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THE HEALTH OF THE AMERICAN INDIAN

By M. C. GUTHRIE, *Surgeon, United States Public Health Service, Chief Medical Director, Bureau of Indian Affairs*

The North American Indian is slowly merging into the national population. Although there are 350,000 or more Indians living in 26 or more States and mingling to a greater extent each year with the general population, there are still some Indians who have never seen a white man. Most of these Indians live on reservations, which are administered by more than 100 governmental jurisdictions. They represent many tribes and speak many languages. A few are Indians by adoption; the bulk of them are mixed bloods; a smaller and declining number are of pure Indian stock, undiluted by admixture of Caucasian or Negro strain. While numerically on the increase, each decade finds, in the aggregate, decidedly less North American Indian blood and decidedly more white or negro blood in this population. As a consequence of this changing composition, the red men of to-day possess less marked Indian characteristics than were evident 10 or 20 years ago.

Of these 350,000 Indians of all classes, degrees, and changing composition, about 225,000 look to Uncle Sam or are tied to Uncle Sam by various knots of legal guardianship with respect to property, education, health and sanitation, and upbringing.

This article is concerned principally with health matters as they relate to the Indian population of the United States and pertains especially to those whose wardship is still a matter of concern or legal obligation on the part of the Government through the Department of the Interior and the Bureau of Indian Affairs. It should be stated here that there are in many States Indian groups who have never been recognized as Government wards in any respect. For example, the Croatans of North Carolina; the Miamis of Indiana; the scattered Chippewas, Ottawas, Potawatomis, and others in Michigan; the Onondagas, Senecas, Cayugas, Oneidas, Tuscaroras, and St. Regis of New York; the Alabamas, Coushattas, Koosatis, Seminoles, Isletas, and others in Texas; and certain tribes in South Carolina, Alabama,

Maine, Pennsylvania, Virginia, and several other States. With regard to governmental obligations to these groups, there has never been any question. Their status is clear in this respect and has never been otherwise.

Among the principal Indian tribes in different sections of the country are also many individuals whose wardship has been terminated, who are "patent-in-fee" Indians, who have been discharged from this supervisory relationship, and for whom now the various governmental agencies may no longer expend gratuity funds in their special behalf for education, health, or any direct purpose. To these "patent-in-fee" Indians the relationship of the Government is identically the same as it is toward any individual or group of its white citizens.

In many white communities the situation with respect to "patent-in-fee" Indians is confusing. In such communities, when an Indian has transgressed local laws, is hungry, or is diseased and, accordingly, may be in need of medical assistance and possibly hospitalization, the local viewpoint invariably is that, because he is an Indian, he is, per se, a Government ward and, therefore, a Government responsibility, and the Government must provide the remedy needed, whether it be correctional measures for violation of law, food for the hungry, or the services of a physician and nurse for the sick, and admission to an appropriate governmental hospital, sanatorium, or asylum as the needs require. As a matter of fact, these "patent-in-fee" Indians are beneficiaries of the particular State or locality in which they live, and must look to their State or local government for those things which the State or locality provides for its white citizens who need assistance and do not have the means to provide for such themselves.

So much by the way of explanation of the relations of wardship and nonwardship or "patent-in-feeism" as between the Federal Government and the several Indian population groups or individuals throughout the United States.

As previously stated, of the approximately 350,000 Indians in this country, exclusive of Indians in Canada and Mexico, about 225,000 are in some respects wards of the Government. For these the Government has provided some form of medical service since 1873, during which year the first recognized steps were taken toward furnishing organized medical facilities for the Indians. The first hospital exclusively for the care and treatment of Indians was established in 1882. By 1900 the number of such hospitals had grown to 5, and 25 years later the total number of hospitals, including sanatoriums and school, agency and general hospitals, was 82.

From time immemorial the Indians have had their own medicine men and even their medicine women; and the medicine man exists

and practices his profession among practically all tribes even to-day. In the past, the Indian conceptions of disease differed materially from the modern understanding of such matters, and differ to a considerable extent at the present time. Untrained and untutored, the Indian medicine men have not employed scientific observation and study of disease and the use of proved methods of treatment in their awe-inspiring performances. Their practices have been based largely upon local superstitions, religious influences, and fantastic procedures. Indian medicine men, as a rule, were shrewd members of the tribe to which they belonged. They have had some understanding of uncomplicated ailments, of minor injuries, etc., and have fairly well understood the application of simple remedies. Serious, protracted, or obscure illnesses, however, the causes of which could not readily be understood, were attributed almost universally to some occult influence, whether of other members of the tribe, of inanimate objects, or of supernatural things. These supernatural elements in the Indians' conception of disease have lead to methods of treatment based upon incantations, propitiatory rites, a system of taboos, of fetishism and the belief that through these measures even the mysterious and extraordinary power of driving evil spirits from suffering bodies was an accomplishment shared in greater or less degree by all medicine men in good "professional" repute within their respective tribes.

"Treatment" varied according to the individual prowess of the medicine man employed in any particular case and consisted of depositing prayer sticks, a plea to the patient's special totem, the use of "sings," of rubbing, kneading, and the blowing of tobacco smoke on the patient, together with other ceremonial observances and rites. Commands and exhortations, the shooing away of evil spirits, have been and are popular forms of Indian medicine. Extraction of the cause of disease by strong sucking with the mouth is often practiced. When this form of treatment has been employed, the spitting from the mouth of the medicine man of an insect, a worm, or frog shows the credulous patient and his friends and relatives the tangible result of such skilled procedure.

This is the type of competition which has to be met by the physician and nurse who minister to Indians on the reservations to-day. A failing competition, it is true; but the Indian medicine man is still altogether too influential. The adoption of a more sanitary mode of life and a greater utilization of the medical facilities and knowledge of the white race, on the part of the Indians, has resulted in destroying the medicine man's prestige. As a consequence, he opposes the introduction of sanitation and resists, so far as possible, the spread of modern doctrines as to the origin and dissemination of disease and

their proper treatment among Indians. In many instances, his own efforts at the treatment of the sick have the effect of propagating rather than limiting infection. Too often the medicine man "officials" until his Indian patient is *in extremis*, at which time the Indian Service physician is called in as a last resort or to accept the burden of responsibility for a case beyond all human aid.

While individual instances of refusal of the services of modern medicine and Indian Service hospitals are many, in relatively few cases, fortunately, are such refusals encountered for an entire group or tribe. The following instance will serve to illustrate a group refusal and shows how the situation is sometimes met: A trachoma specialist at an Indian pueblo in a southwestern State was prohibited from performing any examinations for the detection and treatment of trachoma by the tribal governor and his coterie of Indian medicine men. The physician then directed his ministrations to the inhabitants of a near-by pueblo, more friendly and cooperative in their attitude. He hoped that the effect of example and beneficial results in the friendly pueblo would in time win over the objections of the recalcitrant group. Thus far, however, his efforts have failed.

Just here it should be mentioned that the Indian Bureau policy is toward persuasive measures and the administration of effective results rather than the use of coercive efforts. Through such measures the Indians generally throughout the country are accepting to a greater degree, as time goes on, the professional personnel and facilities placed at their disposal for the care of their sick and the relief of physical distress. In like manner, also, Indian mothers are being taught by physicians and nurses, through clinics and home visits, the value of sunshine, cleanliness of home and person, of proper food; a cow for the provision of milk for babies and small children; chickens for eggs for the family table; a vegetable garden to provide those elements of the dietary necessary to build up bodily strength and protect against disease. Increasingly large numbers of prospective Indian mothers are coming to Indian Service hospitals for the birth of their babies; and in some instances, even, Indian medicine men are sending their sick children or are coming themselves into these hospitals for care and treatment.

Still a primitive people in many respects, still subject to the influences of ignorance, prejudice, and superstition, still preyed upon by these so-called medicine men and other charlatans, still in many instances low in the economic scale, living in many cases under desert conditions in arid or semiarid climates and in almost all cases among the other groups in isolated sections of our rural communities, their public health problems are the conditions common to any group of people where these circumstances prevail and where the introduction



An Indian Service physician and an Apache Indian medicine man



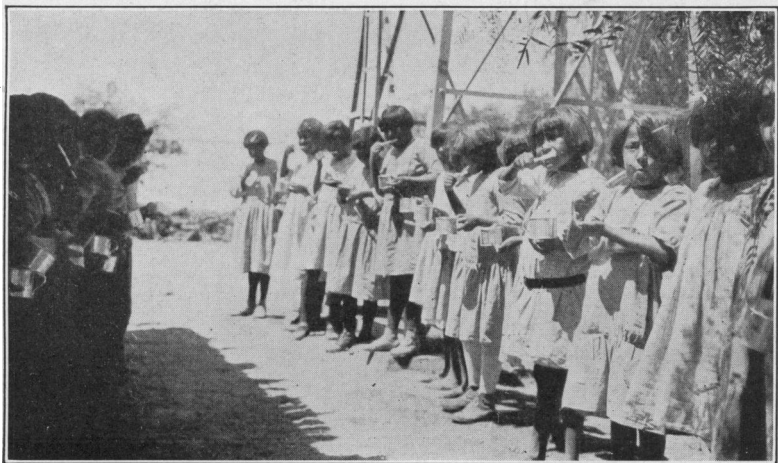
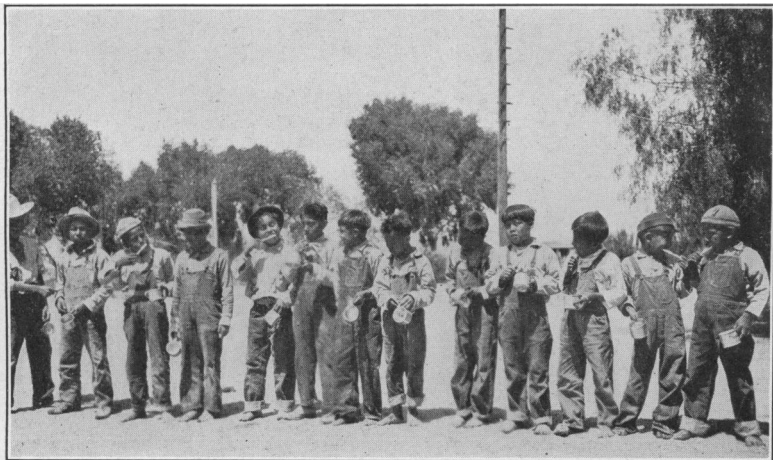
Indian grass house. One of the better types of aboriginal homes



Type of home which Indians are encouraged to build



Groups of Indian mothers with their babies attending maternal and infant welfare meetings. At these meetings the field nurse demonstrates methods in the proper care of infants



Toothbrush drills at an Indian school. The teaching of health habits is a part of the curriculum of Indian schools at the present time



Indian school girls being taught the proper method of weighing, bathing, and clothing an infant. This work is being conducted in cooperation with the State Department of Health of Oklahoma



Indian Service hospital for the Kiowa Reservation at Lawton, Okla. The present capacity of 52 beds will be increased to 100 beds during the fiscal year 1930

of established measures is difficult because of lack of facilities and a trained personnel who are content to live under conditions of such isolation and at times great hardship.

The major problems from the health standpoint in the Indian country are, first, tuberculosis, second, factors which are responsible for a high death rate in infants and children, and third, trachoma.

Tuberculosis.—Evidence that tuberculosis existed among Indians prior to the advent of the white man is apparently lacking. Testimony among old Indians would seem to indicate that the disease was seldom seen. Probably it became increasingly prevalent as Indian contact with white people increased, and undoubtedly the disease showed its greatest increase after the Indians had come into more intimate contact with the whites. Before this time the Indian enjoyed an open air, roving life. They frequently moved from place to place. Their habits were doubtless insanitary, but the evil effects were minimized by their constant changing of camps. The custom, in the early days, of leaving behind those individuals unable to travel by reason of disease or physical disability, probably had the effect of decreasing the prevalence of disease. With the change from a roving life to confinement on reservations and a more fixed abode, ignorance of the most elementary principles of domestic hygiene and their practical application played an important part in the spread of tuberculosis and other infectious conditions. The annual report of the Surgeon General of the Army for 1893 notes the increased tendency to tuberculosis which Indians are prone to exhibit when they give up their wild life for a semicivilized mode of living. The house and the domestic life of the Indian undoubtedly play a most important rôle in the perpetuation and spread of infectious and contagious diseases among them.

Regarding the Canadian Indians, the following is quoted from the Annual Report of the Department of Indian Affairs, Dominion of Canada, for the year ending March 31, 1928:

Tuberculosis is about five times more common among Indians than among the general population. Several factors contribute to its prevalence. In many tribes tuberculosis has been comparatively recently introduced, and the resistance possessed by the white race has not yet been acquired. The food supply which would produce in the individual the robust health to enable him to resist invasion by the disease, and to cast it off after invasion, is not available, nor have the Indians learned in many cases to make good use of the supplies to be had. Living conditions are far from ideal, and ignorance prevails as to the method of spread of contagion. With the exception of a few tribes, the Indians have not the background of education and experience which would enable them to take full advantage of the knowledge of public health available at the present day.

