to save the annual budget of a mental hygiene clinic. Furthermore, it has been estimated that 20 percent [11] of cases now in State mental institutions could be paroled if there were clinic facilities in the communities for supervision after release.

Is it good business to continue paying $200,000,000 a year for custodial care of psychotic persons without a determined effort to reduce the hospital bill both by research and clinics for the application of such preventive and early treatment procedures as are already known? There is a great need for further research, but, as Dr. C.-E. A. Winslow says, "Nor is it feasible to forget the whole situation and wait till the progress of 50 years has automatically clarified it. The men and women who are living today are fighting their daily battles. They need, they demand, they deserve the best aid which

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[7] Dunham, H. Warren: Ecological studies of mental disorders: Their significance for mental hygiene. Mental Hygiene, 24: 244-245 (April 1940).

[8] Strecker, Edward A.: Mental hygiene. Nelson Loose-Leaf Living Medicine, vol. 7, chapter 12, p. 402.

[9] Roosevelt, Franklin D.: In presenting the 1932 report of the New York State Health Commission, while Governor of New York.

[10] Hincks, C. M.: Public education and mental hygiene. In Proceedings of the First International Congress on Mental Hygiene held at Washington, D. C., May 5-10, 1930, vol. 2, p. 564 (1932).

[11] Rosanoff, Aaron J.: Extramural care in California. Am. J. Psychiat., 97: 235 (July 1940).

our present knowledge of the danger and our present weapons of defense permit." [12]

Mention must be made of the still larger group of persons who stand in little danger of becoming psychotic or committed. I refer to many of the behavior problems in children, the neuroses with their prolonged disabilities, and especially to the problems in psychosomatic medicine. It has been estimated that 35 to 40 percent of all persons carrying complaints of organ dysfunctions to physicians are suffering primarily from an unrecognized emotional or personality disturbance. One author puts the figure as high as 85 percent.[13] Many of these patients, who might be restored as productive members of society, in the absence of adequate appreciation of their problems become the subjects of medical mismanagement, which frequently results only in a more firm conviction regarding the organic source of their disability. It is disturbing to consider the number of thyroids needlessly removed from patients suffering with anxiety syndromes, and the pelvic operations performed because of sexual maladjustments expressed as disturbances in genitourinary physiology. Billings [14] has shown not only that a great many of these cases can be successfully treated, but that it is financially advantageous to the general hospital to do so. Of still greater significance is his observation [15] that almost half of such problems can be successfully treated by the nonpsychiatric practitioner after observing the work of a psychiatric consultative unit and becoming sensitized to the presence of psychosomatic factors. Treatment at this level is real preventive endeavor, since it is when such cases first consult the general physician with organ complaints that the type of understanding and medical attention they receive may determine their prompt restoration to health, or progress along the path of chronic invalidism with a resultant incalculable economic loss to the community.

Referring to results to be expected from the child guidance activities of mental hygiene clinics, it has been estimated that in 25 percent of such cases the presenting problem is completely eliminated, and in an additional 50 percent there is great improvement. In one State in 1938, it is estimated that one child guidance clinic, under the State health department, with a generous budget of $30,000, saved the State $140,000 through children saved from correctional institutions. Another State [16] which has established limited community

[12] Winslow, C.-E. A.: A community mental hygiene program—the next great opportunity. Milbank Memorial Quarterly, July 1935.

[13] Mikkelson, Harold W.: The general practitioner and psychiatry. Delaware State Med. J., 12: 91-93 (May 1940).

[14] Billings, Edward G., McNary, W. S., and Rees, M. H.: Financial importance of general hospital psychiatry to hospital administrator. Hospitals, 11: 40-44 (March 1937).

[15] Billings, Edward G.: Liaison psychiatry and intern instruction. J. Assoc. Am. Med. Colleges, 14: 375-385 (November 1939).

[16] Bahr, Max A.: A Diagnostic Clinic and Community Service as a State Hospital Function. (Indiana.)

service estimates that from 15 percent to 20 percent of patients treated and who would under ordinary circumstances be committed would not become institutional cases, saving the institutions approximately $583,440, if the community clinic plan existed on a State-wide basis. It is estimated that in this same State $284,452 could be saved by the discharge of approximately 15 percent of the institutional cases if adequate clinical facilities were available for parole supervision. This does not include such intangible, but more important, results in the way of improved family relationships and increased happiness.

Osler once said, "There are people in life and there are many of them whom you will have to help as long as they live. They will never be able to stand alone." [17] It is this type of person who may be kept on the job, self-supporting, and relatively happy by mental hygiene guidance. Is it not more important to assist in a lifelong productive adjustment of an individual than merely to prolong his life without regard to the type of living experienced? "For each individual who is actually deranged mentally there are at least 10 who are blindly groping in that dread 'no man's land' between reality and unreality, or sanity and insanity." [18]

Scientific papers are appearing in increasing numbers establishing the epidemiology of mental disorder.[19] Recent work by Faris, Dunham, and Fairbank has established the definite association of various types of mental disorder with social and economic factors of the

[17] Osler, William, and Langdon-Brown, Walter: Thus We Are Men. Longmans, Green & Co., New York, 1939.

[18] Strecker, Edward A.: Mental hygiene. Nelson Loose-Leaf Living Medicine, vol. 7, chapter 12, p. 400.

[19] Elkind, Henry B.: Is there an epidemiology of mental disease? Am. J. Pub. Health, 28: 245 (March 1938).

Hincks, C. M.: Achievements in mental hygiene and promising leads for further endeavor. Am. J. Pub. Health, 28: 251 (March 1938).

Dunham, H. Warren: Ecological studies of mental disorders: Their significance for mental hygiene. Mental Hygiene, 24: 244–245 (April 1940).

Faris and Dunham: Mental Disorders in Urban Areas. University of Chicago Press, Chicago, 1939.

Cohen, Bernard M., and Fairbank, Ruth E.: Statistical contributions from the mental hygiene study of the Eastern Health District of Baltimore. I. General account of the 1933 Mental Hygiene Survey of the Eastern Health District. Am. J. Psychiat., 94: 1153–1161 (March 1938).

Cohen, Bernard M., and Fairbank, Ruth E.: Statistical contributions from the mental hygiene study of the Eastern Health District of Baltimore. II. Psychosis in the Eastern Health District. 1. The incidence and prevalence of psychosis in the Eastern Health District in 1933. Am. J. Psychiat., 94: 1377–1395 (May 1938).

Limburg, Charles C.: Community differences and mental health. Publication No. 9 of The American Association for The Advancement of Science, pages 250–255.

Fairbank, Ruth E.: Mental hygiene from the epidemiological viewpoint. Reprinted from Contributions dedicated to Dr. Adolf Meyer, 1937, pp. 89–94.

Caldwell, Morris Gilmore: The sociological tract: The spatial distribution of social data. Psychiatry, 1: 379–385 (August 1938).

Rogers, L. M.: An epidemiological approach to the prevention of chronic physical, mental, and social illness. Psychiatry, 2: 483–491 (November 1939).

Fairbank, Ruth E.: An approach to prevention in mental hygiene. School of Hygiene and Public Health, Baltimore, Md. Extrais des Comptes Rendus du 11e Congrès Internationale d'Hygiene Mentale, Paris, July 19–23, 1937.

Fairbank, Ruth E.: "Epidemiology" in mental hygiene. School of Hygiene and Public Health, Baltimore, Md. Ibid.

community. Rogers and Limburg will soon publish correlations of 75 such factors with mental disorder in Kentucky. These authors are also attempting to arrive at a determination of the total burden of mental disorder in the surveyed area. The incidence of mental hospital admissions is well known for many areas, but the complete number of lesser disorders in a community has never been determined. As mental disorder is recognized more and more to be susceptible to statistical consideration and its occurrence in proportion to certain environmental conditions and even a certain degree of "infectiousness," it seems more and more suitable for attack by procedures now in use by health departments. The growing interest of practical public health trained physicians will undoubtedly result in more and more data concerning the epidemiological nature of mental disorder and in the development of better techniques for prevention and early treatment. There appears to be no doubt but that at least some mental disorder has its roots in community social and economic conditions. Faris and Dunham, for example, have shown an increased incidence of schizophrenia in deteriorated slum types of urban areas and have even shown that certain types of schizophrenia are more apt to occur under certain conditions. There are increased efforts to treat the occurrence of mental disorder in a better statistical manner. "New Facts on Mental Disorder," a recent book by Neil Dayton, and the various papers by Pollock and Malzburg of New York, are notable.

A prominent psychiatrist and a professor of public health administration in one of our leading colleges have independently estimated that one-half of all mental disease is preventable by the application of present knowledge of mental hygiene.[20]

Tentative standards exist both as to extent and personnel of mental hygiene or psychiatric clinical facilities.[21] A city of 100,000 population should have a full-time mental clinic unit, consisting of 1 psychiatrist, 1 psychologist, 2 psychiatric social workers, and 1 clerk, with an annual budget of $15,000 to $25,000. Such a clinic should serve on a full-time basis, devoting perhaps 2 days a week to adults, 2 days to children, and the rest of the week to special activities, including educational work and special cooperative projects with various social

[20] Strecker, Edward A.: Mental hygiene. Nelson Loose-Leaf Living Medicine, vol. 7, chapter 12, p. 404.
Emerson, Haven: The magnitude of nervous and mental diseases as a public health problem. Proceedings of the First International Congress on Mental Hygiene, vol. 1, p. 209. The International Committee for Mental Hygiene, Inc., New York, N. Y., 1932.

[21] Standards of Training of Professional Personnel in Psychiatric Clinics. Publication of New York State Committee on Mental Hygiene of State Charities Aid Association and Mental Hygiene Section of Welfare Council, September 1935.
Suggested survey schedule with tentative standards for the study of mental and functional nervous diseases. Committee on Administrative Practice, American Public Health Association, New York, N. Y., 1929.
Stevenson, George S.: A suggested community mental hygiene program. The National Committee for Mental Hygiene, New York, N. Y. Am. J. Pub. Health, 21: 1301 (1931).
Practical State program for care of the mentally deficient. The American Association on Mental Deficiency, 1940.

agencies. Smaller communities should receive part-time services on the basis of their population. These standards are minimal, but in 1934 about one-fourth of the cities over 100,000 population, and almost two-thirds of the cities between 50,000 and 100,000 population, had no psychiatric clinic facilities for children or adults.[22] One predominantly rural State which the author recently visited has no mental hygiene or psychiatric clinic facilities either under or independent of its 2 mental institutions and has only 2 private psychiatrists in practice in the entire State. Fifteen States are entirely without mental hygiene or psychiatric clinics, and there are large areas in other States in which no such facilities are available, not even private practitioners or pay clinics; no one to whom a patient facing mental break-down or emotional crisis can go for aid; no one to treat early cases of neuroses before they become fixed in the rut of chronic invalidism; no one to recognize early psychoses when treatment is most apt to restore them to society, and no one to whom the general practitioner can refer a case for psychiatric consultation. In the absence of these facilities, whose responsibility is it to organize them? It should be the duty of health officers to work for the establishment of clinics in the communities under their jurisdiction.

In the past, psychiatrists have at times seemed vague in their proposed mental hygiene plans and it has been difficult for sympathetic public health officials to decide what specific steps should be taken to organize community mental hygiene service. In general, mental hygiene endeavors have two aims. One comprises more strictly preventive work or "positive" aspects of mental hygiene, dealing with long range general efforts to better environment, heredity, training, and educative processes. The second aim is the establishment of psychiatric clinical services in child guidance problems, for "the child of today is the inmate of tomorrow," and for neurotic or prepsychotic adults, together with consultative service for practitioners in psychosomatic medical problems. The public health profession has recognized that treatment at one level is prevention at a higher level. The early treatment of syphilis prevents paresis and tabes; the early treatment of acute infectious diseases prevents complications, and the early treatment of tuberculosis prevents its spread. I agree with Dr. Stevenson, Medical Director of the National Committee for Mental Hygiene, that the development of clinical work is the first objective of the mental hygiene unit and that other functions, such as administration, education, community organization, and research, will follow. A community is more receptive to mental hygiene educational work if there is in its midst a clinical unit visibly demonstrating the practical application of community psychiatry.

[22] The need for a national health program. Report of the Technical Committee on Medical Care of the Interdepartmental Committee to Coordinate Health and Welfare Activities, Washington, D. C., 1938, p. 20.

Communities tire of being *told* what mental hygiene can do without ever being *shown* what it can accomplish. The clinical unit demonstrating its worth in a community by successfully treating behavior problems, saving children from reform schools, relieving psychoneurotics, and successfully supervising persons paroled from mental institutions can expand almost endlessly with community approval and financial support into other more truly preventive fields. These include parent education, selection of teachers on mental hygiene principles, special classes in the schools, sex education and marital advice, organization of lay groups into mental hygiene societies, fuller cooperation with relief organizations, development of playground and recreational projects, cooperative work with courts and churches, and legal reforms concerning commitment procedures and responsibility for precommitment care of the mentally ill, to mention only a few.

Two specific primary steps are proposed in organizing a mental hygiene program:

1. The establishment of a division or department of mental hygiene or mental health, headed by a full-time psychiatrist of special qualifications, in each State. This department should be either part of or in close cooperation with the State health department, except in States where a well-established mental hygiene program already exists independently or in some other department of the State government.

2. Organization of a mental hygiene or psychiatric clinic in every community, county, or city which now has a health department. This will necessarily follow organization of the State office just mentioned.

Cities of 100,000 or more population must be encouraged and aided in the formation of full-time mental hygiene units. Most of the communities to be served, however, are smaller than this and the States should accept the responsibility for furnishing them with centralized service in the form of traveling or part-time clinical units. Training programs for public health officers and nurses in the field as well as representatives of social agencies, must be inaugurated as a basis for satisfactory community service. Detailed recommendations concerning the formation and administration of State programs are not a part of this paper. The National Committee for Mental Hygiene and the Mental Hygiene Division of the United States Public Health Service can furnish technical help of this nature. State programs must be individualized, taking into account such factors as population distribution and the utilization and organization of such private or other State psychiatric facilities as already exist. One very important point in the organization of psychiatric clinic service should, however, be mentioned. Reference is made to the necessity of preventing overloaded clinics by keeping registrations down to the point where therapeutic accomplishments may be ob-

tained. For the same reason, part-time or traveling clinics should be organized so that the communities concerned are covered at least once a week. In order to do this, it will undoubtedly be necessary in most instances in the beginning to neglect some parts of the State so that others may receive useful service. A clinic which allows its services to be spread so thinly that productive psychotherapy is not possible will not justify its existence to a community which expects results in terms of individuals assisted to better adjustments.