The death rate from tuberculosis among the Indians of the United States to-day is estimated to be more than four times the death rate.

from this disease among the white population of the United States. This is due in part to lack of racial immunity to this disease, unfavorable social factors, poor economic status, with unhygienic living conditions, and an inadequate or poorly balanced diet, lacking in the essentials which build up body resistance and protect against disease.

The high mortality among infants and small children is due largely to the same conditions outlined above. To this might be added the toll exacted by contagious diseases, such as measles, whooping cough, chickenpox, etc., and the pneumonias so frequently secondary to these diseases.

Trachoma.—Trachoma has been prevalent among the Indians of the United States for many years. It is evident that the infection has prevailed among the tribes as far back as their memory carries.

This disease also exists among the white inhabitants of the Appalachian ranges. These mountain people have never been given to traveling about; they live by themselves, and have lived for generations in little homes scattered over every range, rarely so grouped as to form even a small settlement, and almost completely shut out from the world at large. Yet, trachoma has existed among them for many years.

In like manner, as affecting the North American Indians, the historical background of this obstinate and very chronic eye disease is listed in obscurity. Its prevalence is great in certain sections of the country. In some few sections there are groups of Indians who are entirely free from it. The percentages of incidence of this disease vary from 2 per cent in certain States and 6 or 8 per cent in other sections to probably as high as 20 per cent in groups of Indians in the Northwest or even as high as 40 and in some places perhaps 50 per cent among certain groups of Indians in Arizona and New Mexico.

Venereal disease is a factor of serious importance on relatively few Indian reservations. It constitutes a problem where groups of Indians have money to spend and are in rather close contact with elements of the white population where vice is rampant, and where, generally speaking, law and order are difficult of enforcement or are not maintained. It is more prevalent among the mixed bloods under such conditions than among the full bloods or where the Indian population is isolated. The prevalence of venereal disease is reported as slight and as not constituting a factor in the health situation among most of the tribes.

The general death rate among the Indian population for which we have records is now about twice that of the registration area of the United States. There is presented herewith a table of birth and death rates per thousand as applying to white, negro, and Indian populations of the United States.

Birth and death rates per 1,000 population for white, Negro, and Indian populations

(Statistics for whites and Negroes for registration area for calendar years; Indian rates from Indian Office statistics for fiscal years ending June 30 of year indicated)

Year	Birth rates			Death rates		
	White	Negro	Indian	White	Negro	Indian
1911.....			36.1	13.8	23.4	35.6
1912.....			38.4	13.5	22.6	32.5
1913.....			38.8	13.7	21.7	29.9
1914.....			38.8	13.2	21.7	30.8
1915.....	25.0	20.6	35.3	13.1	22.0	30.5
1916.....	25.1	20.4	31.9	13.6	19.8	23.3
1917.....	24.7	24.4	31.5	13.7	21.4	25.0
1918.....	24.6	24.5	29.4	17.4	26.0	24.7
1919.....	22.1	25.2	30.9	12.4	18.0	¹ 24.2 ² 45.0
1920.....	23.5	27.0	31.7	12.6	18.0	¹ 22.3 ² 29.5
1921.....	24.0	27.9	27.8	11.2	15.8	22.3
1922.....	22.2	26.0	29.9	11.4	15.7	25.1
1923.....	22.1	26.3	26.4	11.8	17.1	21.8
1924.....	22.2	27.4	31.5	11.2	17.8	22.9
1925.....			34.1			23.4
1926.....			25.2			18.2
1927.....			25.1			21.8
1928.....			28.0			21.8

¹ Exclusive of influenza deaths.

² Inclusive of influenza deaths.

The table shows that of the three races the Indian has the highest birth rate as well as the highest death rate; that both birth and death rates are decreasing for whites and Indians; and that while death rates are decreasing for the colored race, their birth rate is apparently on the increase, but is still below that of the Indian. The death rates for Indian and negro are more nearly the same—particularly within the past few years—and this possibly is explained by the fact that the economic and social factors influencing both races are more nearly on an equal basis than as between Indians and whites. It might be stated here that the negro death rate is higher for urban communities than for rural districts, and that the Indian on the whole leads a rural existence.

It is realized that racial comparisons are hazardous because of the difficulty of eliminating differences in many environmental factors. Birth registration is still incomplete for the negro population and mortality rates are not complete for that race. Indian Office statistics are not complete either for births or deaths, but are considered indicative of general conditions and trends.

From Indian Office statistical data for the period July to December, 1927, tuberculosis in all forms constituted 276 of the 1,089 deaths, a percentage of 25.4. For the Indians of British Columbia in 1926, tuberculosis in all forms constituted 32.6 per cent of the deaths.

The first five causes of deaths for the period under consideration among the Indians who are wards of the Government are as follows:

Tuberculosis—first in importance—total deaths, 276; percentage, 25.4.

Pneumonia—total deaths, 62; percentage, 5.7.

Violent deaths—total deaths, 53; percentage, 4.8.

Senility—total deaths, 48; percentage, 4.4.

Diarrhea and enteritis under 2 years of age—total deaths, 48; percentage, 4.4

In 1921 the estimated incidence of trachoma among Indians was cases given as 30 per cent. In 1925, out of 30,112 examinations, 6,800 were listed as "positive" and "suspicious" for trachoma, a percentage of 22.6. For the fiscal year 1928, as a result of almost 40,000 examinations, the findings were positive for this disease in 18 per cent. Data showing the incidence, treatment, etc., as reported by special physicians, for this disease for the 4-year period 1925 to 1928, inclusive, are given in the accompanying table.

Incidence and treatment of trachoma among Indians, 1925 to 1928, inclusive

[Reports of special physicians]

Year	Number of examinations	Number of cases found	Percentage of positive findings	Number of operative treatments	Number of non-operative treatments
1925.....	30, 112	6, 800	22. 6	4, 170	2, 630
1926.....	26, 362	6, 528	24. 8	2, 697	5, 033
1927.....	28, 730	4, 336	15. 1	1, 662	1, 679
1928.....	37, 524	6, 761	18. 0	2, 565	3, 272

What is being done by the Medical Service of the Indian Bureau with reference to this "health situation" among these Indians.—In 1911 the appropriation for the health activities of the Bureau of Indian Affairs was \$40,000. The appropriation for the operation of this service in 1929 was \$1,440,000. Money has been used also from tribal appropriations and from other sources in the administration of the health work. Out of these appropriations the personnel and equipment listed below have been provided.

The Indian Service has 4 medical directors, 3 of whom are officers of the United States Public Health Service; 13 special physicians (trachoma specialists); 183 agency physicians; 11 dentists; 1 supervisor of nurses; 149 graduate hospital nurses; 8 practical nurses; 33 field or public health nurses; 13 nurses engaged in trachoma work with special physicians; 31 field matrons, together with a considerable number of miscellaneous employees assisting in the various medical activities. These physicians, nurses, and other health employees carry out their work in 92 hospitals which have a total capacity in excess of 3,000 beds.

Indian Service hospitals vary from small 8 or 10 bed school infirmaries, to general hospitals of 70-bed capacity, and to institutions for the care of tuberculosis having a capacity as high as 150 beds, the average capacity being about 35 beds. They are divided as follows: 79 general agency and school hospitals and infirmaries, 10 sanatorium schools which are virtually tuberculosis sanatoriums for the care of children, 2 sanatoriums for tuberculous adults, and one hospital for the insane.

What work has been done by these agencies in the treatment of disease and the improvement of health and sanitary conditions.—More than 32,000 Indian patients were treated in these hospitals during the fiscal year 1928. Nearly 2,000 patients were treated in the tuberculosis sanatoriums and sanatorium schools. The number of hospital days of treatment given in the general hospitals during the past year was over 362,000. The number of hospital days of treatment given in the sanatoriums and sanatorium schools was in excess of 240,000. The total number of hospital days of treatment in the combined general hospitals and tuberculosis sanatoriums was therefore over 600,000. During this period, 597 Indian babies were born in Indian Service hospitals.

The number of out-patient or dispensary treatments given in the general hospitals and sanatoriums was more than 600,000. The number of Indians visited and treated in their homes by Indian Service physicians was in excess of 42,000, and the number of home treatments thus given was more than 50,000.

More than 10,000 Indians were vaccinated against smallpox. More than 4,000 Indians were vaccinated against typhoid fever. Nearly 15,000 Indian children were protected against diphtheria by the administration of toxin-antitoxin.

These figures consider the activities of the medical service of the Indian Bureau as a whole, with the exception of the services performed by field nurses and field matrons. The disease preventive and educational services of these workers are hard to measure accurately in terms of things accomplished. To what extent public health nurses and matrons are influencing Indian mothers in home management, in infancy and maternal welfare, in building up of improved environmental conditions, is difficult to state in terms other than number of visits made. In time and with increased personnel of this character, together with improved and extended material facilities, further good results may be expected.

In its general program of health and sanitation, the Indian Bureau has been assisted by the active and sympathetic cooperation of a number of agencies, governmental, State, and unofficial in character. Wisconsin, for some years, has maintained a direct health appropriation for the operation of a field nursing service among the Indians in

that State. Minnesota has been a leader in this type of work also and has for some years operated a field nursing service for the Chipewya Indians. A nurse of the Indian Service operates in Oklahoma through and under the direction of the health department of that State, confining her activities principally to groups of Indian children in public schools. In Riverside County, Calif., an Indian Service field nurse is associated with the nursing service under the direction of the whole-time county health officer. Montana maintains a whole-time county health organization to which an Indian Service nurse has been attached who works with the county health officer, and under the general direction of the State health organization, in Big Horn County. Other States are interested in the development of public health services in which groups of Indians will be considered in the same manner as their white populations.

Several voluntary organizations are maintaining nurses who work in the Indian field. The Eastern Association of Indian Affairs, the American Red Cross, the National Tuberculosis Association, the National Society for the Prevention of Blindness, the American Medical Association, the American Public Health Association, and others give freely of assistance, advice, and counsel in the solution of the health problems as they relate to the Indians.

The medical missionary work of several churches in the Indian field is worthy of mention. Their hospital, dispensary, and clinic activities are exclusive of those listed above and are considerable.

The United States Public Health Service has lent personnel directly to the Indian Medical Service, has made available the services of its field directors and its professional and scientific equipment, and through the sanitary engineering office it is making sanitary surveys of water and sewerage problems in connection with the various reservations throughout the country. The entire medical force of the Indian Bureau is on the mailing list for the professional and scientific publications of the Public Health Service.

A considerable number of the hospitals operated by the Indian Service are inadequately equipped; most of them are undermanned as far as personnel needs are concerned; some are inadequate from the physical standpoint, owing to the fact that they have been made over from school buildings or superintendents' quarters and adapted to hospital uses; some of the sanatoriums and sanatorium schools are also converted buildings. Necessity has been the guiding factor in the attempt to convert a school building into a hospital building. Its justification arises in providing facilities of this character where no facilities existed before. These hospitals and sanatorium plants are being improved; new hospitals, constructed along more modern lines, are being established; infirmaries for the segregation of advanced cases of tuberculosis are being built; better equipment is being set

up, both for diagnostic and for treatment purposes; laboratory and X-ray equipment is being provided for a number of these institutions; the number of both physicians and nurses is being increased and the qualifications of both are being brought to a higher level each year.

It is true that most of the physicians in the Indian Service are not specialists in preventive medicine, surgery, or internal medicine. The major groups of these physicians are of the same type of doctor who practices medicine in the rural communities of the United States. There are a number of skilled surgeons; some are excellent diagnosticians; others are well trained in preventive medicine. Certainly the majority of these doctors and nurses who work by their sides, and the lay personnel of the various jurisdictions as well, are actuated by the same high principles of professional and moral conduct, the same high regard for the welfare of the Indian charges under their care, the same devotion to duty and application to service—often under adverse conditions—as is any group of physicians, nurses, or lay personnel anywhere in this country or abroad.

The Indian Bureau is striving to make its institutions not only places where Indian people may receive care and treatment for diseased conditions, but to make them public health centers where all of the factors which have to do with the building up of healthy bodies and the prevention of disease will be given special attention. The Indian Bureau is endeavoring to increase the facilities of its general hospitals so that advanced and terminal cases of tuberculosis may be cared for. The bureau is also planning to establish "clinics" at various points on the larger reservations where the physicians may by appointment meet as large groups of Indians as possible for the purpose of detecting and treating incipient diseased conditions and for instruction in disease prevention.