In starting a mental hygiene program, a State may find it advisable to give some additional training in certain phases of mental hygiene to the best qualified man available, inasmuch as psychiatrists with full-rounded training in all phases of mental hygiene work are few. Since details of a State program should depend a great deal on local conditions as found by the psychiatrist heading the mental hygiene department and because of the probable budgetary limitations until the program proves its financial economy to the State, he should probably personally head the first psychiatric unit established. Later, as the program develops, with the establishment of more units to cover additional areas of the State, he should retire more to the position of central administrator and devote his time to general educational and promotional work.

No mental hygiene program will ever be adequate because the world will continue to furnish difficulties to complete individual adjustment; but in direct proportion to the various activities proposed under the general term "mental hygiene," there will be a reduction of hospital commitments, chronic invalidism due to neuroses, divorces, suicides, crime, and delinquency. Of particular interest in these days is the thought that social unrest gives rise to dissatisfaction with existing forms of government and may be responsible for revolutionary movements. In addition to these long-term results, experience in several States demonstrates that immediate financial economy of mental hygiene clinic programs can be expected to repay the budgets of such efforts several times over. The question is not, "Can we afford mental hygiene?", but, "Can we afford to be without mental hygiene?"

DIRECTORY OF STATE AND INSULAR HEALTH AUTHORITIES, 1940

The present directory lists only the personnel holding major administrative posts, i. e., chiefs of departments, divisions, bureaus, and special activities. Members of the board of health, other than the health officer, are not included.

The information has been collected from the State and insular health officers as of July 1, 1940. Corrections have been made,

however, to bring the data up to date as of November 1, 1940, insofar as information on changes could be obtained. An asterisk (*) is used to indicate the fact that an officer has been reported to be a part-time employee. All periodicals and regular publications that were reported are listed.

ALABAMA STATE BOARD OF HEALTH

Montgomery

Administration:
J. N. Baker, M. D., State health officer.
Douglas L. Cannon, M. P. H., M. D., assistant in administration.
Hygiene and Nursing, Bureau of:
B. F. Austin, M. D., director.
Laboratories, Bureau of:
S. R. Damon, Ph. D., director.
Preventable Diseases, Bureau of:
D. G. Gill, D. P. H., M. D., director.
Sanitation, Bureau of:
G. H. Hazlehurst, C. E., . .E., director.
Vital Statistics, Bureau of:
L. V. Phelps, S. B. in P. H., director.
Publications:
Vital Statistics Bulletin—monthly.
Report of State Board of Health—yearly.
Report of Bureau of Vital Statistics—yearly.

ALASKA TERRITORIAL DEPARTMENT OF HEALTH

Juneau

Commissioner of Health:
***W. W. Council, B. S., M. D.**
Courtney Smith, A. B., M. D., Dr. P. H., assistant commissioner of health.
Communicable Disease Control, Division of:
Courtney Smith, A. B., M. D., Dr. P. H., acting director.
Maternal and Child Health and Crippled Children, Division of:
Wayne S. Ramsey, A. B., M. D., director.
Public Health Engineering, Division of:
Kaarlo W. Nasi, B. S. E., director.
Public Health Laboratories, Division of:
Warren C. Eveland, A. B., M. S. P. H., director.
Public Health Nursing, Division of:
Mary K. Cauthorne, R. N., director.
Tuberculosis Control:
Palmer Congdon, A. B., M. D., tuberculosis clinician

ARIZONA STATE BOARD OF HEALTH

Phoenix

State Superintendent of Public Health:
Fred P. Perkins, M. D., M. S. P. H.
J. D. Dunshee, M. D., assistant.
Health Education:
Frank R. Williams, B. A., M. S. P. H., director.
Laboratories:
Robert A. Greene, B. S., M. S., P. H. D., director.
Local Health Administration:
J. D. Dunshee, M. D., director.
Maternal and Child Health:
Jack B. Eason, B. S., M. D., M. S. P. H., director.
Nursing:
Jefferson I. Brown, R. N., C. P. H. in Nursing, supervising nurse.
Sanitary Engineering:
F. C. Roberts, Jr., B. S. in C. E., S. B. in S. E., C. E. in C. E., State sanitary engineer.
Publications:
Arizona Public Health News—monthly.
Arizona Sewage and Water Works Bulletin—monthly.
Annual Report of the Arizona State Board of Health.

ARKANSAS STATE BOARD OF HEALTH

Little Rock

State Health Officer:
W. B. Grayson, B. S., M. D., F. A. C. P.
T. T. Ross, M. D., M. P. H., assistant State health officer.
Communicable Disease Control, Division of:
A. M. Washburn, M. D., M. P. H., director.
Dental Hygiene, Subdivision of:
R. P. Spulin, D. D. S., director.
Laboratories, Bureau of:
H. V. Stewart, M. D., director.
Local Health Service, Bureau of:
T. T. Ross, M. D., M. P. H., director.
Malaria Investigations, Division of:
S. J. Carpenter, B. S., M. S., acting director.
Maternal and Child Health, Division of:
W. Myers Smith, M. D., M. P. H., director.
Milk Control, Division of:
D. W. Jones, B. S. in Agriculture, director.
Nursing:
Margaret Vaughan, R. N., B. S. in P. H. N., supervisor of nurses.
Sanitary Engineering, Bureau of:
F. L. McDonald, C. E., M. S., M. S. in S. E., director.
Tuberculosis Control, Subdivision of:
H. Lee Fuller, M. D., director.
Venereal Disease Control, Subdivision of:
D. W. Dykstra, M. D., M. P. H., director.
Vital Statistics, Bureau of:
Mrs. J. B. Collie, director.

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

Sacramento

Administration:
Bertram P. Brown, M. D., director.
Edward E. Johnson, assistant to the director.
Cannery Inspection, Bureau of:
Milton P. Duffy, Ph. C., chief.
Child Hygiene, Bureau of:
Ellen S. Stadtmuller, M. D., chief.
County Health Work, Bureau of:
George M. Uhl, M. D., chief.
Crippled Children's Services:
C. Martin Mills, M. D., chief.
Epidemiology, Bureau of:
Harlin L. Wynns, M. D., chief.
Food and Drug Inspection, Bureau of:
Milton P. Duffy, Ph. C., chief.
Industrial Hygiene Services:
John P. Russell, M. D., chief.
Laboratories, Bureau of:
Wilfred H. Kellogg, M. D., chief.
Public Health Nursing Services:
Rena Haig, P. H. N., chief.
Sanitary Engineering, Bureau of:
Chester G. Gillespie, C. E., chief.
Sanitary Inspections, Bureau of:
Edward T. Ross, chief.
Tuberculosis, Bureau of:
Edythe T. Thompson, A. B., chief.
Venereal Diseases, Bureau of:
Malcolm H. Merrill, M. D., chief.
Vital Statistics, Bureau of:
Marie B. Stringer, M. S., State registrar.
Publications:
California State Department of Public Health—weekly.
California State Department of Public Health—biennially.

COLORADO STATE DIVISION OF PUBLIC HEALTH

Denver

Administration:
R. L. Cleere, M. D., M. P. H., secretary and executive officer.
Crippled Children, Division of:
Maurice D. Vest, M. D., M. P. H., director.
Dental Health, Subdivision of:
Robert A. Downs, D. D. S., M. P. H., director.
Food and Drugs, Division of:
Kenneth W. Lloyd, Ph. R., commissioner.
Laboratories, Division of:
W. C. Mitchell, M. D., director.
Maternal and Child Health, Division of:
J. Burris Perrin, M. D., C. P. H., director.
Plumbing, Division of:
Irving A. Fuller, chief plumbing inspector.
Public Health Nursing, Division of:
Ruth E. Phillips, P. H. N., B. S., director.
Rural Health Work and Epidemiology, Division of:
James S. Cullyford, M. D., C. P. H., director.
Sanitary Engineering, Division of:
Benjamin V. Howe, B. S., director.
Tuberculosis Control, Division of:
Alfred R. Masten, M. D., M. P. H., director.
Venereal Disease Control, Division of:
L. J. Lull, M. D., M. P. H., director.
Vital Statistics, Division of:
Frank S. Morrison, LL. B., director.
Publications:
Colorado State Board of Health Bulletin—bimonthly.
Bulletin, Division of Public Health Nursing—monthly.
Report of Colorado State Division of Public Health—biennially.

CONNECTICUT STATE DEPARTMENT OF HEALTH

Hartford

State Commissioner of Health:
Stanley H. Osborn, M. D., C. P. H.
Cancer Research, Division of:
Matthew H. Griswold, M. D., Dr. P. H., chief.
Child Hygiene, Bureau of:
Martha L. Clifford, M. D., C. P. H., director.
Crippled Children, Division of:
Louis Spekter, M. D., chief.
Laboratories, Bureau of:
Friend Lee Mickle, M. S., Sc. D., director.
Licensure and Registration, Division of:
Ruth H. Monroe, chief.
Local Health Administration, Division of:
Franklin M. Foote, M. D., Dr. P. H., chief.
Mental Hygiene, Bureau of:
James L. Cunningham, M. D., director.
Mouth Hygiene, Division of:
Franklin M. Erlenbach, D. M. D., chief.
Occupational Diseases, Bureau of:
Albert S. Gray, M. D., director.
Preventable Diseases, Bureau of:
Millard Knowlton, M. D., C. P. H., director.
Public Health Instruction, Bureau of:
Elizabeth C. Nickerson, B. S., C. P. H., director.
Public Health Nursing, Bureau of:
Hazel V. Dudley, R. N., B. S., director.
Sanitary Engineering, Bureau of:
Warren J. Scott, S. B., director.
Supplies, Division of:
Lawrence A. Fagan, chief.
Vital Statistics, Bureau of:
William C. Welling, B. A., director.
Publications:
Weekly Health Bulletin.
Connecticut Health Bulletin—monthly.
Annual Report of State Department of Health.
Annual Vital Statistics Report.

DELAWARE STATE BOARD OF HEALTH

Dover

Executive Officer:
Edwin Cameron, M. D., C. M., M. P. H.
Communicable Disease Control, Division of:
Joseph R. Beck, M. D., director.
Maternal and Child Health:
Floyd I. Hudson, M. D., director.
Pathological and Bacteriological Laboratory:
R. D. Herdman, B. S., bacteriologist.
Sanitation Division:
R. C. Beckett, B. S. in S. E., State sanitary engineer.
Vital Statistics:
Edwin Cameron, M. D., C. M., M. P. H., State registrar.
Publications:
Morbidity Report—weekly.
Delaware Health News—quarterly.
Annual Report.

DISTRICT OF COLUMBIA HEALTH DEPARTMENT

Washington

Administration:
George C. Ruhland, M. D., health officer.
Daniel L. Seckinger, M. D., assistant health officer.
Food Inspection, Bureau of:
Reid R. Ashworth, D. V. S., director.
Laboratories, Bureau of:
John E. Noble, B. S., acting director.
Maternal and Child Welfare:
Ella Oppenheimer, M. D., director.
Medical and Sanitary Inspection of Schools:
Joseph A. Murphy, M. D., director.
Nursing, Bureau of:
Josephine Pittman Prescott, A. M., P. H. N. Certf., director.
Permit Bureau:
Richard F. Tobin, M. D., director.
Public Health Instruction, Bureau of:
Melvin P. Isaminger, Dr. P. H., director.
Preventable Diseases, Bureau of:
James G. Cumming, M. D., director.
Sanitation, Bureau of:
J. Frank Butts, director.
Social Hygiene, Bureau of:
George M. Lelby, M. D., director.
Social Service, Bureau of:
Lucia Murchison, M. A., director.
Tuberculosis, Bureau of:
*A. Barklie Coulter, M. D., director.
Vital Statistics, Bureau of:
Joseph B. Irvine, LL. M., director.
Publications:
Weekly report by health department.
Monthly statement of average grade of milk and ice cream sold.
Annual report by health officer.

FLORIDA STATE BOARD OF HEALTH

Jacksonville

Administration:
A. B. McCreary, M. D., A. B., executive secretary and State health officer.
Wm. H. Pickett, M. D., assistant State health officer.
Accounting, Division of:
G. Wilson Baltzell, director.
Dental Health, Bureau of:
Lloyd N. Harlow, D. D. S., director.
Drugs and Narcotics, Bureau of:
M. H. Doss, director.
Engineering, Bureau of:
G. F. Catlett, C. E., director.
Epidemiology, Bureau of:
Dan N. Cone, M. D., director.
Health Education, Bureau of:
Elizabeth Bohnenberger, director.
Laboratories, Bureau of:
J. N. Patterson, M. D., director.
Local Health Service, Bureau of:
L. J. Hanchett, M. D., director.
Malariologist:
L. L. Parks, M. D.
Maternal and Child Health, Bureau of:
W. H. Ball, M. D., director.
Public Health Nursing, Bureau of:
Ruth E. Mettinger, R. N., director.
Tuberculosis Field Unit:
A. J. Logie, M. D., director.
Venereal Disease Control, Division of:
L. C. Gonzalez, M. D., director.
Vital Statistics, Bureau of:
Edward M. L'Engle, M. D., director.
Publications:
Florida Health Notes—monthly.

GEORGIA DEPARTMENT OF PUBLIC HEALTH

Atlanta

Director:
T. F. Abercrombie, M. D., D. P. H.
Dental Health Education, Division of:
*J. G. Williams, D. D. S., director.
Information and Statistics, Division of:
D. M. Wolfe, M. D., D. P. H., director.
Laboratories, Division of:
T. F. Sellers, M. D., director.
Local Health Organization, Division of:
G. G. Lunsford, M. D., director.
Malaria and Hookworm Service, Division of:
Justin Andrews, Sc. D., director.
Maternal and Child Health, Division of:
Joe P. Bowdoin, M. D., director.
Preventable Diseases, Division of:
C. D. Bowdoin, M. D., D. P. H., director.
Public Health Engineering, Division of:
L. M. Clarkson, director.
Public Health Nursing, Division of:
Mrs. Abbie R. Weaver, R. N., director.
Tuberculosis Control, Division of:
H. C. Schenck, M. D., director.
Publications:
Georgia's Health—monthly.

TERRITORY OF HAWAII BOARD OF HEALTH

Honolulu

Territorial Commissioner of Public Health:
M. F. Haralson, M. D.
Richard K. C. Lee, M. D., Dr. P. H., deputy Territorial commissioner of public health.
Communicable Diseases, Bureau of:
James R. Enright, M. D., B. A., director.
Crippled Children, Bureau of:
Richard K. C. Lee, M. D., Dr. P. H., director.
Maternal and Infant Hygiene, Bureau of:
*O. Lee Schattenburg, M. D., B. A., acting director.
Mental Hygiene, Bureau of:
Edwin E. McNiel, M. D., A. B., director.
Public Health Nursing, Bureau of:
Mary Williams, B. S., P. H. N., director.
Pure Food and Drugs, Bureau of:
M. B. Bairos, A. B., director.
Sanitation, Bureau of:
S. W. Tay, B. S., director.
Tuberculosis, Bureau of:
C. Alvin Dougan, M. D., B. A., director.
Venereal Disease Control, Division of:
*Robert D. Millard, M. D., D. S., supervisor.
Vital Statistics, Bureau of:
M. Hester Lemon, registrar general.
Publications:
Annual Report, Board of Health, Territory of Hawaii.

IDAHO DEPARTMENT OF PUBLIC WELFARE, DIVISION OF PUBLIC HEALTH

Boise

Administration, Division of Public Health:
E. L. Berry, M. D., M. S. P. H., director.
Industrial Hygiene, Bureau of:
Max P. Schranck, M. D., director.
Laboratories, Subdivision of:
L. J. Peterson, M. S. P. H., director.
Maternal and Child Health and Crippled Children, Subdivision of:
G. H. Bischoff, M. D., director.
Public Health Nursing, Subdivision of:
Kathryn McCabe, R. N., P. H. N., director.
Sanitary Engineering, Subdivision of:
W. V. Leonard, B. S., M. E., director.
Vital Statistics, Bureau of:
Mae G. Atwood, director.
Publications:
Public Welfare in Idaho—monthly.
Notifiable Disease Report—monthly.

ILLINOIS STATE DEPARTMENT OF PUBLIC HEALTH

Springfield

Director:
R. R. Cross, M. D.
Cancer Control, Division of:
R. V. Brokaw, M. D., chief.
Central Administration, Division of:
Wilbur Mirus, chief clerk.
Child Hygiene and Public Health Nursing, Division of:
Grace S. Wightman, M. D., chief.
Communicable Diseases, Division of:
J. J. McShane, M. D., Dr. P. H., chief.
Community Sanitation, Section of:
H. A. Bronson, C. E., senior sanitary engineer.
Dental Health Education, Division of:
C. F. Deatherage, D. D. S., M. P. H., chief.
Industrial Hygiene, Division of:
M. H. Kronenberg, M. D., B. S., chief.
Laboratories, Division of:
H. J. Shaughnessy, Ph. D., chief.
Local Health Administration, Division of:
Hugo V. Hullerman, M. D., M. S. P. H., chief.
Lodging House Inspection, Division of:
W. J. Costello, superintendent.
Pneumonia Control, Section of:
H. A. Lindberg, M. D., control officer.
Public Health Instruction, Division of:
B. K. Richardson, A. B., chief.
Sanitary Engineering, Division of:
C. W. Klassen, B. S., chief engineer.
Social Hygiene, Section of:
H. M. Soloway, M. D., V. D. control officer.
Statistical Research, Section of:
L. A. Wilson, Statistician.
Vital Statistics, Division of:
R. H. Woodruff, M. D., acting registrar.
Publications:
Illinois Health Messenger—biweekly.
Communicable Disease Reports—biweekly.
Health Officer's Bulletin—weekly.
Over the Spillway—quarterly.
The Digester—quarterly.
Time and Temperature—quarterly.
The New Swimmin' Hole—quarterly.
Annual Report.

INDIANA STATE BOARD OF HEALTH

Indianapolis

Administration:
J. W. Ferree, M. D., M. P. H., director.
Accounting, Bureau of:
Carl F. King, LL. B., chief accountant.
Bacteriological Laboratory:
*C. G. Culbertson, M. D., chief.
Communicable Diseases, Bureau of:
J. W. Jackson, M. D., B. A., State epidemiologist.
Community Sanitation, Bureau of:
Ralph W. Tusing, assistant State director.
Dairy Products, Bureau of:
John Taylor, B. S., M. S., chief.
Food and Drugs, Bureau of:
Joseph C. Schneider, A. B., chief.
Health and Physical Education, Bureau of:
*T. B. Rice, M. D., chief.
Industrial Hygiene, Bureau of:
Louis W. Spolyar, M. D., chief.
Legal Administration, Bureau of:
Charles L. Barry, Jr., LL. B., deputy attorney general.
Local Health Administration, Bureau of:
George M. Brother, M. D., M. P. H., chief.
Maternal and Child Health, Bureau of:
*Howard B. Mettel, M. D., chief.
Public Health Nursing, Bureau of:
Eva F. MacDougall, R. N., A. B., chief.
Sanitary Engineering, Bureau of:
B. A. Poole, B. S., C. E., chief engineer.
State Narcotics Inspection, Bureau of:
Eugene W. Ryan, inspector in charge.
Venereal Diseases, Bureau of:
George W. Bowman, M. D., chief.
Vital Statistics, Bureau of:
H. M. Wright, chief.
Publications:
Monthly Bulletin of the Indiana State Board of Health.
Echoes—quarterly.
Sewage Gas—quarterly.

IOWA STATE DEPARTMENT OF HEALTH

Des Moines

Administration, Public Health:
Walter L. Bierring, M. D., F. A. P. H. A., F. A. C. P., Hon. R. C. P. Edin., commissioner.
Local Health Services:
Marvin F. Haygood, M. D., M. P. H., director.
Maternal and Child Health, Division of:
John M. Hayek, M. D., director.
Public Health Education, Division of:
Wm. W. Schultz, D. S. in J., director.
Public Health Engineering and Industrial Hygiene, Division of:
A. H. Wieters, B. S., M. S. San. Eng., director.
Paul Houser, B. S. Eng., associate director (Industrial Hygiene).
Public Health Nursing, Division of:
Edith S. Countryman, R. N., C. P. H., director.
Preventable Disease, Division of:
Carl F. Jordan, A. B., M. D., M. P. H., director.
State Hygienic Laboratories, Division of:
M. E. Barnes, M. D., Dr. P. H., director.
Tuberculosis Control, Division of:
Charles K. McCarthy, M. D., director.
Venereal Disease Control:
R. M. Sorensen, M.D., C. P. H., M. S., director.
Vital Statistics, Division of:
Eric P. Pfeiffer, M. D., C. P. H., director.
Publications:
Health Message—weekly.
Press releases.
Quarterly and special bulletins.
Biennial reports.

KANSAS STATE BOARD OF HEALTH

Topeka

Secretary and Executive Officer:
F. P. Helm, M. D.
Child Hygiene, Division of:
H. R. Ross, M. D., director.
Communicable Diseases, Division of:
C. H. Kinnaman, M. D., director.
Dental Hygiene, Division of:
Leon R. Kramer, M. P. H., D. D. S., director.
Food and Drugs, Division of:
Evan Wright, acting assistant chief.
Local Health, Division of:
R. F. Boyd, M. D., M. P. H., director.
Public Health Education, Division of:
Bertha Campbell, director.
Public Health Laboratories, Division of:
Chas. H. Hunter, Ph. D., director.
Sanitation, Division of:
Earnest Boyce, M. D., chief engineer.
Tuberculosis, Division of:
F. C. Beelman, M. D., director.
Venereal Diseases, Division of:
Robert H. Riedel, M. D., M. P. H., director.
Vital Statistics, Division of:
Minnie Fleming, acting State registrar.
Publications:
Morbidity Report—weekly.
The News Letter—monthly.
Student Accidents—yearly.
Kansas Accidental Deaths—yearly.
The Biennial Report.

KENTUCKY STATE DEPARTMENT OF HEALTH

Louisville

State Health Commissioner:
A. T. McCormack, M. D., D. P. H.
P. E. Blackerby, assistant State health commissioner.
Bacteriology, Bureau of:
Lillian H. South, M. D., director.
Budget, Bureau of:
Elva Grant, director.
Communicable Diseases, Division of:
Fred W. Caudill, M. D., C. P. H., director.
County Health Work, Bureau of:
P. E. Blackerby, M. D., director.
Dental Health, Bureau of:
*J. F. Owen, D. D. S., director.
Epidemiology, Bureau of:
Fred W. Caudill, M. D., C. P. H., director.
Foods, Drugs and Hotels, Bureau of:
Sarah Vance Dugan, M. S., director.
Maternal and Child Health, Bureau of:
C. B. Crittenden, M. D., M. P. H., director.
Mental Hygiene, Bureau of:
O. M. Goodloe, M. D., C. P. H., acting director.
Public Health Education, Bureau of:
John W. Kelly, M. A., director.
Public Health Nursing, Bureau of:
Margaret L. East, R. N., director.
Registration, Bureau of:
A. T. McCormack, M. D., D. P. H., director.
Sanitary Engineering, Bureau of:
F. C. Dugan, C. E., director.
Trachoma, Bureau of:
Robert Sory, M. D., director.
Tuberculosis, Bureau of:
John B. Floyd, M. D., director.
Venereal Diseases, Bureau of:
Russell H. Teague, M. D., M. P. H., director.
Vital Statistics, Bureau of:
J. F. Blackerby, director.
Publications:
Bulletin, State Department of Health—monthly.
Service Sifter—monthly.
Vital Statistics Bulletin—yearly.

LOUISIANA STATE BOARD OF HEALTH

New Orleans

President, State Board of Health:
John H. Musser, M. D.
Administrative Service, Bureau of:
S. C. Newitt, director.
Parish Health Administration:
Ford Williams, M. D., director.
Crippled Children, Division of:
W. L. Treuting, M. D.
Maternal and Child Health, Division of:
Virginia Webb, M. D.
Tuberculosis Control, Division of:
Alec Brown, M. D.
Parish Health Administration—Continued
Venereal Disease Control, Division of:
A. B. Price, M. D.
Public Health Engineering and Sanitation, Bureau of:
John H. O'Neill, B. S., sanitary engineer.
Vital Statistics, Bureau of:
Mrs. L. Wilson, acting registrar.
Publications:
Morbidity Report—weekly.
Quarterly Bulletin.

MAINE DEPARTMENT OF HEALTH AND WELFARE—BUREAU OF HEALTH

Augusta

Director of Health:
Roscoe L. Mitchell, M. D.
Communicable Diseases, Division of:
R. L. Mitchell, M. D., acting director.
Dental Health, Division of:
P. W. Woods, D. D. S., M.P. H., M. S. D., A. B., director.
Diagnostic Laboratories, Division of:
A. H. Morrell, M. D., director.
Maternal and Child Health, Division of:
C. N. Stanhope, M. D., acting director.
Public Health Nursing, Division of:
Helen F. Dunn, R. N., director.
Sanitary Engineering, Division of:
E. W. Campbell, B. S., C. P. H., D. P. H., director.
Venereal Disease Control, Division of:
*Oscar R. Johnson, M. D., acting director.
Vital Statistics, Division of:
P. B. Stinson, A. B., director.
Publications:
Vital Statistics Report—yearly.

MARYLAND STATE DEPARTMENT OF HEALTH

Baltimore

Director:
Robert H. Riley, M. D., Dr. P. H.
Bacteriology, Bureau of:
C. A. Perry, Sc. D., chief.
Chemistry, Bureau of:
W. F. Reindollar, Sc. D., chief.
Child Hygiene, Bureau of:
J. H. M. Knox, Jr., M. D., chief.
Communicable Diseases and Services for Crippled Children, Bureau of:
Charles H. Halliday, M. D., chief and epidemiologist.
Food and Drugs, Bureau of:
A. L. Sullivan, B. S., commissioner.
Legal Administration, Division of:
J. Davis Donovan, LL. B., Chief.
Oral Hygiene, Division of:
R. C. Leonard, D. D. S., chief.
Personnel and Accounts, Division of:
W. N. Kirkman, chief.
Public Health Education, Division of:
Gertrude B. Knipp, A. B., chief.
Public Health Nursing, Division of:
Catherine Corley, R. N., nurse-instructor.
Sanitary Engineering, Bureau of:
G. L. Hall, chief.
Vital Statistics, Bureau of:
A. W. Hedrich, Sc. D., chief.
Publications:
Weekly Press Bulletin.
Monthly Bulletin.
Annual Report.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Boston

State Commissioner:
Paul J. Jakmauh, M. D.
Deputy Commissioner:
Alton S. Pope, M. D.
Administration, Division of:
Paul J. Jakmauh, M. D., director.
*Edward G. Huber, M. D., assistant director.
Adult Hygiene, Division of:
Herbert L. Lombard, M. D., director.
Biologic Laboratories, Division of:
Elliott S. Robinson, M. D., director.
Child Hygiene, Division of:
M. Louise Diez, M. D., director.
Communicable Diseases, Division of:
Roy F. Feemster, M. D., director.
Food and Drugs, Division of:
Hermann C. Lythgoe, B. S., director.
Genitoinfectious Diseases, Division of:
Nels A. Nelson, M. D., director.
Sanitary Engineering, Division of:
Arthur D. Weston, director.
Tuberculosis, Division of:
Alton S. Pope, M. D., director.
Publications:
Cancer Bulletin—monthly.
Bulletin of Genitoinfectious Diseases—monthly.
News Letter to Board of Health—bimonthly.
Contact—quarterly.
The Commonhealth—semiannually.
Annual Report.

MICHIGAN DEPARTMENT OF HEALTH

Lansing

Commissioner:
H. Allen Moyer, M. D.
Carleton Dean, M. D., M. P. H., deputy State health commissioner.
Education, Bureau of:
Marjorie Delavan, A. B., director.
Engineering, Bureau of:
John M. Hepler, C. E., director.
Epidemiology, Bureau of:
A. W. Newitt, M. D., M. P. H., director.
Industrial Hygiene, Bureau of:
K. E. Markuson, M. D., M. P. H., director.
Laboratories, Bureau of:
C. C. Young, D. P. H., Ph. D., director.
Local Health Services, Bureau of:
Carleton Dean, M. D., M. P. H., director.
Maternal and Child Health, Bureau of:
Lillian R. Smith, M. D., director.
Public Health Dentistry, Bureau of:
William R. Davis, D. D. S., director.
Public Health Nursing, Bureau of:
Helene B. Buker, R. N., M. A., director.
Records and Statistics, Bureau of:
Stuart T. Friant, director.
Publications:
Statistical Report of Communicable Diseases—weekly.
Michigan Public Health—monthly.
Interdepartmental Circular—monthly.
Statistical Report, Bureau of Records and Statistics—yearly.
Annual Report.