The Indian field nursing service is considered of major importance in public health measures among Indians. Through this agency there is being taught something of the value of sunshine, fresh air, cleanliness of person and home, a proper dietary, and particularly the care of infants and small children. It is not an uncommon sight to find an Indian home, a tepee, a wickiup, or a hogan, with dirt floor and no windows, with lack of ventilation and perhaps with an advanced case of tuberculosis living therein. Spitting on the floor under such conditions is common, and infants crawl around in the dust. Here, too often, the transition from the nursing period to that of taking solid food—a dietary of meat, bread and beans—is an abrupt one. Under such conditions it is not surprising that epidemic diseases exact a heavy toll. Intestinal disorders are far too prevalent, and massive infection from tuberculosis prevails in many households.

The characteristics of these different Indian groups vary exceedingly. The Navajo of the desert lands of Arizona and New Mexico

presents a different problem from that of the Sioux Tribes of the Dakotas. Likewise, the Pueblo Indian of New Mexico leads a different existence from that of the nomadic Navajo. One is a community existence, the other is extremely individualistic.

To register accurately births, deaths, and sickness under many of these conditions is a difficult proposition. The establishment of a proper medical service and of an efficient field nursing service under these varying conditions is not an easy one. A field nursing program almost always results in having the field nurse do bedside nursing in the Indian homes. It is inevitable that a certain amount of this would occur. Whatever method of approach will bring confidence and acceptance of the principles which it is proposed to have carried out is well worth the trouble; but constant effort is necessary to prevent the full time of the field nursing force from being directed toward the relief of sickness rather than the prevention of disease. There is a large amount of chronic sickness of all sorts which has to be dealt with by palliative measures until such time as medical resources can be worked out, continuous service supplied, confidence established, and educational measures instituted.

The difficulties of maintaining good transportation facilities when roads are poor or there are none at all; the impassability of highways in winter and stormy seasons; the too rapid turnover of personnel who become discouraged by a mode of life where isolation is great and living conditions are far removed from those having the conveniences found in cities; all are important circumstances in maintaining this service for the Indians. It is a pioneer work in many respects, and these very factors deter many from entering its service or remaining in its service, except those who are able to derive their greatest satisfaction and reward from the work done.

Much criticism has been offered because of many of the conditions which have been outlined above. Indian Bureau vital statistics have been questioned, as well as the data regarding morbidity. There are many factors operating against the collection of reliable medical statistics, which mean so much in the formulation of a public health program. All of this is realized, and attempts are being made, slowly but surely, to improve and correct the collection of such data as time passes. The factors which have to be given consideration are the geographic and climatic features of the country, racial superstitions, influence of medicine men, accessibility of medical facilities, relations to Government officials, lack of diagnostic equipment in the field, language difficulties, uncertainty as to correct age and to degree of blood, and, to a very important degree, inaccuracies of the present population count which make the calculations of birth, morbidity, and mortality rates a difficult procedure.

The purpose of this article is to present briefly an outline of health conditions among the American Indians of to-day, the factors which play a major part in the solution of these important matters, and the measures which thus far have been and are being applied. The "Indian problem" in its several phases—economic, religious, educational, and health aspects—is prominently before the American people at this time. It is of great importance because each day Indians and whites are making closer and more frequent contacts. Increasing numbers of Indian children are entering public schools. Indian adults are mingling to a greater degree with white adults. The health and welfare of our Indian population is inevitably bound by the closest ties to the health and welfare of our country as a whole. These problems, while difficult and often requiring a considerable time factor in their solution, are not insuperable ones. There is need for extended and improved facilities and equipment. There is great need also of increased personnel qualified by training and experience in the several branches of their professions. This means better qualified physicians and sanitarians and increased numbers of properly qualified nurses, both for hospital and public health work. The material rewards for this work are not great; the difficulties, in what in many instances is pioneer work, are many; progress at times seems very slow; the rewards, however, are largely the rewards of service and are found in their greatest fullness in the pleasure and satisfaction of giving ourselves for the betterment of others, in the making of better citizens, in a patriotic and enduring service to the lasting benefit of our country and mankind.

If, through this brief article, there should be attracted to the work of the Indian Bureau, men and women who have the special fitness and skill to aid in and direct its manifold activities, and who, in addition, are appreciative of the opportunity to render service of the most satisfying and lasting character, I am sure that they will be able to find that opportunity in this important work among the American Indians.

THE MILK FEEDING OF CHILDREN¹

By E. BLANCHE STERLING, *Acting Assistant Surgeon, United States Public Health Service*

The modern trend in infant feeding is toward the introduction of a variety of foods into the baby's dietary at a much earlier age than was formerly considered permissible. In spite of this fact, however, milk continues to be the most important food throughout the period of infancy. Indeed, in the earliest months it is the only food, with the

¹ Prepared for the Office International d'Hygiene publique and presented by Senior Surg. Tallaferra Clark

exception of such vitamin bearing foodstuffs as orange juice, tomato juice, and cod-liver oil. If human milk is not available, some other kind of milk is provided.

BREAST MILK

The widespread employment, and apparent popularity, of artificial feeding which has prevailed in the United States seems to have suffered a decided set-back. One of our leading pediatricians has stated that, in the last two decades, breast feeding has occupied a place of steadily increasing importance in the minds of the medical profession.

As a public health measure, Sedgwick's (1) classic breast-feeding demonstration in Minneapolis has proved to be a brilliant contribution with far-reaching results. The conduct of this demonstration was based on three important contributing factors (2) as follows:

1. An interested and informed nucleus of medical men, enthusiastic over the possibilities and advantages of breast feeding and possessing a scientific grasp of the technique.

2. The birth-recording bureau of the local health department.

3. An administrative bureau, with an adequate staff of trained visiting nurses to visit every new mother within a short time of the birth of her baby.

With such an organization it was possible to keep from 92 to 96 per cent of the demonstration babies on the breast for the first month, and about 70 per cent for the first six months.

Dr. Frank Howard Richardson, of New York, is a prominent disciple of Sedgwick. The State of New York was the first to apply widely the principles of Sedgwick, and here improvements were added to the scheme which tended to make permanent the renaissance of interest in breast feeding.

Richardson's description of the progress of breast feeding in New York State (3) furnishes valuable suggestions for any community which wishes to promote universal breast feeding, with its highly desirable results.

In Nassau County, where the first New York demonstration was held, the following results were obtained:

During the period of the demonstration, January 1, 1923, to April 1, 1925, 2,815 infants were dealt with.

	Per 1,000
Infant mortality rate for the 2,815 babies	49
Infant mortality rate, Nassau County, in:	
1920	70
1921	67
1922	78
1923	64
1924	74

Percentage of breast feeding for each month of life with the 2,815 infants

Month	Per cent	Month	Per cent
First.....	92.1	Sixth.....	70.1
Second.....	87.2	Seventh.....	66.3
Third.....	82.6	Eighth.....	63.2
Fourth.....	77.4	Ninth.....	59.6
Fifth.....	73.6		

Of the babies who died during this study, 70.9 per cent were being artificially fed at death; and of these, 50 per cent died from digestive disorders. Of all the illnesses, 66.7 per cent occurred among the children who were weaned prior to the ninth month, only 33.3 per cent occurring among the babies breast fed for nine months.

In the Hornell demonstration (3), which followed that in Nassau County, 98 per cent of the babies were breast fed for one month. Wertheimer and Wolff (4) have stated that the duration of illness in breast-fed babies is one-fourth as long as in the bottle fed. Some investigators appear to think that this is partly due to the fact that, among infant foods, only breast milk contains antibodies for human disease.

HISTORY OF THE MOVEMENT IN NEW YORK

In Richardson's report on the progress of breast feeding in New York State (5) the following points were brought out:

1. The Minneapolis demonstration was repeated, and certain changes were made looking to the elimination of the friction with the medical profession, as every public health measure should have the support of the practicing physicians. Almost identical statistics were obtained in the Minneapolis and the Nassau County demonstrations.

2. About the time of the conclusion of the Nassau County demonstration, the plan of graduate education of the physicians of the State, instituted by their own organization, was just emerging from the experimental stage. An agreement was entered into between the State medical society and the division of maternity, infancy, and child hygiene of the State department of health so that any county medical society might secure instruction of its members in any phase of pediatrics or obstetrics by asking the State medical society to make the necessary arrangements, with the understanding that the State department of health would finance it out of Sheppard-Towner funds. In this way the physicians could be informed in matters relating to breast feeding at their own request and when they desired it. Infant feeding fits into any pediatric course, and breast feeding is the easiest, the best, and the most universally applicable form of infant feeding available.

3. *Daughter demonstrations.*—At the close of the original demonstration it was decided that no further demonstrations should be

undertaken except at the direct invitation of the local unit of organized medicine in the community concerned. The procedure followed was for the local society to ask for a speaker on infant feeding who would stress breast feeding. If the members of the society were sufficiently impressed with the subject to want to try out the plan in their own community some member would propose, at the business part of the session, that the effort be made as part of the activities of the society, and the appointment of a committee of the society to direct the work and keep it directly under the control of the physicians themselves usually followed.

If this committee wanted help, as it naturally would, the division of maternity, infancy, and child hygiene would send one or more of its specially trained and experienced public health nurses who had been long enough with the Nassau demonstration to become enthusiastic over its possibilities, and yet realized that the work must be kept tied up with the county society and under its control—that the problem was a medical rather than a nursing one.

The nurse then reported to the committee for instruction; and if her advice was asked (as it usually was), she would suggest a canvass of the members of the society and of the local nurses and hospital authorities, to be made by herself. This would give her an opportunity to satisfy the profession that each physician was to have complete charge of all his cases, and she could also learn the attitude of those with whom she came in contact.

The close relationship maintained with the local medical personnel has made possible even better results and more flattering statistics than were possible in either the classic Minneapolis demonstration or in the initial New York demonstration in Nassau County.

The permanence of such results is assured, for the individual physician who has once learned the importance of breast feeding continues to encourage it because it gives him results. The nurses and the hospital training schools, taking their cue from the physician, will continue their advocacy of breast feeding as a matter of routine.

4. A new phase of the movement is the inauguration, by individual public health nurses, in various parts of the State, of little centers of breast-feeding activity simply as part of their routine work.

COROLLARIES

1. To be permanent, the work must be embarked on by the physicians of the community.

2. A small medical nucleus suffices, but that nucleus is indispensable for the best results.

3. A breast-feeding demonstration makes an excellent platform on which organized medicine and the health department can do a joint

piece of work, to the furtherance of a better mutual understanding than has previously been possible.

4. It is the rather interesting experience that, whereas the general practitioner usually welcomes the new teaching with real enthusiasm, the pediatrician is likely to be harder to convince.

5. Wherever a breast-feeding demonstration comes, the use of proprietary foods and condensed milk for artificially fed babies drops to a remarkably low level, and the use of cow's milk rises.

6. It has been found possible to get for breast feeding the enthusiastic support of the trained nurses in the community.

In the Portland Infant Welfare Clinics (6), where breast feeding is especially emphasized, among 685 babies under 2 years of age the mortality was 0.8 per cent, while the coincident city death rate for the same age group was 6.5 per cent.

In spite of the fact that human milk is recognized as the best single infant food, it is equally well known that it lacks a sufficient quantity of certain food accessory factors, notably vitamins C and D. It has also been demonstrated by Macy and her co-workers (7) that the antineuritic potency, the vitamin B factor, of mixed human milk from a group of women receiving the average American dietary, is slight. Therefore, food materials rich in this important component should have a prominent place in the diet of pregnant and lactating women.

Attempts have been made to introduce the antirachitic factor in human milk through treatment of the mother, either by the administration of cod-liver oil or by irradiation. Weech (8) reported in the Bulletin of the Johns Hopkins Hospital an experiment in which varying amounts of cod-liver oil were fed to different groups of negro mothers with nursing babies, and the incidence and degree of rickets in the different groups were compared. It was shown that a certain amount of the antirachitic vitamin does pass into the mother's milk, which may be sufficient to raise the calcium-inorganic phosphorus product of the blood serum and lessen the Röntgen-ray evidences of rickets. It was not possible to show, however, that the administration of cod-liver oil to the mother is a satisfactory method of preventing rickets in the infant.

Hess, Weinstock, and Sherman (9) found that ultraviolet irradiation of a nursing woman brought about a marked increase in the antirachitic potency of her milk. This was shown to be due to an increase in the antirachitic factor.

Following the widespread propaganda in favor of breast feeding it naturally follows that an increasing number of mothers are willing to make an effort, if necessary, in order to nurse their babies. However,

in spite of this fact, there are many babies who can not be nursed by their mothers. This may be due to the serious illness or death of the mother or to the fact that the infant is too weak to perform the act of nursing. These babies are in particular need of the advantage of human milk; and in cases where babies can not be nursed by their mothers, wet nursing is supplying this need to a certain extent.