MINNESOTA DEPARTMENT OF HEALTH

St. Paul

Secretary and Executive Officer:
A. J. Chesley, M. D.
Administration, Division of:
O. C. Pierson, director.
Birth and Death Records and Vital Statistics, Division of:
Gerda C. Pierson, director.
Child Hygiene, Division of:
Viktor O. Wilson, M. D., M. P. H., director.
Dental Health Education:
Vern D. Irwin, D. D. S., P. H. dentist in charge.
Hotel Inspection, Division of:
Theo. T. Wold, director.
Industrial Hygiene:
Leslie W. Foker, M. D., M. P. H., P. H. physician in charge.
Influenza Research Laboratory:
Clara Nigg, Ph. D., bacteriologist in charge.
Local Health Services, Division of:
R. N. Barr, M. D., M. P. H., director.
Preventable Diseases, Division of:
O. McDaniel, M. D., director.
Public Health Education:
Donald A. Dukelow, M. D., M. S., P. H. physician in charge.
Public Health Nursing, Division of:
Olivia T. Peterson, R. N., director.
Sanitation, Division of:
H. A. Whittaker, B. A., director.
Venereal Disease Control:
Ralph R. Sullivan, M. D., assistant director in charge.

MISSISSIPPI STATE BOARD OF HEALTH

Jackson

Administration:
Felix J. Underwood, M. D., secretary and executive officer.
*R. N. Whitfield, M. D., assistant secretary.
County Health Work:
J. A. Milne, M. D., M. P. H., director.
Field Unit:
H. B. Cottrell, M. D., C. P. H., supervisor.
Health Education:
Eleanor Hassell, B. A., supervisor.
Industrial Hygiene and Factory Inspection:
J. W. Dugger, M. D., director.
Laboratories:
H. C. Ricks, M. D., M. P. H., director.
Library:
Louise Williams, librarian.
Malaria Control:
Geo. E. Riley, M. D., C. P. H., supervisor.
Maternal and Child Health:
J. A. Milne, M. D., M. P. H., acting director.
Milk Sanitation:
N. M. Parker, D. V. M., supervisor.
Mouth Hygiene:
Gladys Eyrich, B. L., supervisor.
Preventable Disease Control:
A. L. Gray, M. D., M. P. H., director.
Public Health Engineering:
H. A. Kroeze, C. E., director.
Public Health Nursing:
Mary D. Osborne, R. N., supervisor.
Tuberculosis State Sanatorium:
Henry Boswell, M. D., F. A. C. P., director.
Venereal Disease Control:
D. V. Galloway, M. D., M. P. H., supervisor.
Vital Statistics:
R. N. Whitfield, M. D., director.
Publications:
Biennial Report.

MISSOURI STATE BOARD OF HEALTH

Jefferson City

State Health Commissioner:
Harry F. Parker, M. D.
John W. Williams, Jr., M. D., M. P. H., assistant health commissioner.
Business Administration, Division of:
W. H. Dorsey, administrator.
Child Hygiene, Division of:
James W. Chapman, M. D., director.
Cosmetology, Division of:
Julia Edgmon, acting director.
Food and Drugs, Division of:
Harry H. Harnsberger, director.
Laboratories, Division of:
C. F. Adams, M. D., director.
Local Health Work, Division of:
John W. Williams, Jr., M. D., M. P. H., director.
Pneumonia Control:
W. H. Aufranc, M. D., director.
Public Health Dentistry:
Allen Gruebbel, D. D. S., M. P. H., director.
Public Health Education:
J. S. Rollins, LL. D., director.
Public Health Engineering, Division of:
W. Scott Johnson, B. S., M. S., chief.
Public Health Nursing, Division of:
Helena Dunham, director.
Venereal Disease Control:
Asa Barnes, M. D., M. P. H., director.
Vital Statistics, Division of:
Thos. W. Chamberlain, director.
Publications:
Morbidity Report—weekly.
Monthly Report.
Annual Report.

MONTANA STATE BOARD OF HEALTH

Helena

Administration:
W. F. Cogswell, M. D., C. M., secretary and executive officer.
Communicable Disease, Division of:
B. K. Kilbourne, M. D., epidemiologist.
Food and Drug, Division of:
J. W. Forbes, B. S., director.
Hygienic Laboratory:
Edith Kuhns, B. S., director.
Industrial Hygiene, Division of:
L. M. Farner, M. D., A. B., C. P. H., director.
Maternal and Child Health, Division of:
Edythe P. Hershey, M. D., B. S., director.
Rural Health Work:
B. K. Kilbourne, M. D., director.
Vital Statistics, Division of:
L. L. Benepe, B. S., deputy State registrar.
Water and Sewage, Division of:
H. B. Foote, B. A., A. M., C. E., director.
Publications:
Report of Communicable Diseases—weekly.
Biennial Report of State Board of Health.
Public Health Nursing Notes—monthly.
Health-in-Education Leaflets—quarterly.

NEBRASKA STATE DEPARTMENT OF HEALTH

Lincoln

Acting Director of Health:
P. H. Bartholomew, M. D.
Community Sanitation:
Harry F. Glynn, assistant director.
Dental Hygiene, Division of:
J. R. Thompson, D. D. S., M. P. H., director.
Laboratory, Division of:
L. O. Vose, M. S., P. H. E., director.
Maternal and Child Health, Division of:
R. H. Loder, M. D., director.
Public Health Engineer:
T. A. Filipi, M. S.
Public Health Nursing Consultant:
Eleanor Palmquist, R. N.
Tuberculosis, Survey of Human:
E. A. Rogers, M. D., director.
Venereal Disease, Division of:
R. A. Frary, M. D., assistant epidemiologist.
Vital Statistics, Division of:
Jean Barrett, A. B., registrar.

NEVADA STATE DEPARTMENT OF HEALTH

Carson City

State Health Officer:
Edward E. Hammer, M. D.
Community Sanitation Program:
Webster B. Hunter, B. S., district supervisor.
Dental Hygiene, Division of:
Robert F. O'Brien, D. D. S., director.
Laboratories, Division of:
Vera E. Young, M. A. in P. H., director.
Local Health Administration and Epidemiology, Division of:
Gerald J. Sylvain, M. D., M. P. H., director and State epidemiologist.
Maternal and Child Health and Crippled Children's Services, Division of:
Wm. Morse Little, M. D., director.
Public Health Engineering, Division of:
W. W. White, E. M., C. P. H., director.
Tuberculosis Control Program:
Edward E. Hammer, M. D., director.
Venereal Disease Control, Division of:
*Byron H. Caples, M. D., director.
Vital Statistics, Division of:
John J. Sullivan, Jr., M. P. H., director.
Publications:
State Department of Health Biennial Report.

NEW HAMPSHIRE STATE BOARD OF HEALTH

Concord

Secretary and Executive Officer:
Travis P. Burroughs, M. D., A. B., M. P. H.
Chemistry and Sanitation, Division of:
Charles D. Howard, S. B., director.
Crippled Children's Services, Division of:
Mary M. Atchison, M. D., A. B., director.
Epidemiology and Local Health Work, Division of:
Mary M. Atchison, M. D., A. B., acting director.
Laboratory of Hygiene:
Travis P. Burroughs, M. D., A. B., M. P. H., director.
Maternal and Child Health, Division of:
Mary M. Atchison, M. D., A. B., director.
Public Health Nursing, Division of:
Mary D. Davis, R. N., director.
Venereal Disease Control, Division of:
Alfred L. Frechette, M. D., director.
Vital Statistics, Department of:
Travis P. Burroughs, M. D., A. B., M. P. H., registrar.
Publications:
New Hampshire Health News—monthly.
Registration Report—biennially.
Report of the State Board of Health—biennially

NEW JERSEY STATE DEPARTMENT OF HEALTH

Trenton

Director:
J. Lynn Mahaffey, M. D.
Administration, Bureau of:
E. R. Outcalt, chief.
Bacteriology, Bureau of:
John Mulcahy, chief.
Chemistry, Bureau of:
John E. Bacon, C. H. E., chief.
Dental Health Program:
J. M. Wisan, D. D. S., consultant.
Engineering, Bureau of:
Harry P. Croft, C. E., chief.
Food and Drugs, Bureau of:
Walter W. Scofield, B. A., B. S., chief.
Local Health Administration, Bureau of:
William H. MacDonald, B. L., M. S., chief.
Maternal and Child Health, Bureau of:
*Julius Levy, M. D., consultant.
Milk Sanitation:
I. H. Shaw, D. V. M., veterinarian.
Negro Health Program:
J. Earl Stuart, M. D., consultant.
Public Health Nursing, Advisory Service:
Elizabeth Curtis, R. N., consultant.
Shellfish Sanitation:
Edwin G. Applegate, B. S., senior chemist.
Venereal Disease Control, Division of:
Daniel Bergsma, M. D., P. H. chief.
Vital Statistics, Bureau of:
Walter R. Scott, chief.
Publications:
Public Health News—bimonthly.
Annual Report of the Department of Health of the State of New Jersey.

NEW MEXICO DEPARTMENT OF PUBLIC HEALTH

Santa Fe

Administration, Division of:
James R. Scott, M. D., Ph. D., director.
County Health Administration, Division of:
C. H. Douthirt, M. D., director.
Engineering Division:
Paul S. Fox, B. S., M. S., C. E., public health engineer.
Maternal and Child Health, Division of:
Hester B. Curtis, M. D., M. P. H., director.
Public Health Laboratory, State:
Myrtle Greenfield, M. A., director.
Public Health Nursing, Division of:
Fannie T. Warncke, director.
Venereal Disease Control, Division of:
E. F. McIntyre, M. D., C. P. H., director.
Vital Statistics, Division of:
Billy Tober, State registrar.
Publications:
Morbidity Statistics Bulletin—weekly.
Vital Statistics Bulletin—monthly.
The New Mexico Health Officer—quarterly.

NEW YORK STATE DEPARTMENT OF HEALTH

Albany

Commissioner:
Edward S. Godfrey, Jr., M. D.
Paul B. Brooks, M. D., deputy commissioner.
Accounts, Division of:
Clifford C. Shoro, director.
Administrative Officer:
Edmund Schreiner, LL. B.
Cancer Control, Division of:
Louis C. Kress, M. D., director.
Communicable Diseases, Division of:
James E. Perkins, M. D., director.
Embalming and Undertaking, Bureau of:
Grace Haswell, principal clerk.
Laboratories and Research, Division of:
Augustus B. Wadsworth, M. D., director.
Local Health Administration:
V. A. Van Volkenburgh, M. D., assistant commissioner.
Malignant Diseases, State Institute for Study of:
Burton T. Simpson, M. D., director.
Maternity, Infancy and Child Hygiene, Division of:
Elizabeth M. Gardiner, M. D., director.
Narcotic Control, Bureau of:
Frank J. Smith, Ph. G., supervisor.
Orthopedics, Division of:
Walter J. Craig, M. D., director.
Pneumonia Control, Bureau of:
Edward S. Rogers, M. D., chief.
Public Health Education, Division of:
Burt R. Rickards, S. B., director.
Public Health Nursing, Division of:
Marian W. Sheahan, R. N., director.
Sanitation, Division of:
Charles A. Holmquist, S. B., director.
Syphilis Control, Division of:
William A. Brumfield, M. D., director.
Tuberculosis, Division of:
William Siegal, M. D., director.
Tuberculosis Hospitals:
Robert E. Plunkett, M. D., general superintendent.
Vital Statistics, Division of:
J. V. DePorte, Ph. D., director.
Publications:
Health News—weekly.
Vital Statistics Review—monthly.
Annual Report.

NORTH CAROLINA STATE BOARD OF HEALTH

Raleigh

Secretary and State Health Officer:
Carl V. Reynolds, M. D.
G. M. Cooper, M. D., assistant state health officer.
County Health Work, Division of:
R. E. Fox, M. D., director.
Epidemiology and Venereal Disease Control, Division of:
J. C. Knox, M. D., director.
Health Education, Crippled Children's Work, Maternal and Child Health Service, Division of:
G. M. Cooper, M. D., director.
Industrial Hygiene, Division of:
T. F. Vestal, M. D., director.
Laboratories, Division of:
John H. Hamilton, M. D., director.
Oral Hygiene, Division of:
Ernest A. Branch, D. D. S., director.
Sanitary Engineering and Malaria Control, Division of:
Warren H. Booker, C. E., director.
School Health Coordinating Service, Division of:
Walter Wilkins, M. D., Coordinator.
Vital Statistics, Division of:
R. T. Stimpson, M. D., director.
Publications:
The Health Bulletin—monthly.

NORTH DAKOTA STATE DEPARTMENT OF HEALTH

Bismarck

Administration, Division of:
Maysil M. Williams, M. D., C. P. H., State health officer.
Child Hygiene, Division of:
Viola Russell, M. D., director.
Laboratories, Division of:
Melvin E. Koons, M. S., C. P. H., director.
Local Health Work, Division of:
D. R. Gillespie, M. D., director.
Preventable Diseases, Division of:
Frank J. Hill, M. D., director.
Sanitary Engineering, Division of:
Lloyd K. Clark, C. E., B. S., director.
Vital Statistics, Division of:
Margaret D. Lang, B. S., director.
Publications:
North Dakota's Health—weekly.
Biennial Report.

OHIO DEPARTMENT OF HEALTH

Columbus

State Director of Health:
R. H. Markwith, M. D.
James E. Bauman, assistant.
Adult Hygiene Division:
Lloyd H. Gaston, M. D.
Audits and Statistics Division:
Harry C. Eader, chief.
Child Hygiene Division:
A. W. Thomas, M. D., chief.
Dental Division:
H. B. Millhoff, D. D. S., chief.
Engineering Division:
F. H. Waring, B. S. San. E., B. S., C. E., chief.
Laboratory Division:
Leo Ey, chief.
Legal Division:
James E. Bauman, chief.
Nursing Division:
Gertrude Bush, R. N., chief.