A directory for wet nurses, described by Dr. Fritz Talbot (10), was established in Boston as far back as 1910. The mothers who provide the milk are married women with negative Wassermann reaction, found to be in good health by physical examination and having healthy infants and clean homes. The milk is kept in sterile bottles, collected daily and delivered from a central office. At one time 35 mothers were supplying nearly 500 ounces of milk daily. Tampering is checked periodically by testing the chloride content, which is constant in breast milk; a too low chloride content means dilution with water, and a too high content, substitution in part by cow's milk. Only one case of tampering was found. Bacterial counts are also taken at intervals. Before distribution, the milk is strained, pooled, and boiled for one minute, allowed to cool, then restrained and put in sterile bottles. Two-thirds of the milk went to private patients who paid 25 cents an ounce; the other third to hospitals at a cost of 12 cents an ounce.

Dr. A. J. Scott describes an experiment in wet-nursing in Los Angeles(2). From May, 1925, to April 1, 1926, 26,773 ounces of breast milk were collected, at a cost of \$2,740.94, or an average cost of 12 cents an ounce. It was possible to feed 97 babies ranging in age from less than one week to more than one month. One mother sold 80 ounces of milk a day for more than four months besides feeding her own infant. For this she was paid more than \$8 a day. The mothers were paid 10 cents an ounce and their carfare.

At the 1927 meeting of the Central State Pediatric Society (11) Dr. J. R. Thompson reported the results of feeding concentrated breast milk to a group of 37 premature infants who would not take a sufficient amount of food to enable them to grow normally. The amount of concentrated milk given is never greater than the amount that the infants will take without urging. Most of the infants required an energy quotient of 250 before they would gain. Seven of the 37 babies died, and 5 of them were in the hospital less than one week.

The concentration was carried as far as necessary, up to a maximum of 4:1. Sometimes the milk caramelizes in concentrating; and when this occurs, careful examination of the milk should be made, as it may be of a quality unsuitable to feed in concentrated form.

COW'S MILK

If human milk can not be obtained for the infant, the concensus of the best opinion in the United States is rather overwhelmingly in favor of fresh cow's milk as a substitute. The adoption by many localities of the standard milk ordinance of the United States Public Health Service has resulted in a marked improvement of the quality of the raw-milk supplies. Laws and regulations adopted by various States and cities along the same lines are having good results. The United States Department of Agriculture is making progress toward the eradication of tuberculosis from the dairy herds of the country. The American Child Health Association, a nonofficial organization, has cooperated with official agencies in the nation-wide campaign for clean and safe milk. Altogether, it is felt that the United States is having considerable success in its effort to improve the quality of this second-best food for infants.

Dried milk.—When fresh milk is not available, dried milk has proved a good substitute. This statement is made on the assumption that only dried milk manufactured by the best process is to be used. It is true that the Doctors Dick (12) have found a variety of living bacteria, including streptococci, in preparations of powdered milk; but it can not be denied that good results in infant feeding have been obtained with the use of dried milk. A number of investigators (13) both in the United States and other countries, have found that the irradiation of dry milk imparts to the milk powder specific antirachitic properties, without impairing its nutritive value.

Lactic acid milk.—McKim Marriott (14), after an experience of eight years with the feeding of several hundred infants in welfare clinics, in practice, and in the hospital, is convinced that there are no disadvantages to the routine and prolonged use of lactic acid milk as far as the infants are concerned. With the addition of corn sirup the caloric value is high—from 25 to 30 calories an ounce—and the formula does not have to be changed during a large part of the first year. The baby is simply given larger amounts as he grows older. With high calorific value a smaller number of feedings per day is possible.

The chief drawback to the routine use of lactic acid milk has been the difficulty in preparation. Marriott (14) states that its preparation by the addition of lactic acid to sterilized milk has been about as suitable as bacterially soured milk, and he thinks the use of evaporated milk possesses some advantages. All evidence seems to show that vitamins A, D, and B are not injured by the processes employed in the preparation of evaporated milk. Vitamin C is destroyed, and orange or tomato juice must be used daily.

As a substitute for buttermilk, Tallerman (15) has suggested the addition of lactic acid to dried skimmed milk powder.

Goat's milk.—The use of goat's milk has never been common in this country. Since Malta fever appears to be endemic in the goat-raising district of the southwestern part of the United States, it is plain that the sale of raw goat's milk should be prohibited.

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DEATH RATE IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death, February, 1929

The accompanying table, taken from the Statistical Bulletin for March, 1929, issued by the Metropolitan Life Insurance Co., presents the mortality record of the industrial insurance department of the company for February, 1929, by principal causes of death. The rates are based on a strength of approximately 18,500,000 insured persons in the United States and Canada.

The Bulletin states:

Although health conditions in February showed marked improvement over those of January, the death rate was, nevertheless, the highest February figure since 1923. In that year, as in the current year, the presence of epidemic influenza was the chief cause of the high mortality. In February, 1929, no less than 3,821 deaths, or nearly one-fourth of the total for all causes, were charged to influenza and pneumonia. The considerably increased death rates for heart disease, chronic nephritis, and cerebral hemorrhage were also due in large part to deaths, hastened by influenza, of persons suffering from these chronic conditions. Influenza has also been a factor in the increased mortality from tuberculosis, diabetes, and puerperal diseases. Other causes for which more or less higher rates prevailed than during February, 1928, are whooping cough, respiratory conditions other than pneumonia, suicides, and homicides. Two noteworthy drops were recorded, namely, for diphtheria and automobile fatalities.

The cumulative death rate at the end of February was 12.5 per 1,000, or 31.9 per cent in excess of that for the corresponding months of 1928 (9.4).

On the Pacific coast, the February mortality rate was identical with that of last year, and the cumulative figure for January and February was only slightly above that for 1928. In that part of the country the influenza outbreak ran its course earlier than in the other sections of the United States. In Canada the February death rate was 9.8 per 1,000 against 8.7 in 1928, while the cumulative figure for January-February was 12.1 against 8.8 in 1928. Influenza took a particularly heavy toll of lives in Canada during January and February.

The record for the first two months of 1929 is strongly indicative of another "whooping cough year," as the cumulative death rate for this disease is running double that for 1928. It must be borne in mind that the months in which the mortality from this disease is usually highest come later in the year. Unless there is marked improvement during the remainder of 1929, a higher whooping-cough mortality rate will be recorded than for any year since 1918.

A distinctly discouraging item is the very high death rate for diabetes. Both the January and February figures for this disease were the highest ever recorded for these months among the industrial policyholders. The cumulative rate at the end of February was 34.6 per cent in excess of that for the corresponding period of 1928. The year 1928 registered the highest diabetes death rate ever recorded among these policyholders; but unless there is a pronounced change for the better during the remainder of 1929, the mortality this year will rise sharply to a peak far in excess of any figure ever recorded for the United States and Canada.

The tuberculosis death rate is 7.9 per cent in excess of that for January-February of last year. The trend for this disease, nevertheless, has been persistently downward, for years; and there is good ground for the hope that conditions will so readjust themselves during the remainder of 1929 as to counterbalance the increased mortality in the early months.

Death rates (annual basis) per 100,000 for principal causes of death

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Death rate per 100,000 lives exposed ¹				
	Febru- ary, 1929	January, 1929	Febru- ary, 1928	Cumulative, Janu- ary and February	
				1929	1928
Total, all causes.....	1, 135.6	1, 344.9	943.5	1, 245.2	944.2
Typhoid fever.....	0.8	1.8	1.7	1.4	1.7
Measles.....	4.2	3.2	4.2	3.6	4.0
Scarlet fever.....	3.4	4.2	4.4	3.8	4.0
Whooping cough.....	7.2	9.3	4.1	8.3	4.2
Diphtheria.....	9.8	13.4	12.6	11.7	13.8
Influenza.....	104.4	197.7	25.6	153.3	25.5
Tuberculosis (all forms).....	94.0	94.0	89.5	94.0	87.1
Tuberculosis of respiratory system.....	84.5	84.6	78.6	84.6	76.3
Cancer.....	74.3	80.9	76.3	77.7	75.3
Diabetes mellitus.....	22.2	28.2	18.6	25.3	18.8
Cerebral hemorrhage.....	66.0	68.3	57.9	67.2	68.7
Organic diseases of heart.....	181.0	202.3	149.4	192.2	150.1
Pneumonia (all forms).....	160.4	212.8	117.4	187.8	114.2
Other respiratory diseases.....	22.0	26.2	18.2	24.2	18.5
Diarrhea and enteritis.....	13.7	14.2	14.0	14.0	13.4
Bright's disease (chronic nephritis).....	79.5	85.7	75.5	82.7	77.5
Puerperal state.....	14.7	14.9	13.3	14.8	13.5
Suicides.....	8.0	8.7	7.0	8.4	7.2
Homicides.....	6.8	6.7	5.6	6.8	5.9
Other external causes (excluding suicides and homi- cides).....	55.5	62.1	55.6	58.9	59.1
Traumatism by automobiles.....	12.6	17.8	15.8	15.3	15.9
All other causes.....	207.6	210.4	192.6	209.1	191.8

¹ All figures include infants insured under 1 year of age.**COURT DECISION RELATING TO PUBLIC HEALTH**

Bovine tuberculosis eradication law construed.—(Iowa Supreme Court; *Thede et al. v. Thornburg*, State Secretary of Agriculture, et al., 223 N. W. 386; decided February 5, 1929.) In 1924, Cedar County was enrolled under the county area plan for the eradication of bovine tuberculosis. In 1926, additional petitions and agreements having been filed, the Secretary of Agriculture enrolled said county as an accredited area. An action was then instituted to enjoin further proceedings under the accredited area plan.

The plaintiffs first challenged the original proceedings under which the county area plan was adopted, contending that the county auditor did not certify the original petitions and the signatures thereto to the Secretary of Agriculture, as the basis for the enrollment of the county under the county area plan, but only copies of the petitions and a certified typewritten list of the signers. The Supreme Court, in holding that this was a substantial compliance with the statute, said:

Under these sections [Code, secs. 2684, 2685] it can not fairly be contended that it was necessary for the county auditor to certify to numerous petitions which were identical except to the signatures thereto. No useful purpose could be served by filing a large number of copies of the petition. It may be that duplicate copies of the petition were circulated and signed, but the statute contemplates that a copy of the petition shall be filed with the Secretary of Agriculture, and the names of all who signed this petition (or a duplicate copy thereof) were duly certified. This was a substantial compliance with the statute. * * *

After the petitions and agreements for the enrollment of the county under the county area plan had been signed and filed, certain of the

signers attempted to withdraw their signatures. The plaintiffs and defendants stipulated that, if signatures could legally be withdrawn, there were sufficient withdrawals on file with the Secretary of Agriculture to defeat the enrollment of Cedar County under the accredited area plan. Concerning this the court said:

Under the record it appears that prima facie there were a sufficient number of signed agreements before the Secretary of Agriculture to meet the requirements of the statute. "This gave him jurisdiction, and the withdrawal of some of said signatures before final action would not take away such jurisdiction.["] Such was our pronouncement in the recent case of *Peverill v. Board of Supervisors et al.* (Iowa) 222 N. W. 535, filed December 14, 1928. * * *

At the hearing in relation to the enrollment of the county under the accredited area plan the Secretary of Agriculture did not personally attend, his place being taken by the head of the division of animal industry. The Secretary acted on the record made before such division head. The plaintiffs contended that the Secretary had no jurisdiction to pass on such enrollment as an accredited area because he did not appear in person. The court held that the then existing statute required a hearing before the Secretary personally, that because of the absence of such a hearing the Secretary did not acquire jurisdiction to make the order designating Cedar County as an accredited area, and that such order was, therefore, void. Concerning these points the court said:

At the time the proceedings we are considering were had, the statute provided for the giving of notice and a hearing before the Secretary of Agriculture. This was an essential step in the validity of the proceedings for the establishment of a county as an accredited area. The legislature saw fit to provide for such notice and hearing and designated that the hearing should be "before the Secretary of Agriculture." We do not think that it was sufficient compliance with the requirements of this statute that the hearing be had before some person who might be designated by the Secretary of Agriculture to sit at said hearing, and this is true even though the proceedings had at the hearing before said party were all reported in extenso to the Secretary of Agriculture and were considered by him. We can not extend the terms of the statute. There was no provision for the designation of a commissioner or any other person to sit in the place and stead of the Secretary of Agriculture at the hearing. The statute contemplated something more than a mere review of a record by the Secretary of Agriculture. The statute calls for something more than a mere ministerial act. Where an act to be done involves judgment or discretion, it can not be delegated to an agent. * * *

The important question for our consideration at this point is whether or not the Secretary of Agriculture had jurisdiction to enroll said county as an accredited area, because of his failure to have said hearing before him. * * * A prerequisite to his right to enter such order was that such a hearing as the statute contemplates should be had before him. The giving of a notice and such a hearing were by legislative enactment made prerequisites to the power conferred upon the Secretary of Agriculture to enroll such county as an accredited area. This being true, the Secretary of Agriculture did not acquire jurisdiction to make such order in the manner pointed out by the statute. There was no hearing before him, and therefore there was no basis upon which he could make the order in question. In a very proper sense it may be said that he did not have any juris-

diction of the subject matter to enter such an order, and, being wanting in jurisdiction, the order was necessarily void. We see no escape from the conclusion at this point that the order of the Secretary of Agriculture designating said county as an accredited area was without jurisdiction and hence was void. This being true, the appellants could invoke the aid of a court of equity to enjoin further proceedings under said order designating said county under the accredited area plan. * * *

DEATHS DURING WEEK ENDED APRIL 6, 1929

Summary of information received by telegraph from industrial insurance companies for the week ended April 6, 1929, and corresponding week of 1928. (From the Weekly Health Index, April 10, 1929, issued by the Bureau of the Census, Department of Commerce)

	Week ended Apr. 6, 1929	Corresponding week, 1928
Policies in force.....	73, 813, 366	70, 872, 688
Number of death claims.....	16, 414	12, 847
Death claims per 1,000 policies in force, annual rate.....	11. 6	9. 5

Deaths from all causes in certain large cities of the United States during the week ended April 6, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928. (From the Weekly Health Index, April 10, 1929, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Apr. 6, 1929		Annual death rate per 1,000, corre- sponding week, 1928	Deaths under 1 year		Infant mortality rate, week ended Apr. 6, 1929 ¹
	Total deaths	Death rate ¹		Week ended Apr. 6, 1929	Corre- sponding week, 1928	
Total (62 cities).....	7, 676	13. 7	14. 9	763	948	68
Akron.....	47			7	6	72
Albany.....	39	16. 9	18. 2	4	8	79
Atlanta.....	83	17. 0	12. 7	11	3	114
White.....	37			6	2	
Colored.....	46	(²)	(²)	5	1	
Baltimore.....	250	15. 7	16. 0	26	38	83
White.....	186			17	28	68
Colored.....	64	(²)	(²)	9	10	143
Birmingham.....	70	16. 5	18. 8	11	10	100
White.....	30			5	3	75
Colored.....	40	(²)	(²)	6	7	137
Boston.....	227	14. 9	17. 6	18	45	50
Bridgeport.....	27			2	3	35
Buffalo.....	155	14. 6	15. 1	22	17	95
Cambridge.....	37	15. 4	18. 3	2	3	36
Camden.....	34	13. 1	21. 6	6	8	104
Canton.....	22	9. 8	8. 1	1	1	24
Chicago.....	757	12. 5	15. 8	73	94	65
Cincinnati.....	129			12	14	70
Cleveland.....	198	10. 2	12. 5	17	15	50
Columbus.....	67	11. 7	16. 3	1	8	9
Dallas.....	61	14. 6	14. 4	9	9	
White.....	44			5	6	
Colored.....	17	(²)	(²)	4	3	
Dayton.....	38	10. 8	13. 6	3	3	48
Denver.....	87	15. 5	16. 4	15	8	145
Des Moines.....	31	10. 7	11. 7	2	3	36
Detroit.....	367	13. 9	14. 2	53	79	85
Duluth.....	21	9. 4	11. 2	2	2	48
El Paso.....	32	14. 2	22. 2	8	8	
Erie.....	28			1	3	20
Fall River.....	33	12. 8	10. 1	2	4	38
Flint.....	34	11. 9	8. 1	3	2	36
Grand Rapids.....	44	14. 0	8. 9	10	6	151
Houston.....	59			8	9	
White.....	41			7	8	
Colored.....	18	(²)	(²)	1	1	
Indianapolis.....	112	15. 3	16. 6	4	8	32
White.....	94			3	7	28
Colored.....	18	(²)	(²)	1	1	60

Footnotes at the end of the table.

Deaths from all causes in certain large cities of the United States during the week ended April 6, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928—Continued

City	Week ended Apr. 6, 1929		Annual death rate per 1,000, corresponding week, 1928	Deaths under 1 year		Infant mortality rate, week ended Apr. 6, 1929 ¹
	Total deaths	Death rate ¹		Week ended Apr. 6, 1929	Corresponding week, 1928	
Jersey City	73	11.8	13.4	8	8	62
Kansas City, Kans.	34	15.0	11.9	3	0	66
White	24			3	0	76
Colored	10	(²)	(²)	0	0	0
Kansas City, Mo.	106	14.2	15.1	7	6	59
Knoxville	23	11.4	15.9	1	5	22
White	12			0	4	24
Colored	11	(²)	(²)	1	1	0
Los Angeles	277			24	17	70
Louisville	67	10.6	17.5	3	11	24
White	48			3	10	28
Colored	19	(²)	(²)	0	1	0
Lowell	39			4	1	91
Lynn	21	10.4	7.9	2	1	55
Memphis	74	20.3	19.2	9	2	106
White	38			5	1	95
Colored	36	(²)	(²)	4	1	125
Milwaukee	139	13.4	12.6	28	22	123
Minneapolis	99	11.4	11.8	7	12	43
Nashville	54	20.2	24.0	3	7	48
White	32			3	2	65
Colored	22	(²)	(²)	0	5	0
New Bedford	27			3	4	64
New Haven	41	11.4	11.7	2	8	31
New Orleans	149	18.1	19.0	9	13	45
White	89			5	6	35
Colored	60	(²)	(²)	4	7	67
New York	1,588	13.8	16.2	172	222	70
Bronx Borough	195	10.7	12.6	23	15	68
Brooklyn Borough	516	11.7	14.0	55	95	56
Manhattan Borough	657	19.6	22.9	67	81	82
Queens Borough	178	10.9	12.2	23	22	94
Richmond Borough	42	14.6	16.7	4	9	72
Newark, N. J.	125	13.8	12.8	14	20	74
Oakland	65	12.4	12.4	4	6	44
Oklahoma City	38			10	3	200
Omaha	64	15.0	12.7	5	7	58
Paterson	53	19.1	11.9	8	5	141
Philadelphia	552	14.0	15.0	48	53	68
Pittsburgh	194	15.1	16.3	26	25	89
Portland, Oreg.	82			6	8	69
Providence	80	14.6	16.1	10	7	88
Richmond	52	14.0	13.4	5	6	70
White	27			3	4	64
Colored	25	(²)	(²)	2	2	82
Rochester	79	12.6	13.5	8	9	68
St. Louis	249	15.4	14.3	13	22	44
St. Paul	53			3	3	81
Salt Lake City ⁴	31	11.7	9.5	3	3	46
San Antonio	71	17.0	16.8	6	16	0
San Diego	46	20.1	16.2	0	0	38
San Francisco	174	15.5	12.9	6	5	32
Schenectady	22	12.3	12.9	1	3	32
Seattle	78	10.6	10.0	3	3	108
Somerville	15	7.6	13.2	3	6	132
Springfield, Mass.	45	15.7	10.5	8	4	108
Syracuse	52	13.6	15.2	9	6	26
Tacoma	26	12.3	10.9	1	7	19
Toledo	70	11.7	14.2	2	7	91
Trenton	44	16.6	14.7	5	6	53
Washington, D. C.	125	11.8	13.0	9	15	8
White	68			1	11	152
Colored	57	(²)	(²)	8	4	51
Waterbury	18			2	0	104
Wilmington, Del.	39	15.9	11.4	4	5	47
Yonkers	26	11.2	11.6	2	3	43
Youngstown	32	9.6	10.5	3	7	

¹ Annual rate per 1,000 population.

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

³ Data for 70 cities.

⁴ Deaths for week ended Friday.

⁵ In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended April 6, 1929, and April 7, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 6, 1929, and April 7, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928
New England States:								
Maine.....	7	-----	7	8	293	25	1	0
New Hampshire.....	3	1	13	-----	37	7	0	0
Vermont.....	2	-----	-----	-----	2	56	0	0
Massachusetts.....	70	76	18	14	399	1,948	6	1
Rhode Island.....	14	7	1	-----	87	242	0	0
Connecticut.....	23	25	19	9	587	371	4	3
Middle Atlantic States:								
New York.....	208	332	135	177	1,268	2,829	42	36
New Jersey.....	114	92	10	23	343	1,354	2	5
Pennsylvania.....	199	135	-----	-----	2,291	1,518	35	7
East North Central States:								
Ohio.....	53	78	110	34	1,418	814	8	2
Indiana.....	16	22	-----	21	491	272	0	0
Illinois.....	136	167	34	228	1,635	226	19	13
Michigan.....	69	60	13	8	739	1,744	88	5
Wisconsin.....	20	27	30	360	914	127	0	7
West North Central States:								
Minnesota.....	13	23	-----	2	682	53	1	2
Iowa.....	4	14	-----	-----	26	25	0	0
Missouri.....	30	37	1	57	107	392	21	7
North Dakota.....	6	5	-----	19	83	2	2	4
South Dakota.....	3	-----	-----	15	38	56	0	0
Nebraska.....	18	6	10	303	81	28	2	3
Kansas.....	15	12	21	16	432	117	8	1
South Atlantic States:								
Delaware.....	4	3	-----	-----	28	14	0	0
Maryland.....	28	30	40	27	105	753	1	0
District of Columbia.....	8	15	1	2	21	234	1	1
Virginia.....	-----	-----	-----	-----	-----	-----	-----	-----
West Virginia.....	7	34	28	26	310	131	1	2
North Carolina.....	16	43	-----	45	2,736	-----	0	0
South Carolina.....	10	36	558	784	22	1,177	0	0
Georgia.....	10	7	44	121	16	143	1	2
Florida.....	8	5	3	8	79	42	0	0

¹ New York City only.

¹ Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 6, 1929, and April 7, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928
East South Central States:								
Kentucky.....		10		33	70	345	2	0
Tennessee.....	5	11	22	185	19	309	1	1
Alabama.....	10	10	59	332	190	443	3	1
Mississippi.....	10	9						
West South Central States:								
Arkansas.....	3	6	31	222	135	244	3	0
Louisiana.....	10	31	30	27	68	222	8	
Oklahoma ¹	12	20	74	579	74	314	5	5
Texas.....	29	53	166	611	207	561	2	1
Mountain States:								
Montana.....	7	1			110	2	2	7
Idaho.....	1		2		1		7	1
Wyoming.....	1			6	28	21	0	2
Colorado.....	8	15	1	1	27	183	10	16
New Mexico.....	10	5	13	4	1	166	0	0
Arizona.....	2	5	1	129		33	11	2
Utah ¹	9	1			10	6	4	4
Pacific States:								
Washington.....	5	10	3	1	138	151	8	9
Oregon.....	7	6	69	36	171	77	2	3
California.....	36	91	74	25	49	125	14	4

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928
New England States:								
Maine.....	0	0	86	15	14	0	2	4
New Hampshire.....	0	0	16	3	0	0	0	0
Vermont.....	0	0	4	2	5	0	0	0
Massachusetts.....	1	4	303	316	5	0	2	1
Rhode Island.....	0	0	20	33	0	0	0	0
Connecticut.....	0	0	66	95	0	0	0	1
Middle Atlantic States:								
New York.....	3	1	652	873	0	0	12	14
New Jersey.....	0	3	179	290	0	25	2	5
Pennsylvania.....	1	1	570	367	0	1	22	13
East North Central States:								
Ohio.....	4	2	290	347	44	58	8	16
Indiana.....	0	0	219	124	92	138	12	3
Illinois.....	0	1	408	329	113	37	6	12
Michigan.....	2	0	532	239	37	24	10	9
Wisconsin.....	0	0	192	185	3	17	1	3
West North Central States:								
Minnesota.....	0	2	97	120	2	1	11	6
Iowa.....	0	0	149	80	45	56	0	0
Missouri.....	0	1	64	96	46	76	5	1
North Dakota.....	0	0	22	50	0	1	2	2
South Dakota.....	0	0	32	53	27	29	0	2
Nebraska.....	0	0	146	109	47	53	5	0
Kansas.....	0	0	183	154	79	79	3	2
South Atlantic States:								
Delaware.....	0	0	6	2	0	0	0	0
Maryland ¹	0	0	50	57	0	2	2	7
District of Columbia.....	0	0	22	40	0	2	0	0
Virginia.....		1			12			
West Virginia.....	0	0	39	51	15	80	6	8
North Carolina.....	0	0	30	26	23	60	2	1
South Carolina.....	1	1	16	3	4	14	2	9
Georgia.....	0	0	17	18	0	0	8	6
Florida.....	0	0	1	9	1	7	3	3

¹ Week ended Friday.