OKLAHOMA STATE DEPARTMENT OF PUBLIC HEALTH

Oklahoma City

Commissioner:
Grady F. Mathews, M. D.
J. P. Folan, assistant.
J. A. Morrow, M. D., deputy.
Accounting:
J. P. Bailey, auditor.
Epidemiology:
J. Y. Battenfield, M. D., director.
Food and Drug Division:
J. P. Folan, director.
Health Education:
Hugh Payne, director.
Laboratories:
Wm. D. Hayes, Dr. P. H., director.
Local Health Service, Bureau of:
J. W. Shackelford, M. D., M. P. H., director.
Malaria Control and Community Sanitation:
Emil L. Baldwin, director.
Maternal and Child Health:
J. T. Bell, M. D., director.
Milk Control:
Wm. J. Wyatt, B. S., specialist.
Nutritionist:
Maxine Turner, B. S.
Preventive Dentistry:
F. P. Bertram, D. D. S., director.
Public Health Engineering:
H. J. Darcey, B. S., director.
Public Health Nursing:
Josephine L. Daniel, R. N., B. S., director.
Technical Field Unit:
John F. Hackler, M. D., M. P. H., director.
Tuberculosis Control:
R. H. Gingles, M. D., director.
Venereal Disease Control:
Eugene A. Gillis, M. D., M. P. H., director.
Vital Statistics:
Clyde F. Ross, LL. D., director.
Publications:
The Bulletin of the State Health Department—monthly.
Annual Report.

OREGON STATE BOARD OF HEALTH

Portland

State Health Officer:
Frederick D. Stricker, M. D.
Bedding and Upholstery Inspector:
Allen French.
Cancer Control, Division of:
*Raymond Watson, M. D., director.
County Health Units, Division of:
A. Edward Bostrom, M. D., director.
Dental and Oral Hygiene, Division of:
Floyd H. DeCamp, D. D. S., consultant.
Hygienic Laboratory:
Wm. Levin, Dr. P. H., director.
Maternal and Child Hygiene, Division of:
Harold M. Erickson, M. P. H., director.
Plumbing Inspector:
Arthur J. Farrell.
Public Health Education, Division of:
Ethel Mealey, M. A., consultant.
Public Health Nursing, Division of:
Lucile Perozzi, M. A., director.
Sanitary Engineering, Division of:
Earl E. Green, C. E., director.
Tourist Campground Inspector:
A. R. Ashton.
Venereal Disease Control, Division of:
Sam D. Allison, M. D., director.
Vital Statistics, Division of:
Deward Waggoner, M. S. P. H., assistant registrar.
Publications:
Weekly Bulletin.

PENNSYLVANIA DEPARTMENT OF HEALTH

Harrisburg

Secretary:
John J. Shaw, M. D.
A. H. Stewart, M. D., deputy.
Accounts, Division of:
E. J. MacNamara, chief.
Comptroller:
C. T. Williams.
Health Conservation, Bureau of:
J. Moore Campbell, M. D., director.
Maternal and Child Health, Bureau of:
Paul Dodds, M. D., director.
Milk Sanitation, Bureau of:
Ralph Irwin, director.
Public Health Nurses, Bureau of:
Alice O'Halloran, R. N., director.
Sanitary Engineering, Bureau of:
W. L. Stevenson, C. E., director.
Tuberculosis Control, Bureau of:
Chas. R. Reynolds, M. D., director.
Vital Statistics, Bureau of:
Tom E. Williams, director.
Publications:
Pennsylvania's Health—monthly.

PHILIPPINE ISLANDS BUREAU OF HEALTH

Manila

Director:
Eusebio D. Aguilar, M. D.
Administration, Division of:
Felipe Arenas, M. D., C. P. H., chief.
Epidemiology, Division of:
Jose Guidote, M. D., C. P. H., chief.
Hospitals, Division of:
Sulpicio Chiyuto, M. D., chief.
Maternal and Child Hygiene, Division of:
Enrique F. Ochoa, M. D., C. P. H., chief.
National Charity Clinics:
Vicente Kierulf, M. D., medical supervisor.
Sanitation, Division of:
Gabriel Intengan.
Publications:
Annual Report of the Office of the Commissioner of Health and Welfare.
Annual Report of the Bureau of Health.
Monthly Bulletin of the Bureau of Health.
The "Health Messenger" of the Bureau of Health—monthly.

PUERTO RICO DEPARTMENT OF HEALTH

San Juan

Commissioner of Health:
E. Garrido Morales, M. D., Dr. P. H.
Antonio Arbona, M. D., assistant commissioner, Section of Public Health.
Pedro S. Malaret, M. D., assistant commissioner, Section of Public Welfare.
Biological Laboratory:
O. Costa Mandry, M. D., C. T. M., director.
Chemical Laboratory:
Rafael del Valle Sárraga, Ph. D., director.
Epidemiology and Vital Statistics, Bureau of:
Abel de Juan, M. D., C. P. H., chief.
Foods and Drugs, Division of:
José Rivera Mundo, Ph. G., chief.
General Inspection of Construction and Plumbing, Bureau of:
José Cantellops, S. E., chief.
General Sanitary Inspection, Bureau of:
W. F. Lippitt, M. D., chief.
Maternal and Infant Hygiene, Bureau of:
Marta Robert, M. D., chief.
Milk Supply, Division of:
Félix Lamela, chief.
Property and Accounts, Division of:
Rafael M. Méndez, Ph. G., chief.
Public Health Units, Bureau of:
José Chaves, M. D., chief.
Rural Medical Centers, Division of:
Ramón Berríos, M. D., chief.
Sanitary Engineering, Bureau of:
Juan G. Figueroa, C. E., acting chief.
Social Welfare, Bureau of:
Beatriz Lassalle, chief.
Tuberculosis, Bureau of:
J. Rodríguez Pastor, M. D., chief.
Venereal Diseases, Division of:
Ernesto Quintero, M. D., chief.
Publications:
Puerto Rico Health Bulletin—monthly.

RHODE ISLAND DEPARTMENT OF HEALTH

Providence

Director:
Lester A. Round, Ph. D., State registrar.
Administration, Division of:
Edward P. Conaty, Ph. B., business manager.
Crippled Children, Division of:
*William A. Horan, M. D., chief.
Examiners, Division of:
E. Clyde Thomas, acting chief.
Laboratories, Division of:
Edgar J. Staff, A. M., M. Sc., chief.
Maternal and Child Health, Division of:
Francis V. Corrigan, M. D., chief.
Narcotic Drugs and Pharmacies, Division of:
Joseph J. Cahill, drugs control administrator.
Preventable Diseases, Division of:
Harry B. Neagle, M. D., M. P. H., epidemiologist.
Sanitary Engineering, Division of:
Charles L. Pool, M. Sc., chief.
State Sanatorium, Division of:
Ubaldo E. Zambarano, M. D., superintendent.
Vital Statistics, Division of:
Genevieve E. Dolan, assistant State registrar.
Publications:
Annual Report.
Registration Report—yearly.

SOUTH CAROLINA STATE BOARD OF HEALTH

Columbia

State Health Officer:
James A. Hayne, M. D.
Administration, Division of:
James A. Hayne, M. D.
Cancer Control, Division of:
C. L. Guyton, M. D., director.
Communicable Diseases, Division of:
G. E. McDaniel, M. D., director.
Crippled Children, Division of:
H. G. Callison, M. D., director.
Dental Division:
G. A. Bunch, D. D. S., director.
Hygienic Laboratory:
H. M. Smith, M. D., director.
Industrial Hygiene, Division of:
Harry F. Wilson, M. D., director.
Maternal and Child Health, Division of:
R. W. Ball, M. D., director.
Rural Sanitation and County Health Work:
Ben F. Wyman, M. D., director.
Tuberculosis Sanatorium:
Col. Wm. F. Moncrief, M. D., superintendent.
Venereal Disease Control:
Sedgwick Simons, M. D., director.
Vital Statistics Department:
M. B. Woodward, M. D., assistant State registrar.
Publications:
Annual Report.

SOUTH DAKOTA STATE BOARD OF HEALTH

Pierre

State Health Officer:
J. F. D. Cook, M. D., F. A. C. S.
G. J. VanHeuvelen, M. D., M. P. H., assistant.
Administration, Division of:
J. F. D. Cook, M. D., F. A. C. S., superintendent.
Epidemiology and Venereal Diseases, Division of:
G. J. VanHeuvelen, M. D., M. P. H., director.
Laboratories, Division of:
*J. C. Ohlmacher, M. D., director.
Maternal and Child Health, and Crippled Children, Division of:
A. Triolo, M. D., M. P. H., director.
Medical Licensure, Division of:
J. F. D. Cook, M. D., F. A. C. S., superintendent.
Public Health Nursing, Division of:
Alice Olson, R. N., director.
Records and Accounts, Division of:
Esther Kempter, auditor and chief clerk.
Sanitary Engineering, Division of:
W. W. Towne, C. E., M. S., director.
Vital Statistics, Division of:
J. F. D. Cook, M. D., F. A. C. S., special agent.
Publications:
Epidemiology Report—weekly.
The Clarifier—monthly.
Vital Statistics Report—monthly.
Annual Report (Vital Statistics).
Annual Report (All Divisions).

TENNESSEE DEPARTMENT OF PUBLIC HEALTH

Nashville

Commissioner:
W. C. Williams, M. D., C. P. H.
Laboratories, Division of:
Geo. M. Cameron, Ph. D., acting director.
Local Health Service:
Monroe F. Brown, M. D., C. P. H., acting director.
Preventable Diseases, Division of:
C. B. Tucker, M. D., C. P. H., director.
Sanitary Engineering, Division of:
Howard D. Schmidt, B. E., director.
Tuberculosis Control, Division of:
R. S. Gass, M. D., C. M., director.
Vital Statistics, Division of:
Don C. Peterson, M. D., C. P. H., acting director.

Publications:
Health Briefs—monthly.
Monthly News Letter.
Morbidity Statistics—monthly.
Annual Report of the Department of Public Health.
Vital Statistics Bulletin—yearly.
Morbidity Bulletin—yearly.
Annual Health Works' Conference Proceedings.
Biennial Report of the Department of Public Health.

TEXAS STATE DEPARTMENT OF HEALTH

Austin

State Health Officer:
Geo. W. Cox, M. D.
Community Sanitation and Malaria Control:
L. J. Trotti, B. S., assistant State supervisor.
Dental Hygiene Division:
Edward Taylor, D. D. S., director.
Engineering, Bureau of:
V. M. Ehlers, C. E., director.
Food and Drugs, Bureau of:
F. D. Brock, Ph.G., director.
Industrial Hygiene Division:
C. A. Nau, M. A., M. D., director.
Laboratories, Bureau of:
S. W. Bohls, M. D., director.
Local Health Services:
G. W. Luckey, M. D., director.
Malaria Investigation Division:
C. P. Coogle, M. D., Ph. G., director.
Maternal and Child Health:
J. M. Coleman, M. D., M. P. H., director.

Public Health Education:
L. E. Bracy, B. A., director.
Tuberculosis Division:
H. E. Smith, M. D., director.
Venereal Disease Division:
A. M. Clarkson, M. D., M. P. H., director.
Vital Statistics, Bureau of:
W. A. Davis, M. D., director.
Publications:
Morbidity Statistics Bulletin—weekly.
News Letter—weekly.
The Bulletin—monthly.
Good Morning Judge—monthly.
In the Swim—monthly.
Quarterly Reports.
Annual Reports.
Biennial Reports.

UTAH STATE BOARD OF HEALTH

Salt Lake City

Acting State Health Commissioner:
Wm. M. McKay, M. D., M. P. H.
Comptroller and Personnel Director:
T. K. Callister, M. B. A.
Crippled Children's Service, Division of:
A. C. Thurman, M. D., C. P. H., director.
Dental Health, Division of:
R. C. Dalgleish, D. D. S., director.
Engineering and Sanitation, Division of:
Lynn M. Thatcher, B. S., director.
Epidemiology:
Wm. M. McKay, M. D., M. P. H., director.
Fiscal Officer:
Verna Durrant.
Industrial Hygiene, Division of:
J. L. Jones, M. D., Dr. P. H., director.
Laboratories, Division of:
E. H. Bramhall, B. S., director.

Local Health Administration, Division of:
D. D. Carr, M. D., C. P. H., director.
Maternal and Child Health, Division of:
Lela J. Beebe, M. D., director.
Public Health Nursing, Division of:
Vera Klingman, P. H. N., B. S., director.
Venereal Disease Control, Bureau of:
W. W. Bigelow, M. D., C. P. H., director.
Vital Statistics, Division of:
Eva W. Ramsey, director and deputy State registrar.
Publications:
Communicable Disease Report—weekly.
"MCH News Letter"—monthly.
Utah Health Bulletin—quarterly.

VERMONT DEPARTMENT OF PUBLIC HEALTH

Burlington

Secretary and Executive Officer:
C. F. Dalton, M. D.
Communicable Diseases and Venereal Disease Control Division:
F. S. Kent, M. D., director.
Crippled Children's Division:
Lillian E. Kron, R. N., director.
Laboratory of Hygiene:
C. F. Whitney, M. D., director.
Maternal and Child Health Division:
Paul D. Clark, M. D., director.

Public Health Nursing:
Nellie M. Jones, R. N., director.
Sanitary Engineering:
E. L. Tracy, C. E., director.
Tuberculosis and Industrial Hygiene Division:
H. W. Slocum, A. B., director.
Publications:
Modern Health Crusader—five times a year
Biennial Report.

VIRGIN ISLANDS DEPARTMENT OF HEALTH

Charlotte Amalie

Commissioner of Health, Chief Municipal Physician, and Registrar, St. Thomas:
Knud Knud-Hansen, M. D., F. A. C. S.
Assistant Commissioner of Health, Chief Municipal Physician, and Registrar, St. Croix:
Meredith Hoskins, M. D.
Sanitation Service, St. Thomas:
Cyril Creque, chief clerk.
Publications:
Report of Notifiable Diseases—monthly.