¹ Figures for 1929 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 6, 1929, and April 7, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928	Week ended Apr. 6, 1929	Week ended Apr. 7, 1928
East South Central States:								
Kentucky.....	1	0	152	74	3	40	0	0
Tennessee.....	0	1	41	25	7	27	2	5
Alabama.....	0	0	17	8	10	7	4	7
Mississippi.....	0	2	7	12	0	2	8	11
West South Central States:								
Arkansas.....	0	0	8	19	6	16	6	1
Louisiana.....	0	0	43	8	8	14	2	10
Oklahoma ¹	0	0	49	55	103	151	8	6
Texas.....	0	0	88	145	128	146	6	14
Mountain States:								
Montana.....	0	0	25	15	3	22	4	2
Idaho.....	0	0	3	11	31	8	0	3
Wyoming.....	0	0	8	31	5	2	0	0
Colorado.....	0	1	43	121	18	15	0	0
New Mexico.....	0	1	17	15	1	3	3	0
Arizona.....	0	0	8	5	17	28	1	0
Utah ¹	0	0	8	5	2	12	0	0
Pacific States:								
Washington.....	0	1	38	48	33	38	6	9
Oregon.....	1	0	52	11	34	47	1	3
California.....	1	4	413	120	58	21	5	3

¹ Week ended Friday

² Figures for 1929 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,565,000. The estimated population of the 91 cities reporting deaths is more than 29,995,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended March 30, 1929, and March 31, 1928

	1929	1928	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
46 States.....	1,393	1,728	-----
98 cities.....	779	831	937
Measles:			
43 States.....	13,301	19,783	-----
98 cities.....	4,352	8,169	-----
Meningococcus meningitis:			
46 States.....	331	131	-----
98 cities.....	121	59	-----
Poliomyelitis:			
46 States.....	13	32	-----
Scarlet fever:			
46 States.....	5,383	5,276	-----
98 cities.....	1,931	1,800	1,515
Smallpox:			
46 States.....	1,025	1,253	-----
98 cities.....	95	149	107
Typhoid fever:			
46 States.....	190	177	-----
98 cities.....	58	33	30
<i>Deaths reported</i>			
Influenza and pneumonia:			
91 cities.....	1,011	1,441	-----
Smallpox:			
91 cities.....	1	0	-----
Chicago, Ill.....	1	0	-----

City reports for week ended March 30, 1929

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

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1920 is included. In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1928, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland.....	78,600	4	1	0		1	71	0	0
New Hampshire:									
Concord.....	(1)	0	0	1		0	1	0	0
Nashua.....	(1)	0	0	0		0	0	0	2
Vermont:									
Barre.....	(1)	0	0	0		0	0	3	0
Massachusetts:									
Boston.....	799,200	37	38	25	8	1	10	27	34
Fall River.....	134,300	2	3	4		0	11	1	2
Springfield.....	149,800	9	3	4		0	10	1	3
Worcester.....	197,600	3	4	0	3	0	4	0	1
Rhode Island:									
Pawtucket.....	73,100	2	1	0		0	10	0	4
Providence.....	286,300	0	9	6	1	0	45	0	8
Connecticut:									
Bridgeport.....	(1)	1	6	1		0	7	2	7
Hartford.....	172,300	2	6	3		0	37	10	8
New Haven.....	187,900	7	2	1		0	2	0	9
MIDDLE ATLANTIC									
New York:									
Buffalo.....	555,800	19	12	12		2	16	3	23
New York.....	6,017,500	310	254	272	33	13	97	234	211
Rochester.....	328,200	8	11	8		0	33	15	6
Syracuse.....	199,300	28	7	0		1	2	4	9
New Jersey:									
Camden.....	135,400	5	6	10	1	1	4	0	3
Newark.....	473,600	48	16	46	5	0	12	63	14
Trenton.....	139,000	4	3	2	0	0	1	0	6
Pennsylvania:									
Philadelphia.....	2,064,200	106	70	23	4	2	75	7	67
Pittsburgh.....	673,800	36	20	8	3	6	20	9	30
Reading.....	115,400	5	2	6		0	60	0	4
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	413,700	18	10	3	1	3	3	0	10
Cleveland.....	1,010,300	77	28	17	12	5	545	6	33
Columbus.....	299,000	3	4	0	4	3	43	0	6
Toledo.....	313,200	10	4	2	1	1	21	3	3
Indiana:									
Fort Wayne.....	105,300	7	2	1		0	0	0	0
Indianapolis.....	382,100	37	5	1		0	143	10	14
South Bend.....	86,100	5	1	0		0	43	0	2
Terre Haute.....	73,500	1	1	2		0	8	0	4
Illinois:									
Chicago.....	3,157,400	87	74	114	14	7	787	22	61
Springfield.....	67,200	9	1	1	2	2	1	0	0
Michigan:									
Detroit.....	1,378,900	62	48	40	12	3	49	38	51
Flint.....	148,800	9	3	1		1	7	5	3
Grand Rapids.....	164,200	2	2	0		0	189	2	3

¹ No estimate of population made.

City reports for week ended March 30, 1929—Continued

Division, State, and city	Population, July 1, 1928, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha.....	56,500	10	1	0	-----	0	51	0	1
Milwaukee.....	544,200	71	16	5	1	1	513	13	16
Racine.....	74,400	9	2	1	-----	0	113	1	3
Superior.....	(¹)	6	1	0	-----	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	116,800	7	1	0	-----	0	0	34	1
Minneapolis.....	455,900	57	14	4	-----	0	110	15	5
St. Paul.....	(¹)	8	11	3	-----	1	257	7	9
Iowa:									
Davenport.....	(¹)	6	0	0	-----	0	0	0	-----
Des Moines.....	151,900	3	2	0	-----	0	0	0	-----
Sioux City.....	80,000	0	1	1	-----	-----	3	0	-----
Waterloo.....	37,100	1	0	0	-----	-----	12	40	-----
Missouri:									
Kansas City.....	391,000	24	5	3	-----	2	356	6	19
St. Joseph.....	78,500	2	1	1	-----	0	11	0	2
St. Louis.....	848,100	34	40	56	6	2	14	8	-----
North Dakota:									
Fargo.....	(¹)	2	0	0	-----	0	0	0	1
Grand Forks.....	(¹)	0	0	0	-----	-----	0	0	-----
South Dakota:									
Aberdeen.....	(¹)	1	0	0	-----	-----	5	8	-----
Sioux Falls.....	(¹)	0	0	0	-----	-----	3	0	-----
Nebraska:									
Omaha.....	222,800	5	2	3	-----	0	15	0	10
Kansas:									
Topeka.....	62,800	21	1	0	5	0	143	1	2
Wichita.....	99,300	18	2	1	-----	1	6	19	1
SOUTH ATLANTIC									
Delaware:									
Wilmington.....	128,500	3	2	3	-----	0	11	1	10
Maryland:									
Baltimore.....	830,400	64	28	12	6	3	1	163	29
Cumberland.....	(¹)	0	0	1	1	2	0	1	3
Frederick.....	(¹)	1	0	0	-----	0	0	0	0
District of Columbia:									
Washington.....	552,000	19	12	9	-----	0	18	0	8
Virginia:									
Lynchburg.....	38,600	4	1	1	-----	0	8	122	3
Norfolk.....	184,200	32	2	1	1	0	6	99	0
Richmond.....	194,400	1	2	3	-----	0	4	7	6
Roanoke.....	64,600	5	0	0	-----	1	0	1	2
West Virginia:									
Charleston.....	55,200	8	1	0	1	1	105	0	1
Wheeling.....	(¹)	1	1	0	-----	1	56	3	7
North Carolina:									
Raleigh.....	(¹)	6	1	0	-----	0	6	0	0
Wilmington.....	39,100	32	0	0	-----	0	0	3	2
Winston-Salem.....	80,000	14	1	0	-----	0	0	0	4
South Carolina:									
Charleston.....	75,000	0	0	1	18	0	0	0	0
Columbia.....	50,600	17	0	0	-----	0	1	4	2
Georgia:									
Atlanta.....	255,100	6	3	2	21	3	10	1	6
Brunswick.....	(¹)	7	0	0	-----	0	0	0	1
Savannah.....	99,900	4	1	1	11	1	1	0	1
Florida:									
Miami.....	156,700	18	4	3	4	0	67	1	0
St. Petersburg.....	53,300	-----	-----	-----	-----	-----	-----	-----	-----
Tampa.....	113,400	3	1	2	-----	0	0	1	0

¹ No estimate of population made.

City reports for week ended March 30, 1929—Continued

Division, State, and city	Population, July 1, 1928, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington.....	59,600	0	0	0	-----	0	0	0	3
Tennessee:									
Memphis.....	190,200	18	4	1	-----	2	0	0	8
Nashville.....	139,600	1	0	1	-----	0	0	0	4
Alabama:									
Birmingham.....	222,400	6	1	1	-----	6	3	1	7
Mobile.....	69,600	0	0	3	-----	4	7	0	1
Montgomery.....	63,100	13	0	0	-----		3	0	-----
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith.....	(1)	1	0	0	-----		0	2	-----
Little Rock.....	79,200	1	1	0	-----	0	1	2	1
Louisiana:									
New Orleans.....	429,400	0	8	6	2	3	10	0	14
Shreveport.....	81,300	5	0	0	-----	0	0	0	3
Oklahoma:									
Tulsa.....	170,500	18	2	0	-----		8	5	-----
Texas:									
Dallas.....	217,800	12	5	6	-----	0	11	0	8
Fort Worth.....	170,600	7	2	5	2	4	22	0	1
Galveston.....	50,600	0	0	0	-----	0	0	0	1
Houston.....	(1)	3	2	9	-----	1	3	0	3
San Antonio.....	218,100	1	1	10	-----	5	0	2	2
MOUNTAIN									
Montana:									
Billings.....	(1)	2	0	0	-----	0	0	0	0
Great Falls.....	(1)	1	0	0	-----	0	23	1	0
Helena.....	(1)	0	0	0	-----	0	5	0	1
Missoula.....	(1)	0	0	0	-----	0	5	0	1
Idaho:									
Boise.....	(1)	1	0	0	-----	0	1	0	0
Colorado:									
Denver.....	294,200	42	9	5	1	5	4	21	7
Pueblo.....	44,200	22	1	0	-----	1	9	6	2
New Mexico:									
Albuquerque.....	(1)	0	0	0	-----	0	0	1	1
Utah:									
Salt Lake City.....	138,000	13	2	0	-----	0	0	199	4
Nevada:									
Reno.....	(1)	0	0	0	-----	0	0	0	0
PACIFIC									
Washington:									
Seattle.....	383,200	13	5	0	-----		0	8	-----
Spokane.....	109,100	6	1	1	-----		64	0	-----
Tacoma.....	110,500	10	1	0	1	0	3	11	2
Oregon:									
Portland.....	(1)	8	8	5	1	1	30	7	9
Salem.....	(1)	0	0	0	-----	1	1	7	1
California:									
Los Angeles.....	(1)	58	44	7	25	2	23	30	38
Sacramento.....	75,700	7	2	0	3	2	0	4	6
San Francisco.....	585,300	15	21	4	11	1	6	21	2

1 No estimate of population made.

City reports for week ended March 30, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re-ported	Typhoid fever			Whoop- ing cough, cases re-ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND											
Maine:											
Portland.....	4	17	0	0	0	0	0	1	0	8	21
New Hampshire:											
Concord.....	0	0	0	0	0	0	0	0	0	4	2
Nashua.....	1	0	0	0	0	2	0	0	0	0	18
Vermont:											
Barre.....	0	0	0	0	0	2	0	0	0	1	7
Massachusetts:											
Boston.....	82	85	0	5	0	7	1	0	0	40	222
Fall River.....	5	7	0	0	0	1	1	0	0	5	23
Springfield.....	7	10	0	0	0	2	0	0	0	1	40
Worcester.....	11	11	0	0	0	1	1	0	0	6	40
Rhode Island:											
Pawtucket.....	2	4	0	0	0	1	0	0	0	1	20
Providence.....	10	23	0	0	0	4	0	1	0	0	78
Connecticut:											
Bridgeport.....	12	1	0	0	0	3	0	0	0	0	37
Hartford.....	5	12	0	0	0	3	0	0	0	5	34
New Haven.....	11	4	0	(?)	0	2	1	0	0	0	34
MIDDLE ATLANTIC											
New York:											
Buffalo.....	26	38	0	0	0	7	0	0	0	23	141
New York.....	348	356	0	0	0	83	8	7	0	54	1,569
Rochester.....	14	10	0	0	0	4	0	0	0	15	93
Syracuse.....	14	6	0	0	0	2	0	0	0	51	78
New Jersey:											
Camden.....	7	10	0	0	0	0	0	0	0	9	30
Newark.....	38	24	0	0	0	11	0	0	0	29	117
Trenton.....	5	6	0	0	0	2	1	0	0	0	45
Pennsylvania:											
Philadelphia.....	103	64	0	0	0	27	2	2	0	63	443
Pittsburgh.....	30	21	0	0	0	5	0	1	1	40	174
Reading.....	4	13	0	0	0	1	0	0	0	12	25
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	19	114	1	2	0	4	0	1	0	20	145
Cleveland.....	39	32	0	0	0	14	1	0	0	62	214
Columbus.....	12	7	1	1	0	1	0	1	0	18	76
Toledo.....	14	17	1	0	0	6	0	0	0	51	77
Indiana:											
Fort Wayne.....	6	2	1	1	0	1	0	23	0	0	21
Indianapolis.....	10	81	9	2	0	4	0	0	0	51	114
South Bend.....	3	4	0	0	0	1	0	0	0	0	19
Terre Haute.....	3	2	0	0	0	1	0	0	0	1	29
Illinois:											
Chicago.....	130	164	2	4	1	66	2	0	0	55	757
Springfield.....	3	9	0	0	0	2	0	0	0	2	21
Michigan:											
Detroit.....	104	206	2	3	0	25	1	1	0	95	377
Flint.....	9	29	2	6	0	5	0	0	0	3	29
Grand Rapids.....	9	12	0	7	0	0	0	0	0	27	31
Wisconsin:											
Kenosha.....	3	1	1	0	0	0	0	0	0	5	7
Milwaukee.....	30	37	0	0	0	10	0	0	0	100	127
Racine.....	5	3	0	0	0	1	0	0	0	2	19
Superior.....	4	7	1	0	0	0	0	0	0	2	8
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	9	8	1	0	0	3	0	0	0	1	19
Minneapolis.....	51	11	1	0	0	4	0	0	0	30	85
St. Paul.....	33	15	0	0	0	2	0	0	0	30	57

*Three cases of smallpox reported as occurring in January.

City reports for week ended March 30, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culo- sis, deaths reported	Typhoid fever			Whoop- ing cough, cases re-ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
WEST NORTH CENTRAL—CON.											
Iowa:											
Davenport.....	2	2	2	1	-----	-----	0	0	-----	0	-----
Des Moines.....	6	25	2	0	-----	-----	0	0	-----	0	41
Sioux City.....	2	0	1	0	-----	-----	0	0	-----	2	-----
Waterloo.....	2	39	0	4	-----	-----	0	0	-----	14	-----
Missouri:											
Kansas City.....	11	32	3	0	0	8	0	0	0	13	129
St. Joseph.....	2	0	0	0	0	0	0	0	0	1	36
St. Louis.....	37	20	3	0	0	12	1	4	0	47	228
North Dakota:											
Fargo.....	2	1	0	0	0	2	0	0	0	4	9
Grand Forks.....	1	0	0	0	-----	-----	0	0	-----	0	-----
South Dakota:											
Aberdeen.....	3	0	0	1	-----	-----	0	0	-----	0	-----
Sioux Falls.....	2	0	0	4	-----	-----	0	0	-----	0	14
Nebraska:											
Omaha.....	4	5	4	8	0	3	0	0	0	5	50
Kansas:											
Topeka.....	3	2	1	0	0	0	0	0	0	9	11
Wichita.....	4	28	1	1	0	0	0	0	0	12	16
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	5	3	0	0	0	0	0	0	0	3	28
Maryland:											
Baltimore.....	34	33	0	0	0	12	2	0	0	107	209
Cumberland.....	1	3	0	0	0	0	0	0	0	0	19
Frederick.....	2	0	0	0	0	0	0	0	0	0	3
District of Colum- bia:											
Washington.....	25	28	1	0	0	12	1	1	0	17	134
Virginia:											
Lynchburg.....	0	0	0	0	0	0	0	0	0	8	15
Norfolk.....	1	2	0	0	0	2	0	0	0	30	-----
Richmond.....	3	12	0	0	0	2	0	0	0	8	50
Roanoke.....	1	1	0	0	0	1	0	0	0	0	21
West Virginia:											
Charleston.....	0	1	0	0	0	0	0	1	0	4	15
Wheeling.....	2	1	0	0	0	0	0	1	0	11	18
North Carolina:											
Raleigh.....	0	1	0	0	0	1	0	0	0	16	11
Wilmington.....	0	1	0	2	0	1	0	0	0	1	9
Winston-Sa- lem.....	1	0	3	0	0	3	0	0	0	16	17
South Carolina:											
Charleston.....	0	0	0	1	0	1	0	0	0	0	18
Columbia.....	0	2	1	0	0	0	0	0	0	4	10
Georgia:											
Atlanta.....	4	2	3	4	0	2	0	0	0	5	63
Brunswick.....	0	0	0	0	0	1	0	0	0	0	8
Savannah.....	0	0	0	0	0	1	0	2	0	3	27
Florida:											
Miami.....	1	0	0	0	0	2	0	0	0	35	24
Tampa.....	0	1	0	0	0	0	2	2	0	5	19
EAST SOUTH CENTRAL											
Kentucky:											
Covington.....	2	3	0	5	0	0	0	0	0	0	21
Tennessee:											
Memphis.....	5	20	4	0	0	6	0	2	0	3	90
Nashville.....	2	10	0	0	0	0	0	0	0	1	47
Alabama:											
Birmingham.....	3	4	8	0	0	4	1	1	1	6	77
Mobile.....	0	1	1	0	0	2	0	1	1	1	35
Montgomery.....	0	1	0	1	-----	-----	0	0	-----	0	-----

City reports for week ended March 30, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths reported	Typhoid fever			Whoop- ing cough, cases reported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith.....	0	2	0	0	-----	-----	0	0	-----	2	-----
Little Rock.....	1	0	0	0	0	2	0	0	0	4	-----
Louisiana:											
New Orleans.....	6	50	1	0	0	11	2	3	0	5	131
Shreveport.....	0	2	0	1	0	1	1	0	0	0	30
Oklahoma:											
Tulsa.....	1	4	2	11	-----	-----	0	0	-----	0	-----
Texas:											
Dallas.....	3	6	3	17	0	3	0	2	0	2	55
Fort Worth.....	1	13	3	14	0	3	0	0	0	0	37
Galveston.....	0	2	0	0	0	2	0	0	0	0	9
Houston.....	1	7	2	5	0	2	0	0	0	1	48
San Antonio.....	1	3	0	1	0	7	0	0	0	0	62
MOUNTAIN											
Montana:											
Billings.....	0	2	0	0	0	1	0	0	0	0	8
Great Falls.....	1	1	1	0	0	0	0	0	0	3	7
Helena.....	0	0	0	0	0	0	0	0	0	0	8
Missoula.....	1	0	0	2	0	0	0	0	0	0	3
Idaho:											
Boise.....	0	1	0	0	0	0	0	0	0	0	6
Colorado:											
Denver.....	14	3	2	0	0	11	0	0	0	8	83
Pueblo.....	1	1	0	0	0	1	0	0	0	2	10
New Mexico:											
Albuquerque.....	1	0	0	0	0	3	0	0	0	13	10
Utah:											
Salt Lake City.....	3	1	2	3	0	3	0	0	0	3	-----
Nevada:											
Reno.....	0	0	1	0	0	1	0	0	0	0	5
PACIFIC											
Washington:											
Seattle.....	10	0	4	0	-----	-----	0	0	-----	6	-----
Spokane.....	7	2	7	1	-----	-----	0	0	-----	7	-----
Tacoma.....	2	5	3	7	0	1	0	0	0	1	20
Oregon:											
Portland.....	5	5	8	10	0	1	0	1	0	0	82
Salem.....	0	1	0	0	0	0	0	0	0	0	-----
California:											
Los Angeles.....	29	41	4	0	0	33	1	0	0	22	307
Sacramento.....	2	34	1	0	0	2	0	0	0	0	38
San Francisco.....	17	47	2	1	0	14	1	0	0	38	190

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Deaths
NEW ENGLAND								
Massachusetts:								
Boston.....	1	0	0	1	0	0	0	0
Worcester.....	0	0	0	1	1	0	0	0
MIDDLE ATLANTIC								
New York:								
Buffalo.....	0	1	0	0	0	0	0	0
New York.....	13	12	1	1	0	0	1	0
Pennsylvania:								
Philadelphia.....	2	2	0	1	0	0	0	0
Pittsburgh.....	7	1	0	0	0	0	0	0

City reports for week ended March 30, 1929—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	1	0	0	0	0	0	0	0	0
Cleveland.....	6	3	0	1	0	0	1	0	0
Columbus.....	0	0	1	1	0	0	0	0	0
Toledo.....	4	1	0	0	0	0	0	0	0
Indiana:									
Indianapolis.....	0	1	0	0	0	0	0	0	0
Illinois:									
Chicago.....	6	4	0	0	0	0	1	0	0
Michigan:									
Detroit.....	35	12	2	1	0	0	0	0	0
Flint.....	2	1	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee.....	5	2	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
St. Paul.....	0	1	0	0	0	0	0	0	0
Missouri:									
Kansas City.....	4	7	0	1	0	0	0	0	0
St. Louis.....	10	5	0	0	0	0	0	0	0
Kansas:									
Wichita.....	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Virginia:									
Norfolk.....	0	0	1	0	0	0	0	0	0
South Carolina:									
Charleston ¹	0	0	0	0	1	0	0	0	0
Columbia.....	0	0	0	0	0	1	0	0	0
Georgia:									
Atlanta.....	4	3	0	0	0	1	0	0	0
Savannah ²	1	0	0	0	0	0	0	0	0
Florida:									
Miami.....	0	0	0	0	2	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis.....	1	2	0	0	1	0	0	0	0
Alabama:									
Birmingham.....	0	0	0	0	2	2	0	0	0
Montgomery.....	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock.....	1	0	0	0	0	0	0	0	0
Louisiana:									
New Orleans.....	3	2	1	1	4	1	0	0	0
Shreveport.....	0	1	0	0	0	0	0	0	0
Oklahoma:									
Tulsa.....	1	0	0	0	0	0	0	0	0
Texas:									
Fort Worth.....	1	0	0	0	0	1	0	0	0
MOUNTAIN									
Montana:									
Missoula.....	1	0	0	0	0	0	0	0	0
Colorado:									
Denver.....	4	0	0	0	0	0	0	0	0
Pueblo.....	0	0	1	0	0	0	0	0	0
Utah:									
Salt Lake.....	11	5	0	0	0	0	0	0	0
PACIFIC									
Oregon:									
Portland.....	2	2	0	2	0	0	0	0	0
California:									
Los Angeles.....	2	4	0	0	0	1	0	0	0
Sacramento.....	0	1	0	0	0	0	0	0	0
San Francisco.....	1	10	0	0	1	0	0	0	0

¹ Dengue; 2 cases at Charleston, S. C.² Typhus fever; 1 case at Savannah, Ga.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended March 30, 1929, compared with those for a like period ended March 31, 1928. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have estimated aggregate populations of more than 31,000,000. The 91 cities reporting deaths have nearly 30,000,000 estimated population. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, February 24 to March 30, 1929—Annual rates per 100,000 population compared with rates for the corresponding period of 1928¹

DIPHTHERIA CASE RATES

	Week ended—									
	Mar. 2, 1929	Mar. 3, 1928	Mar. 9, 1929	Mar. 10, 1928	Mar. 16, 1929	Mar. 17, 1928	Mar. 23, 1929	Mar. 24, 1928	Mar. 30, 1929	Mar. 31, 1928
98 cities.....	122	174	134	174	127	160	¹ 136	161	129	140
New England.....	124	140	109	145	136	136	¹ 125	124	102	110
Middle Atlantic.....	140	234	185	214	159	213	180	223	187	181
East North Central.....	131	163	130	171	120	135	142	148	119	146
West North Central.....	135	113	144	131	152	115	131	133	138	84
South Atlantic.....	64	140	67	132	84	151	60	122	66	128
East South Central.....	54	98	68	84	54	119	41	56	41	70
West South Central.....	150	93	119	170	99	138	123	118	123	100
Mountain.....	61	186	61	97	44	106	35	80	44	115
Pacific.....	75	141	37	171	67	125	70	105	30	74

MEASLES CASE RATES

98 cities.....	580	1,123	539	1,120	681	1,356	¹ 757	1,325	719	1,375
New England.....	640	1,980	423	1,658	622	2,267	¹ 507	1,536	471	2,014
Middle Atlantic.....	158	1,003	162	973	135	1,216	179	1,397	154	1,496
East North Central.....	1,141	760	962	864	1,885	1,061	1,593	1,008	1,590	1,021
West North Central.....	1,553	342	1,698	491	1,965	593	1,880	728	1,782	751
South Atlantic.....	197	2,698	234	2,830	380	3,105	452	3,021	414	3,008
East South Central.....	61	1,543	61	1,227	41	1,824	136	1,361	88	1,354
West South Central.....	75	1,719	107	1,309	146	1,346	198	1,135	99	847
Mountain.....	697	142	819	283	636	346	766	505	409	753
Pacific.....	237	893	147	906	137	832	247	809	230	581

SCARLET FEVER CASE RATES

98 cities.....	299	290	290	299	326	301	¹ 346	309	319	363
New England.....	339	347	310	377	371	402	¹ 375	412	394	405
Middle Atlantic.....	230	346	228	359	266	353	308	375	264	399
East North Central.....	401	309	410	292	417	296	495	305	452	266
West North Central.....	321	262	356	291	367	272	292	293	310	258
South Atlantic.....	137	207	155	245	146	216	159	226	167	220
East South Central.....	217	112	197	175	231	63	306	154	265	77
West South Central.....	210	97	281	130	379	211	281	126	285	146
Mountain.....	218	257	157	195	157	248	118	177	78	186
Pacific.....	509	194	424	192	459	217	379	202	322	207

SMALLPOX CASE RATES

98 cities.....	16	17	12	23	12	21	¹ 11	25	16	25
New England.....	2	0	0	0	5	0	¹ 7	0	11	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	24	18	18	14	20	26	12	18	17	24
West North Central.....	15	63	6	92	31	65	12	125	25	65
South Atlantic.....	7	21	6	25	6	36	0	28	13	75
East South Central.....	7	0	7	21	7	21	7	35	41	35
West South Central.....	111	20	99	36	43	45	103	36	95	36
Mountain.....	87	53	44	115	17	53	44	62	44	142
Pacific.....	25	49	17	69	22	38	15	61	22	23

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1929 and 1928, respectively.