VIRGINIA STATE DEPARTMENT OF HEALTH

Richmond

Administration:
I. C. Riggin, M. D., State health commissioner.
Communicable Diseases, Bureau of:
William Grossmann, M. D., director.
Crippled Children's Bureau:
E. C. Harper, M. D., director.
Health Education, Bureau of:
J. C. Funk, Sc. D., director.
Industrial Hygiene, Bureau of:
J. B. Porterfield, M. D., director.
Laboratories, Bureau of:
Adah Corpening, director.
Maternal and Child Health, Bureau of:
A. L. Carson, M. D., director.
Mouth Hygiene, Division of:
N. T. Ballou, D. D. S., director.
Public Health Nursing, Bureau of:
Mary I. Mastin, R. N., director.
Rural Health, Bureau of:
L. J. Roper, M. D., director.
Sanitary Engineering, Bureau of:
Richard Messer, C. E., director.
Tuberculosis Out-Patient Service:
E. C. Harper, M. D., director.
Venereal Disease Control, Division of:
E. M. Holmes, Jr., M. D., director.
Vital Statistics, Bureau of:
W. A. Plecker, M. D., registrar.
Publications:
Health Bulletin—monthly.

WASHINGTON STATE DEPARTMENT OF HEALTH

Seattle

Director:
Donald G. Evans, M. D., B. S., M. P. H., D. P. H.
R. H. Fletcher, M. D., B. S., M. P. H., assistant director, in charge of local health work.
Epidemiology, Division of:
L. A. Dewey, M. D., B. Sc., D. P. H., chief.
Health Education, Division of:
Charles Hilton, M. A., chief.
Laboratory, Division of:
A. U. Simpson, M. D., B. S., chief.
Maternal and Child Hygiene, Division of:
Percy F. Guy, M. D., M. P. H., chief.
Public Health Engineering, Division of:
Roy Harris, B. S., C. E., M. S., chief.
Public Health Nursing, Division of:
Mary Coolidge, A. B., R. N., C. P. H. N., acting chief.
Vital Statistics, Division of:
Francis Rhoads, A. B., M. A., C. P. H., chief and State registrar.
Publications:
Weekly Communicable Disease Report.
Water Supply and Sewage News—bimonthly.
Statistical Bulletin—bimonthly.
Annual Report.

WEST VIRGINIA STATE HEALTH DEPARTMENT

Charleston

Commissioner:
Arthur E. McClue, M. D., B. S.
Barbers and Beauticians, Bureau of:
E. L. Peters, director.
Communicable Diseases, Division of:
Albert M. Price, M. D., C. P. H., director.
County Health Work, Bureau of:
Bruce H. Pollock, M. D., A. B., C. P. H., director.
Dental Hygiene, Bureau of:
Russell K. Smith, M. S., D. D. S., director.
Industrial Hygiene, Bureau of:
J. William Crosson, B. A., M. D., director.
Maternal and Child Hygiene, Division of:
Thos. W. Nale, M. D., B. S., director.
Public Health Education, Bureau of:
Dorothea Campbell, director.
Public Health Nursing, Bureau of:
Laurene C. Fisher, R. N., director.
Sanitary Engineering, Division of:
J. B. Harrington, B. E., director.
State Hygienic Laboratory:
Katherine E. Cox, B. A., director.
Tuberculosis, Bureau of:
W. E. McIlvain, M. S., B. S., director.
Venereal Diseases, Bureau of:
Leon A. Dickerson, M. D., B. S., director.
Vital Statistics, Division of:
Franklin H. Reeder, M. B., director.
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THE INFLUENCE OF DIETARY PROTEIN ON THE TOXICITY OF SULFANILAMIDE [1]

By M. I. Smith, *Chief Pharmacologist*, R. D. Lillie, *Surgeon*, and E. F. Stohlman, *Junior Pharmacologist, United States Public Health Service*.

The therapeutic application of sulfanilamide is not infrequently attended by untoward toxic manifestations involving the hematopoietic organs, the liver, the integument, the gastrointestinal tract and other structures. These have been described in the literature in considerable detail (*1*, *2*) although their immediate causes are not understood.

In previous work (*3*) it was shown that the chronic toxicity of ingested selenium was greatly influenced by dietary protein. Impairment of growth, serous effusions, liver cirrhosis, and anemia which regularly followed the continued ingestion of selenium at a suitable level in a low protein diet could be greatly mitigated or completely prevented by the inclusion of liberal protein. It became of interest to inquire whether a similar relationship might not exist with reference to subacute or chronic intoxication with sulfanilamide.

EXPERIMENTAL

All the work was done with albino rats of inbred stock. Young animals about 30 to 40 days old were used. The animals on the low protein and deficient diet in group A weighed 70 to 80 grams, those of group B weighed, on an average, about 60 grams, while those of groups C and D weighed about 50 grams each. About equal numbers of males and females were used in each group.

The experimental diets were as follows:

Group A: Casein 4 percent, corn starch 77 percent.

Group B: Casein 4 percent, starch 77 percent, l-cystine 0.1 percent.

Group C: Casein 4 percent, starch 76 percent, l-cystine 0.1 percent, dl-methionine 0.5 percent.

Group D: Casein 27 percent, starch 54 percent.

In addition to the above, the diets of all the groups contained dried brewers' yeast 5 percent, McCollum's salt mixture No. 185 4 per-

[1] From the Divisions of Pharmacology and Pathology, National Institute of Health.

cent, cod liver oil 2 percent, and olive oil 8 percent. Since the brewers' yeast yielded 3 percent protein (N X 6.25) the total protein content of the first three groups was 7 percent, while that of group D was 30 percent. The cystine and methionine supplements in the diets of groups B and C were considered sufficient to supply the needs of the growing rat with respect to these two essential amino acids, and as previously shown a diet such as that of group C was adequate for normal growth over a period of at least 3 months, despite its low protein content (*3*).

After the animals had been on the respective diets for a period of 25 days sulfanilamide was administered intragastrically in doses of 1 gram per kilogram as a 5 percent suspension in 5 percent aqueous solution of gum acacia. The drug was given daily except Sundays and holidays until death or until the animals had received from 22 to 27 doses, when the experiment was discontinued and the animals were killed for post-mortem examination and histological study of the tissues. Blood studies, including hemoglobin determination, reticulocyte counts, and the examination of fixed and stained smears, were made at intervals during the course of the experiment. In addition the sulfanilamide concentration of the blood was studied in several members of each group at 2 hours, 28 hours, and 52 hours, respectively, following the last dose in order to ascertain differences, if any, in the degree of retention of the drug in the respective groups.

RESULTS

Of 15 animals in group A 5, or 33 percent, died in the course of sulfanilamide administration after receiving from 5 to 14 doses, the remaining 10 having survived 22 to 24 doses. Death usually occurred in these animals within a few hours after the last dose, and was preceded by progressive depression of the nervous system, muscular weakness, cyanosis, and dyspnea. Examination for methemoglobin in a few instances failed to reveal it. Seven of the animals, or 46 percent, had varying degrees of anemia characterized by anisocytosis, macrocytosis, polychromatophilia, Howell-Jolly bodies and normoblasts, with hemoglobin levels ranging from 7.1 to 11.0 grams and reticulocytes from 7 to 10 percent. In control animals, it should be added, this or the other diets used did not induce anemia in a period of 3 months.

In group B there were 11 animals, 5 of which died during treatment after receiving from 5 to 14 doses, and 6 of the animals, or 54 percent, developed anemia.

In groups C and D, in which there were 10 animals each, only 1 died in each group after receiving 7 and 12 doses, respectively. Five, or 50 percent, of the animals in group C had anemia, and none in

group D showed any evidence of blood dyscrasia. The hemoglobin levels in this last group ranged from 13 to 15.7 grams.

TABLE 1.—*Experimental data*

Group	Animals	Average weight change per animal	Mortality	Anemia	Average free blood sulfanilamide, hours after last dose	
					28	52
		Grams	*Percent*	*Percent*	*Mg. per-cent*	*Mg. per-cent*
A	15	+3	33	46	2.5	1.1
B	11	−2	45	54	4.3	1.2
C	10	+25	10	50	1.7	----------
D	10	+31	10	0	1.9	1.1

Weight changes during the course of sulfanilamide treatment were variable in groups A and B. Some of the animals gained in weight up to about 30 grams, others lost as much. On the average there were no significant changes from the original as shown in table 1. The animals in groups C and D made good gains throughout. The average increment in weight for this period was 25 grams per animal in group C and 31 grams in group D.

The concentration of free sulfanilamide in the blood, taken in several instances at 28 and 52 hours, respectively, after the last dose, showed no significant differences in the several groups at 52 hours but somewhat higher average values in the low protein groups A and B than in groups C or D at 28 hours. There was considerable variation, however, within the groups. The range for 8 animals in group A was 0.2 to 5.0, for 4 animals in group B, 0.3 to 13, for 5 animals in group C, 0.5 to 5.0, and for 3 animals in group D, 1.2 to 2.5 milligrams percent. Similar analyses made for total blood sulfanilamide at 28 hours in several animals in groups C and D showed higher values in the low protein group. The average for 9 animals in group C was 6.1, with a variation of from 1.5 to 14.0 milligrams percent, while the average for 4 animals in group D was 2.6, with a variation of from 0.5 to 4.0 milligrams percent. This appears to suggest a somewhat greater retention of the drug in the low protein groups.[2]

Histologic examination of the tissues revealed little of significance. More or less extensive accumulation of fine to medium fat droplets predominantly in the liver cells in the midzonal area of the lobule was observed in 63 to 85 percent of the animals in groups A and B, in 30 percent in group C, while the livers of the animals in group D were uniformly normal. However, similar fatty changes were found in several control animals on low protein diets and it is doubtful whether sulfanilamide played any part.

[2] We are indebted to Dr. S. M. Rosenthal of this laboratory for the blood sulfanilamide determinations.

In the kidney slight focal interstitial nephritis was observed in 12 of 38 sulfanilamide-treated animals examined with no special predilection for any one group. The lesion was characterized by interstitial lymphocyte infiltration, slight fibroblast proliferation, and slight fibrosis with focal tubular dilatation and atrophy. None of 12 control animals on low protein diets alone showed such lesions.

An observation of considerable interest made in the course of examination of the kidneys was the occurrence of concentrically laminated calcareous concretions within the proximal convoluted tubules or replacing them. These were fat-free and often showed a slight incrustation giving a positive ferric iron test with acid ferrocyanide. Unlike the radially striated concretions described in rabbits by Nelson (4) these are not doubly refractile. These concretions were found in 27 percent and 57 percent of the animals of groups A and B, respectively, but in none of groups C and D. Examination of control animals revealed a somewhat similar incidence of renal concretions on the low protein diet whether or not supplemented with cystine but none on the low protein diet supplemented with cystine and methionine. The concretions appear to be the result of dietary deficiency, the exact nature of which remains to be determined.

The adrenals were consistently normal, with the exception of one instance in group D in which there was hemorrhagic disruption and necrosis of the medulla and inner half of the cortex.

The spleens of the sulfanilamide-treated animals, irrespective of group, showed some hyperplasia of the follicles, while the perifollicular zones were often relatively anemic with increased proliferation of reticulo-endothelial cells. The spleen pulp was usually congested. There was generally a moderate hemosiderosis, more marked in the perifollicular zones. The pulp usually showed more or less peritrabecular infiltration, in some animals by small lymphocytes, in some by large lymphoid, and in others by myeloid cells. When peritrabecular infiltration was more marked and more myeloid there were often also considerable numbers of normoblasts in the adjacent pulp forming erythroblastic islets. This myeloerythropoietic reaction was least in group A, greater in groups B and C, and most marked in group D. It would appear that sulfanilamide induces a splenic hemosiderosis and a splenic myeloerythropoietic reaction and that the animals on the unsupplemented low protein diet have the least capacity to react, those on the high protein diet the most. In rabbits Nelson (4) noted a similar hemosiderosis, but there was no myelopoietic reaction.

COMMENT

These experiments indicate that the toxicity of sulfanilamide is influenced by dietary protein. The greater mortality among the animals on the 7 percent protein diet as compared with those on 30

percent indicates a lowered resistance of the central nervous system which is apparently corrected by methionine and cystine but not by cystine alone. The high incidence of anemia in all the groups on the low protein diet, whether or not supplemented by cystine and methionine, and its complete absence in the group receiving 30 percent protein clearly indicates the value of liberal protein in preventing excessive blood destruction in prolonged treatment with sulfanilamide. Machella and Higgins (*5*) reported a moderate degree of anemia from 1 gram per kilogram of sulfanilamide given daily to rats but no mention is made of the composition of the diet. Whether or not this type of experimental anemia has any bearing on the acute hemolytic anemia reported clinically is not certain, though Watson and Spink (*6*) regard it as a more marked degree of the usual toxic effect of the drug on the hematopoietic system.

Increased susceptibility of other tissues to intensive sulfanilamide treatment under dietary conditions of low protein intake could not be demonstrated histologically. The occurrence of renal concretions and abnormal fat accumulation in the liver in many of our experimental animals is apparently not related to sulfanilamide but rather to the low protein diet per se. This is in agreement with the results recently reported by Tisenhausen and Charkes (*7*) who found parenchymal degeneration and granular disintegration of renal epithelium with urinary casts, and increased fat deposition in the livers of rats on prolonged protein starvation. Our observation of a protective action of methionine against the renal concretions suggests possibilities for further study.

The somewhat higher concentration of blood sulfanilamide in the animals on the low protein diets when taken about 24 hours after the last dose suggests greater retention and this may possibly account for the greater toxicity. This also raises the interesting question as to whether this might not be more than offset by the obvious advantages of higher concentrations of blood sulfanilamide in the therapeutic application of the drug.

CONCLUSIONS

A low protein diet (7 percent) increased the susceptibility of rats to orally administered sulfanilamide by increasing the mortality rate and the incidence of anemia as compared with similarly treated rats on a diet containing 30 percent protein. Supplementing the low protein diet with cystine to the level contained in the 30 percent protein diet had no effect, while a similar supplement of cystine plus methionine decreased the mortality rate but not the incidence of anemia. Examination of the blood sulfanilamide levels suggests the possibility of greater retention of the drug in animals on the low protein diet.

Histologic examination of the tissues failed to reveal specific damage attributable to low protein sulfanilamide treatment. Renal concretions and fatty metamorphosis of the liver were observed in animals on low protein diet irrespective of sulfanilamide treatment. The former appears to be preventable by methionine but not the latter.

A slight focal interstitial nephritis was present in about a third of the sulfanilamide-treated animals irrespective of diet.

Splenic pigmentation and myelosis were most pronounced in the sulfanilamide-treated animals on the high protein diet suggesting increased activity of hematopoietic organs to compensate for the blood destruction.

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DR. HERALD R. COX GIVEN THE 1940 THEOBALD SMITH AWARD

Dr. Herald R. Cox, principal bacteriologist of the United States Public Health Service, stationed at the Public Health Service Rocky Mountain Laboratory, Hamilton, Mont., has been unanimously nominated by the Theobald Smith Award Committee to receive the 1940 Theobald Smith award in medical science. This honor has been conferred on Doctor Cox for his outstanding research in the rickettsial diseases, resulting in the development of a new technique for the preparation of protective vaccines against Rocky Mountain spotted fever and typhus fever. The presentation was made at the meeting of the American Association for the Advancement of Science held in Philadelphia during December 1940 and January 1941.

Doctor Cox was appointed associate bacteriologist in the Public Health Service in 1936 and was promoted to principal bacteriologist in 1940. Before coming to the Public Health Service he served as instructor in immunology at Johns Hopkins University and as assist-

ant in bacteriology and pathology at the Rockefeller Institute for Medical Research, New York City. He is 33 years of age and a native of Indiana. He received his bachelor's degree at the Indiana State College and his doctorate at Johns Hopkins.

The Theobald Smith Award was established in 1935 by Eli Lilly & Co., to be bestowed upon an investigator under 35 years of age for "demonstrated research in the field of the medical sciences, taking into consideration independence of thought and originality." The award consists of a bronze medal and a pecuniary consideration of $1,000.

COURT DECISION ON PUBLIC HEALTH

Furnishing of respirators to employees engaged in certain work.— (St. Louis, Mo., Court of Appeals; *Blittschau* v. *American Car & Foundry Co.*, 144 S.W.2d 196; decided November 8, 1940.) A Missouri statute required that "in all processes of manufacture or labor referred to in this section which are productive of noxious or poisonous dusts, adequate and approved respirators shall be furnished and maintained by the employer in good condition and without cost to the employees." As this section had been expressly construed by the Supreme Court of Missouri it mandatorily required that adequate and approved respirators be furnished and maintained by an employer and, in so providing, left no room for discretion on the part of an employer in the manner of complying with the statute. In an action where recovery of damages for an occupational disease was sought and where one of the plaintiff's grounds of negligence was the defendant company's failure to have furnished him with an adequate and approved respirator as required by the statute, the court of appeals held that, inasmuch as the statute was imperative in its requirements and made no exception to its application in cases, such as the instant one, where there was evidence that the work or process carried on was productive of noxious or poisonous dusts, it was no part of the plaintiff's duty to offer evidence that respirators were practicable, feasible, or possible, or that the employer had the same at hand, or could have procured them at reasonable expense. Instead, it was said, the plaintiff's burden was limited merely to the introduction of evidence that the employer had violated the statute, resulting in the injury of which he complained.

DEATHS DURING WEEK ENDED DECEMBER 21, 1940

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

	Week ended Dec. 21, 1940	Corresponding week, 1939
Data from 88 large cities of the United States:		
Total deaths	8,697	8,504
Average for 3 prior years	8,583	
Total deaths, 51 weeks of year	427,313	420,518
Deaths under 1 year of age	518	461
Average for 3 prior years	487	
Deaths under 1 year of age, 51 weeks of year	25,746	25,249
Data from industrial insurance companies:		
Policies in force	64,781,253	66,416,008
Number of death claims	11,617	12,546
Death claims per 1,000 policies in force, annual rate	9.4	9.8
Death claims per 1,000 policies, 51 weeks of year, annual rate	9.6	9.8

PREVALENCE OF DISEASE

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

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED DECEMBER 28, 1940

Summary

For the current week a total of 45,475 cases of influenza was reported by the State health officers, as compared with 42,457 cases for the preceding week.[1] The largest decreases are shown in the three Pacific Coast States, the total for which dropped from 18,522 cases to 10,689. The incidence also declined in the East North Central area, from 1,058 cases to 358, a decrease accounted for entirely by the decrease in Indiana. Little change is recorded for the Mountain States, a low prevalence continues in the New England and Middle Atlantic areas, while the most significant increases occurred in the West North Central, South Atlantic, and South Central States. Of the 1,848 cases reported in Oklahoma, about one-half are stated to be delayed reports for the preceding week. The number of cases in Texas increased from 1,236 to 7,307. A general increase in upper respiratory infection was reported in Pennsylvania, but it was stated that there was no evidence either of a localized or general influenza epidemic.

Available information indicates that the disease continues to be of mild type, with little or no increase in pneumonia deaths. Up to December 21, pneumonia mortality in a group of large cities, as reported to the Public Health Service, was below the 5-year average and for the weeks ended December 14 and 21, the total number of deaths reported to the Bureau of the Census by 88 major cities was slightly above the 3-year (1937–39) average but dropped below the average for the current week.

The incidence of the other 8 communicable diseases reported in the following weekly table remained favorable during the current week; and for 1940 only influenza and poliomyelitis were above the 5-year (1935–39) median expectancy.

For the current week the Bureau of the Census reports 8,939 deaths in 88 major cities of the United States, as compared with 8,697 for the preceding week and with a 3-year (1935–39) average of 9,307 for the corresponding week.

[1] See correction of figures for week ended December 21 on p. 35.

Telegraphic morbidity reports from State health officers for the week ended December 28, 1940, and comparison with corresponding week of 1939 and 5-year median

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

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median 1935–39	Week ended		Median 1935–39	Week ended		Median 1935–39	Week ended		Median 1935–39
	Dec. 28, 1940	Dec. 30, 1939		Dec. 28, 1940	Dec. 30, 1939		Dec. 28, 1940	Dec. 30, 1939		Dec. 28, 1940	Dec. 30, 1939	
NEW ENG.												
Maine	0	2	3	24	1	4	35	39	35	0	0	0
New Hampshire	0	0	0	----	----	----	0	12	12	0	0	0
Vermont	0	0	0	----	----	----	44	24	24	0	0	0
Massachusetts	1	2	4	----	----	----	223	191	180	1	0	1
Rhode Island	0	1	0	----	----	----	1	101	28	0	1	0
Connecticut	1	0	1	1	1	6	9	67	50	1	0	0
MID. ATL.												
New York	20	26	36	[1] 32	[1] 9	[1] 17	1,998	319	319	1	0	8
New Jersey	9	15	16	6	16	16	405	24	27	0	0	1
Pennsylvania	13	37	31	----	----	----	966	60	60	1	10	4
E. NO. CEN.												
Ohio	10	25	47	55	45	11	224	25	25	2	4	4
Indiana	12	13	19	229	8	35	32	5	7	0	0	0
Illinois	33	45	45	24	15	29	734	17	22	0	2	3
Michigan [2]	5	6	17	6	----	1	795	172	160	0	1	1
Wisconsin	1	0	3	44	30	44	309	73	84	1	0	0
W. NO. CEN.												
Minnesota	0	1	1	----	2	----	3	67	32	0	0	1
Iowa	0	9	8	201	10	7	114	56	15	1	0	0
Missouri	1	2	19	16	1	50	11	2	3	1	0	2
North Dakota	2	1	2	43	24	----	16	3	1	1	0	0
South Dakota	2	2	2	----	4	1	1	4	2	0	0	0
Nebraska	0	0	2	----	----	----	10	2	3	0	0	0
Kansas	6	9	8	1,607	26	4	88	64	7	0	1	1
SO. ATL.												
Delaware	0	0	0	----	----	----	4	1	2	0	0	0
Maryland [2,3]	2	9	8	7	19	14	9	3	39	2	0	2
Dist. of Col.	1	2	5	6	5	4	5	0	1	0	0	0
Virginia	32	30	34	558	195	----	199	12	38	1	0	2
West Virginia [2]	6	12	12	15	19	22	16	8	20	2	2	3
North Carolina	13	24	35	6	83	14	136	65	65	1	1	1
South Carolina [3]	5	10	6	440	2,261	311	53	6	6	0	0	0
Georgia [3]	19	11	11	636	673	86	25	7	0	0	1	1
Florida [3]	3	2	8	38	22	2	0	2	2	[4] 0	0	2
E. SO. CEN.												
Kentucky	5	19	16	1,089	7	15	135	13	13	3	4	5
Tennessee	4	8	16	289	30	45	55	68	21	0	1	1
Alabama [3]	13	40	23	332	1,298	143	32	15	15	3	1	1
Mississippi [2,3]	5	13	11	----	----	----	----	----	----	0	0	1
W. SO. CEN.												
Arkansas	7	15	15	4,260	94	94	304	0	3	0	0	0
Louisiana [3]	1	15	13	6,101	----	10	2	7	7	1	0	1
Oklahoma	14	14	14	1,948	126	114	4	4	4	0	0	3
Texas [2,3,4]	40	39	45	7,307	334	386	46	67	67	3	0	2
MOUNTAIN												
Montana	2	1	1	388	192	15	3	6	5	0	0	0
Idaho	0	0	0	18	1	5	2	88	25	0	0	0
Wyoming	0	0	0	548	115	----	1	2	1	0	0	0
Colorado	1	8	6	805	145	----	70	13	13	0	0	0
New Mexico	1	1	2	56	9	5	28	13	13	0	0	0
Arizona	2	2	2	1,735	102	90	80	9	2	0	0	0
Utah [3]	0	1	1	5,048	964	----	2	63	16	0	0	0
Nevada	----	----	----	968	----	----	----	----	----	----	----	----
PACIFIC												
Washington	6	2	3	1,686	2	----	17	316	139	0	1	0
Oregon	3	4	1	1,877	171	36	13	31	21	0	0	0
California [3]	10	19	40	7,126	38	38	38	191	191	2	1	2
Total	362	497	614	45,475	7,097	2,088	6,378	2,337	2,309	28	31	75
52 weeks [4]	15,715	24,086	28,779	309,669	189,352	157,823	276,032	374,854	374,854	1,609	1,962	5,390

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended December 28, 1940, and comparison with corresponding week of 1939 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median 1935–39	Week ended		Median 1935–39	Week ended		Median 1935–39	Week ended		Median 1935–39
	Dec. 28, 1940	Dec. 30, 1939		Dec. 28, 1940	Dec. 30, 1939		Dec. 28, 1940	Dec. 30, 1939		Dec. 28, 1940	Dec. 30, 1939	
NEW ENG.												
Maine	1	0	0	4	12	20	0	0	0	0	0	1
New Hampshire	0	0	0	2	3	10	0	0	0	0	0	0
Vermont	0	0	0	8	0	5	0	0	0	1	1	0
Massachusetts	0	2	0	144	119	153	0	0	0	0	2	2
Rhode Island	0	0	0	4	4	8	0	0	0	0	0	0
Connecticut	0	0	0	24	62	50	0	0	0	0	0	0
MID. ATL.												
New York	2	3	1	252	371	402	0	0	0	8	4	6
New Jersey	1	0	0	147	198	114	0	0	0	1	3	3
Pennsylvania	0	0	0	180	344	302	0	0	0	7	7	7
E. NO. CEN.												
Ohio	3	1	0	190	344	332	0	2	3	1	9	4
Indiana	3	0	0	125	117	134	2	0	5	2	0	1
Illinois	3	1	3	326	322	327	11	0	5	1	10	3
Michigan [3]	2	0	0	194	271	301	4	0	0	2	7	6
Wisconsin	5	0	0	124	157	192	13	10	7	0	2	1
W. NO. CEN.												
Minnesota	1	1	0	45	104	114	25	28	19	0	0	1
Iowa	2	3	0	70	160	141	1	22	12	1	0	0
Missouri	0	0	0	34	46	104	0	0	9	1	1	4
North Dakota	0	0	0	13	25	25	0	0	5	0	0	0
South Dakota	0	0	0	12	22	30	0	4	5	0	0	0
Nebraska	0	0	0	6	14	33	0	1	6	0	0	0
Kansas	1	1	0	65	71	148	0	0	6	0	1	1
SO. ATL.												
Delaware	0	0	0	3	7	8	0	0	0	0	0	0
Maryland [2 3]	0	0	0	35	61	56	0	0	0	4	3	4
Dist. of Col	0	0	0	16	9	12	0	0	0	0	1	1
Virginia	1	0	0	62	35	39	0	0	0	4	6	5
West Virginia [3]	1	3	0	51	74	63	0	2	0	1	1	1
North Carolina	0	1	0	50	44	44	0	0	0	3	1	3
South Carolina [3]	0	0	0	10	4	8	0	0	0	0	0	0
Georgia [3]	0	0	0	29	22	20	0	0	0	2	6	5
Florida [3]	0	0	1	5	11	10	0	0	0	2	1	1
E. SO. CEN.												
Kentucky	0	1	1	53	58	58	0	0	0	4	0	2
Tennessee	0	0	0	75	22	36	0	0	0	5	2	2
Alabama [3]	2	0	1	20	47	15	0	0	0	6	1	6
Mississippi [2 3]	0	1	1	11	8	10	0	0	0	0	0	1
W. SO. CEN.												
Arkansas	0	0	1	8	17	17	0	9	5	0	5	5
Louisiana [3]	0	0	0	1	15	14	0	0	0	5	8	4
Oklahoma	1	1	0	15	23	36	1	8	3	1	4	4
Texas [2 3 4]	2	0	2	69	48	104	1	4	3	6	11	9
MOUNTAIN												
Montana	0	0	0	9	24	24	1	0	10	0	0	0
Idaho	0	0	0	8	13	21	1	0	3	0	0	0
Wyoming	1	0	0	0	6	10	0	0	0	0	0	0
Colorado	0	0	0	26	21	31	1	17	2	1	1	0
New Mexico	0	2	0	5	15	17	0	0	0	0	5	4
Arizona	0	0	0	7	8	8	0	1	0	2	0	0
Utah [2]	1	0	0	1	7	15	0	2	0	0	1	0
Nevada												
PACIFIC												
Washington	0	3	0	24	48	52	0	4	4	1	0	0
Oregon	1	0	0	6	19	37	0	1	5	0	0	0
California [3]	2	3	4	71	120	171		3	8	8	2	8
Total	36	27	27	2,639	3,552	3,721	61	118	193	80	106	123
52 weeks. [4]	9,769	7,288	7,288	155,064	162,052	223,425	2,462	9,574	9,574	9,585	12,736	14,230

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended December 28, 1940, and comparison with corresponding week of 1939 and 5-year median—Con.

Division and State	Whooping cough	
	Week ended	
	Dec. 28, 1940	Dec. 30, 1939
NEW ENG.		
Maine	23	43
New Hampshire	9	1
Vermont	6	30
Massachusetts	233	88
Rhode Island	5	6
Connecticut	35	44
MID. ATL.		
New York	323	391
New Jersey	85	116
Pennsylvania	373	366
E. NO. CEN.		
Ohio	253	151
Indiana	23	14
Illinois	120	106
Michigan [2]	292	104
Wisconsin	110	117
W. NO. CEN.		
Minnesota	38	31
Iowa	61	22
Missouri	7	3
North Dakota	18	2
South Dakota	2	0
Nebraska	13	1
Kansas	53	8
SO. ATL.		
Delaware	7	6
Maryland [2 3]	65	46
Dist. of Col.	17	10
Virginia	113	21
West Virginia [2]	35	13
North Carolina	79	44
South Carolina [2]	39	19
SO. ATL.—continued		
Georgia [2]	16	2
Florida [2]	1	2
E. SO. CEN.		
Kentucky	45	77
Tennessee	24	11
Alabama [2]	21	24
Mississippi [2 3]	---	---
W. SO. CEN.		
Arkansas	15	2
Louisiana [2]	3	11
Oklahoma	12	0
Texas [2 3 4]	160	79
MOUNTAIN		
Montana	3	5
Idaho	11	2
Wyoming	1	14
Colorado	19	11
New Mexico	12	21
Arizona	14	4
Utah [2]	16	52
Nevada	---	---
PACIFIC		
Washington	27	5
Oregon	6	40
California [2]	128	97
Total	2,967	2,202
52 weeks	[4] 170,911	172,569

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended December 28, 1940, 35 cases as follows: Maryland, 1; South Carolina, 5; Georgia, 13; Florida, 1; Alabama, 7; Mississippi, 1; Louisiana, 1; Texas, 5; California, 1.
[4] The figures for the week ended Dec. 21, printed in the Public Health Reports of Dec. 27, 1940, pp. 2401–2403, should be corrected as follows.—Texas: Diphtheria, 36; influenza, 1,236; measles, 35; meningococcus meningitis, 1; poliomyelitis, 1; scarlet fever, 32; smallpox, 0; typhoid fever, 4; whooping cough, 142; typhus fever, 6. A later report also shows 1 case of meningococcus meningitis in Florida. Affected accordingly are the aggregate and cumulative figures given on the pages named.

WEEKLY REPORTS FROM CITIES

City reports for week ended December 14, 1940

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	177	202	56	929	460	1,212	15	340	26	999	------
Current week[1]	67	5,455	51	2,375	414	926	21	306	12	1,415	------
Maine:											
Portland	0	------	0	0	2	0	0	0	0	18	24
New Hampshire:											
Concord	0	------	0	0	0	1	0	0	0	0	10
Manchester	0	------	0	0	1	12	0	0	0	0	17
Nashua	0	------	0	0	0	0	0	0	0	0	7
Vermont:											
Barre	0	------	0	0	1	0	0	0	0	0	3
Burlington	0	------	0	0	0	0	0	0	0	0	9
Rutland	0	------	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	0	------	0	77	19	51	0	4	0	135	215
Fall River	3	------	0	0	6	9	0	1	0	7	21
Springfield	0	------	0	1	0	3	0	1	1	1	40
Worcester	0	------	0	103	7	10	0	1	0	0	65
Rhode Island:											
Pawtucket	0	------	0	0	3	0	0	0	0	1	20
Providence	0	------	0	1	3	5	0	4	0	1	63
Connecticut:											
Bridgeport	0	2	2	1	0	8	0	1	0	0	30
Hartford	0	------	0	1	2	0	0	0	0	8	42
New Haven	0	------	0	2	0	11	0	1	0	39	41
New York:											
Buffalo	0	------	1	30	7	34	0	6	0	16	139
New York	16	20	2	592	53	104	0	63	1	148	1,458
Rochester	0	1	0	0	2	4	0	0	0	21	61
Syracuse	0	------	0	0	4	0	0	1	0	6	51
New Jersey:											
Camden	0	------	0	43	4	8	0	1	0	1	30
Newark	0	2	0	50	7	38	0	12	0	16	82
Trenton	0	------	0	2	4	12	0	2	1	4	43
Pennsylvania:											
Philadelphia	1	6	4	338	34	84	0	27	0	107	536
Pittsburgh	1	1	2	1	11	20	0	6	0	57	146
Reading	0	------	0	35	3	0	0	2	0	6	33
Scranton	0	------	0	0	0	0	0	0	0	1	1
Ohio:											
Cincinnati	1	------	0	8	3	17	0	4	0	7	115
Cleveland	1	15	0	42	14	9	0	11	0	100	198
Columbus	0	1	1	2	4	6	0	2	0	18	93
Toledo	1	1	0	1	6	9	0	3	0	15	87
Indiana:											
Anderson	1	------	0	0	0	4	0	0	0	0	9
Fort Wayne	0	------	0	0	2	2	0	0	0	0	29
Indianapolis	2	------	7	3	10	20	0	3	0	3	112
Muncie	1	------	0	0	2	7	0	0	1	0	16
South Bend	0	------	0	0	1	0	0	0	0	0	17
Terre Haute	0	------	1	0	3	0	0	0	0	0	22
Illinois:											
Alton	0	------	0	0	2	6	0	0	0	3	9
Chicago	9	5	5	491	27	163	0	29	0	88	686
Elgin	0	------	0	0	1	0	0	0	0	0	12
Springfield	0	------	0	0	2	15	0	0	0	10	19
Michigan:											
Detroit	4	1	0	391	10	66	8	11	0	146	257
Flint	0	------	0	10	5	5	0	0	0	13	22
Grand Rapids	0	------	0	5	0	1	0	1	0	17	28
Wisconsin:											
Kenosha	0	------	0	0	0	2	0	0	0	1	8
Madison	0	------	0	2	0	3	0	0	0	3	23
Milwaukee	0	1	0	21	3	27	0	3	0	29	100
Racine	0	------	0	1	0	2	0	0	0	0	10
Superior	0	------	0	2	0	3	1	0	0	8	11
Minnesota:											
Duluth	0	------	0	1	2	4	10	0	0	8	25
Minneapolis	0	------	3	2	2	17	1	2	0	37	102
St. Paul	0	------	0	2	5	18	0	2	0	24	75

[1] Figures for Boise estimated; report not received.

City reports for week ended December 14, 1940—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet-fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids	0	----	----	0	----	9	0	----	0	0	----
Davenport	0	----	----	1	----	6	0	----	0	0	----
Des Moines	0	----	0	1	0	8	0	0	0	0	31
Sioux City	0	----	----	1	----	2	0	----	0	2	----
Waterloo	0	----	----	0	----	10	0	----	0	3	----
Missouri:											
Kansas City	0	----		0	9	9	0	4	0	56	99
St. Joseph	0	----	0	0	10	0	0	0	0	0	25
St. Louis	4	----	0	0	15	20	0	5	2	12	225
North Dakota:											
Fargo	0	----	----	0	----	0	0	----	0	2	----
Minot	0	----	0	0	0	0	0	0	0	0	11
South Dakota:											
Aberdeen	0	----	----	1	----	0	0	----	0	2	----
Sioux Falls	0	----	0	0	0	5	0	0	0	0	7
Nebraska:											
Lincoln	0	----	----	2	----	5	0	----	0	5	----
Omaha	0	----	1	0	1	14	0	0	0	5	53
Kansas:											
Lawrence	0	1	0	12	0	0	0	0	0	0	3
Topeka	0	----	0	0	2	2	1	1	0	4	14
Wichita	1	2	0	1	1	2	0	0	0	13	24
Delaware:											
Wilmington	0	----	0	1	1	0	0	1	0	11	27
Maryland:											
Baltimore	1	3	1	2	8	20	0	6	0	47	204
Cumberland	0	----	0	0	0	0	0	0	0	0	7
Frederick	0	----	0	0	0	0	0	0	0	0	1
Dist. of Col.:											
Washington	0	2	2	0	12	9	0	13	0	10	200
Virginia:											
Lynchburg	2	----	0	0	3	1	0	0	0	0	14
Norfolk	2	24	0	3	5	0	0	0	0	4	32
Richmond	0	----	1	0	4	4	0	0	2	0	52
Roanoke	0	----	0	24	1	0	0	0	0	18	21
West Virginia:											
Charleston	0	1	1	0	0	2	0	2	0	0	7
Huntington	0	----	----	1	----	1	0	----	0	0	----
Wheeling	0	----	0	0	3	1	0	0	0	7	17
North Carolina:											
Gastonia	0	----	----	0	----	0	0	----	0	5	----
Raleigh	0	----	0	0	0	3	0	0	1	3	10
Wilmington	0	----	0	0	0	0	0	0	1	0	11
Winston-Salem	0	----	0	0	0	3	0	1	0	26	16
South Carolina:											
Charleston	0	46	0	3	5	1	0	1	0	0	21
Florence	0	3	0	0	1	0	0	1	0	0	22
Greenville	0	----	0	3	1	0	0	0	0	0	20
Georgia:											
Atlanta	0	5	0	0	7	8	0	6	0	0	80
Brunswick	0	----	0	0	0	0	0	0	0	2	5
Savannah	0	4	0	1	1	1	0	1	0	0	20
Florida:											
Miami	0	4	0	1	1	0	0	1	2	0	38
Tampa	0	----	0	0	1	0	0	0	0	0	28
Kentucky:											
Ashland	0	4	0	0	2	0	0	1	0	0	8
Covington	0	----	0	3	2	2	0	2	0	0	19
Lexington	0	----	0	72	2	0	0	1	0	13	15
Tennessee:											
Knoxville	1	1	0	1	0	2	0	1	0	9	23
Memphis	0	4	0	9	1	10	0	3	0	6	88
Nashville	0	----	0	1	3	4	0	2	0	0	48
Alabama:											
Birmingham	3	3	0	13	3	4	0	3	0	9	54
Mobile	2	----	0	0	2	0	0	0	0	0	29
Montgomery	0	----	----	0	----	1	0	----	1	0	----
Arkansas:											
Fort Smith	1	1	----	0	----	2	0	----	0	0	----
Little Rock	0	14	0	0	2	0	0	1	0	0	20
Louisiana:											
Lake Charles	3	----	0	0	0	1	0	1	0	0	5
New Orleans	3	129	5	0	10	2	0	12	3	4	27
Shreveport	0	----	0	0	5	3	0	3	0	0	48
Oklahoma:											
Oklahoma City	1	37	0	0	3	3	0	0	0	0	38
Tulsa	2	----	0	0	4	4	0	0	0	2	26

City reports for week ended December 14, 1940—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet-fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Texas:											
Dallas	1	1	1	0	0	0	0	1	0	0	67
Fort Worth	0	------	0	3	2	4	0	2	0	4	45
Galveston	0	------	0	0	0	0	0	1	0	0	14
Houston	3	3	0	0	6	4	0	4	0	3	77
San Antonio	1	183	0	0	1	0	0	3	0	5	48
Montana:											
Billings	0	------	0	0	1	0	0	0	0	0	12
Great Falls	1	------	0	1	0	5	0	0	0	0	6
Helena	0	------	0	2	0	1	0	0	0	0	4
Missoula	0	------	0	0	1	0	0	0	0	0	8
Idaho:											
Boise	------	------	------	------	------	------	------	------	------	------	------
Colorado:											
Colorado Springs	0	------	0	1	0	0	0	0	0	3	7
Denver	4	------	0	44	6	4	0	2	0	8	86
Pueblo	0	------	0	1	2	2	0	0	0	3	15
New Mexico:											
Albuquerque	0	------	0	1	1	0	0	0	0	0	9
Utah:											
Salt Lake City	2	------	0	0	2	4	0	0	0	3	47
Washington:											
Seattle	0	------	1	3	4	1	0	2	0	5	88
Spokane	0	74	0	1	5	3	0	2	0	0	30
Tacoma	0	------	0	1	0	1	0	1	0	8	36
Oregon:											
Portland	1	215	1	0	5	6	0	0	0	0	78
Salem	0	16	------	0	------	0	0	------	0	0	------
California:											
Los Angeles	1	4,223	8	7	12	16	0	19	0	36	384
Sacramento	0	120	1	0	6	2	0	2	0	1	45
San Francisco	0	583	1	2	10	3	0	9	0	34	216

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Michigan:			
Worcester	0	1	0	Detroit	2	1	0
New York:				Wisconsin:			
Buffalo	2	0	0	Racine	0	0	1
New York	2	0	0	Minnesota:			
Pennsylvania:				Minneapolis	0	0	1
Scranton	1	1	0	Missouri:			
Ohio:				St. Joseph	0	1	0
Cincinnati	1	0	0	South Carolina:			
Cleveland	1	0	0	Florence	0	1	0
Toledo	0	0	1	Louisiana:			
Indiana:				Shreveport	0	1	0
Indianapolis	0	1	1	California:			
Illinois:				Los Angeles	0	0	1
Chicago	1	0	2				
Springfield	0	0	1				

Encephalitis, epidemic or lethargic.—Cases: New York, 2; Muncie, 1; St. Louis, 1; Washington, 1.
Pellagra.—Cases: Charleston, S. C., 1; Savannah, 1; Montgomery, 1; Dallas, 1.
Typhus fever.—Cases: Charleston, S. C., 1; Atlanta, 2; Savannah, 4; New Orleans, 1; Houston, 1.

TERRITORIES AND POSSESSIONS

HAWAII TERRITORY

Plague.—A rat found on November 29, 1940, in Paauilo, Hamakua District, Island of Hawaii, has been proved positive for plague.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended November 30, 1940.—During the week ended November 30, 1940, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis				1	6				1	8
Chickenpox				281	415	55	101	114	139	1,105
Diphtheria		28		23	2	5	3			61
Dysentery					1				2	3
Influenza		24			12	1			492	529
Measles	26	90		63	349	126	158	58	111	981
Mumps				3	144	24	1	10	20	202
Pneumonia	4				9	1			15	29
Poliomyelitis					3					3
Scarlet fever	2	5	7	143	140	6	15	12	31	361
Trachoma									9	9
Tuberculosis	1	6	7	52	50	1	18			135
Typhoid and paratyphoid fever			1	16	3		2	2	1	25
Whooping cough		10		232	157	31	11	13	8	462

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