² Hartford, Conn., not included.

Summary of weekly reports from cities, February 24 to March 30, 1929—Annual rates per 100,000 population compared with rates for the corresponding period of 1928—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Mar. 2, 1929	Mar. 3, 1928	Mar. 9, 1929	Mar. 10, 1928	Mar. 16, 1929	Mar. 17, 1928	Mar. 23, 1929	Mar. 24, 1928	Mar. 30, 1929	Mar. 31, 1928
98 cities.....	4	10	5	4	5	5	7	5	10	6
New England.....	2	0	5	2	2	7	7	9	5	5
Middle Atlantic.....	2	8	4	3	4	2	6	4	5	4
East North Central.....	0	7	3	4	2	3	4	3	17	2
West North Central.....	8	6	4	2	2	4	6	0	8	2
South Atlantic.....	2	13	6	10	7	11	6	11	13	23
East South Central.....	14	70	7	7	7	14	27	7	27	14
West South Central.....	20	32	20	4	12	12	8	8	20	12
Mountain.....	9	9	0	0	26	0	9	0	0	0
Pacific.....	7	8	17	3	10	5	20	5	0	3

INFLUENZA DEATH RATES

91 cities.....	39	25	33	23	33	26	27	33	18	30
New England.....	20	7	16	21	25	7	9	9	5	11
Middle Atlantic.....	30	16	25	20	31	26	23	22	12	29
East North Central.....	31	17	31	16	23	12	20	35	16	24
West North Central.....	39	15	21	18	27	24	30	24	18	28
South Atlantic.....	67	34	47	27	37	21	30	42	22	23
East South Central.....	148	123	74	54	118	123	89	100	89	115
West South Central.....	89	104	122	75	106	117	77	100	37	87
Mountain.....	52	89	61	62	35	80	78	133	52	53
Pacific.....	33	24	23	20	16	10	33	7	16	13

PNEUMONIA DEATH RATES

91 cities.....	226	193	204	196	185	227	168	218	158	225
New England.....	274	193	219	205	201	239	176	182	172	225
Middle Atlantic.....	240	218	233	221	197	259	190	245	180	265
East North Central.....	180	148	159	156	155	197	141	211	132	208
West North Central.....	228	159	195	144	180	208	189	178	150	198
South Atlantic.....	255	205	234	212	199	216	185	239	159	239
East South Central.....	281	245	237	306	200	268	170	222	170	161
West South Central.....	215	266	235	258	239	286	81	279	130	246
Mountain.....	279	266	183	260	253	204	165	168	131	108
Pacific.....	154	155	144	121	141	125	170	101	157	118

* Hartford, Conn., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities of each group, approximated as of July 1, 1929 and 1928, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1929	1928	1929	1928
Total.....	98	91	31,568,400	31,052,700	29,995,100	29,498,600
New England.....	12	12	2,305,100	2,273,900	2,305,100	2,273,900
Middle Atlantic.....	10	10	10,809,700	10,702,200	10,809,700	10,702,200
East North Central.....	16	16	8,181,900	8,001,300	8,181,900	8,001,300
West North Central.....	12	9	2,712,100	2,673,300	1,736,900	1,708,100
South Atlantic.....	19	19	2,783,200	2,732,900	2,783,200	2,732,900
East South Central.....	6	5	767,900	745,500	704,200	682,400
West South Central.....	8	7	1,319,100	1,299,900	1,235,100	1,256,400
Mountain.....	9	9	598,800	590,200	598,800	590,200
Pacific.....	6	4	2,090,600	2,043,500	1,590,300	1,551,200

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended March 23, 1929.—The Department of Pensions and National Health reports cases of certain communicable diseases from eight Provinces of Canada for the week ended March 23, 1929, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal fever.....				4					4
Influenza.....	16		6	32	1			22	77
Lethargic encephalitis.....				1					1
Smallpox.....			3	21		13		17	54
Typhoid fever.....		3	16	2	2		1	1	25

Quebec Province—Communicable diseases—Week ended March 30, 1929.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended March 30, 1929, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	43	Scarlet fever.....	115
Diphtheria.....	37	Smallpox.....	2
German Measles.....	8	Tuberculosis.....	41
Influenza.....	2	Typhoid fever.....	13
Measles.....	128	Whooping cough.....	4
Mumps.....	25		

CUBA

Habana — Communicable diseases — February, 1929.—During the month of February, 1929, communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chicken pox.....	19		Paratyphoid fever.....	1	
Diphtheria.....	8	1	Scarlet fever.....	8	1
Malaria.....	14		Typhoid fever.....	24	5
Measles.....	555	6			

MEXICO

Tampico—Communicable diseases—March, 1929.—During the month of March, 1929, communicable diseases were reported at Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria.....	1	1	Measles.....	11	2
Enteritis (various).....		67	Smallpox.....	2	
Influenza.....	6	1	Tuberculosis.....	37	23
Malaria.....	37	8	Whooping cough.....	5	2

TRINIDAD

Port of Spain—Vital statistics—Comparative—January and February, 1929.—The following statistics for the months of January and February, 1929, with comparisons for the same months for the years 1925 to 1928, are taken from a report issued by the public health department of Port of Spain, Trinidad:

MONTH OF JANUARY

	1925	1926	1927	1928	1929
Number of births.....	127	164	154	159	177
Births per 1,000 population.....	23.4	30.2	27.9	28.8	31.9
Number of deaths.....	164	140	126	141	119
Deaths per 1,000 population.....	30.2	25.8	22.8	25.5	21.4
Deaths under 1 year.....	33	28	22	25	16
Deaths under 1 year per 1,000 births.....	260	171	142	157	90

MONTH OF FEBRUARY

	1925	1926	1927	1928	1929
Number of births.....	133	139	132	139	132
Births per 1,000 population.....	27.1	28.1	28.5	26.7	25.9
Number of deaths.....	121	126	90	108	111
Deaths per 1,000 population.....	24.7	25.4	18.0	20.8	21.8
Deaths under 1 year.....	20	20	18	20	17
Deaths under 1 year per 1,000 births.....	151	143	136	143	129

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

From medical officers of the Public Health Service, American consuls, health section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given:

CHOLERA

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

[illegible]

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

PLAGUE

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

Place	Week ended—												
	January, 1929		February, 1929					March, 1929					
	19	26	2	9	16	23	2	9	16	23	30		
Algeria:													
Algiers.....	O		2										
Oran.....	O	1	2										
Philippeville.....	O	2											
Argentina:													
Buenos Aires ¹			P	9									
Catamarca Province—Retreo.....	O												
Cordoba Province—													
Canada Honda.....	O		14										
LaBorde.....	O												
Juluy Province—Perico.....	O												
Rosario.....	O												
Santiago del Estero.....	O		7										
Tucuman Province—El Mollar.....	O			6									
Azores: St. Michaels Island.....	O	3	3	2	1								
Belgian Congo:	D		1										
Djugu.....	O		2										
Lenaa.....	O			1									
Brail:													
Para.....	O						1						
Santos.....	O			2									
British East Africa (see also table below):													
Mombasa.....	O	3											
Plague-infected rats.....	D	3											
Uganda.....	O	2											
Canary Islands:	D	106	114	124	155	39	37	30	46	36			
Las Palmas.....	O	86	103	121	152	38	37	30	44	35			
Teneriffe.....	O	2											
Laguna.....	O	1											
	O	2		1									
	O	4											
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SMALLPOX

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

[illegible]

SMALLPOX--Continued

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

Place	Sept. 23- Oct. 20, 1928	Oct. 21- Nov. 17, 1928	Nov. 18- Dec. 15, 1928	Dec. 16- 1929	Week ended—											
					January, 1929		February, 1929				March, 1929				Apr. 6, 1929	
					10	26	2	9	16	23	2	9	16	23		30
France (see table below).																
Great Britain:																
England and Wales.....	514	581	719	733	171	239	280	221	275	298	289	272				
Bristol.....	1	1	1		1			1		1		1				
Cardiff.....							4									
Oxford.....	8	6	8	16	4	14	16	14	22	31	12	20	13			
Hull.....	7	3	1			2										
Leeds.....		1	2	1		1	1	1	1	1	3	1	1			
Liverpool.....					1											
London.....	12	21	14	36	6	13	17	4	9	17	10	18	11			
Manchester.....	1															
Newcastle-on-Tyne.....	1	1	3				1	5	2		3	1	2			
Nottingham.....	5	1	3	3				1								
Plymouth.....	2	6														
Stock-on-Trent.....		9	11	4	2	8	2	2	5	4	4	5	4			
Scotland.....																
Dundee.....	3	2	1													
Greece (see table below).																
Hedjaz.....					48	21	22	55	20	42	37		24			
India.....					15	20	6	20	13	15	12		10			
Bombay.....	2,782	3,041	5,902	7,877	2,837	3,285	3,248	3,111								
Calcutta.....	690	836	1,602	2,143	729	785	815	703								
Karachi.....	24	9	11	34	34	42	44	38	44	93	112	148				
Madras.....	12	4	4	21	13	17	25	23	32	37	49	70	88			
Moulmein.....	7	2	13	10	8	4	7	13	13	9	11	71	35			
Nagapatam.....	4	2	7	6	6	1	3	7	6	7	9	24	7			
	1			6		10	1	16	28	24	49	46	43			
						4	4	4	7	11	22	14	4			
	77	71	53	94	50	82	37	54	60	56	68	76	88			
	26	22	16	25	6	11	12	6	4	6	18	24	11			
	2		5	3	2	2	2									
			1	1	1	1	1									
			33	8	3	14	2	7	2	2	2	2	2			
	61	38	33	8	3	14	2	7	2	2	2	2	2			
	11	8	5	5	3	1	2	5	5	1	1	1	1			

Rangoon.....	1	1	1	1	4	1	3	4	6	2	5	3	---
Tuticorin.....	3	---	---	1	---	---	---	1	1	2	2	1	---
Viragapatam.....	1	---	2	2	---	---	6	12	4	17	19	8	---
India (French):	---	---	---	---	---	---	---	2	---	3	4	1	---
Chandernagor.....	4	3	---	---	---	---	---	---	---	---	---	---	---
Pondicherry Province.....	111	84	48	75	22	13	12	18	26	16	19	6	---
Indo-China (see also table below):	73	67	46	62	20	13	10	8	22	12	13	6	---
Phnompenh.....	28	30	44	38	11	6	38	22	15	18	10	13	19
Saigon.....	10	5	20	21	8	3	17	14	1	11	7	5	10
---	3	2	---	12	2	---	1	2	1	1	---	1	---
---	2	2	---	6	---	---	1	---	---	---	---	---	---
Iraq:	---	---	---	---	---	---	---	---	---	---	---	---	---
Baghdad.....	38	40	46	20	13	1	1	4	2	1	---	2	3
---	12	23	45	29	2	1	---	4	1	---	---	1	---
Basra.....	23	35	35	11	5	4	1	8	4	2	---	1	5
---	9	33	26	1	7	4	3	1	1	---	1	1	1
Hillah Liwa.....	---	---	---	54	20	---	---	---	---	---	---	---	---
---	---	---	---	14	9	---	---	---	---	---	---	---	---
Kirkuk Liwa.....	---	---	173	86	---	---	---	9	9	---	---	---	---
---	---	---	38	17	---	---	---	2	2	---	---	---	---
Mosoul.....	53	204	55	55	2	---	23	5	14	14	---	---	---
---	23	110	39	4	---	---	12	1	2	---	---	---	---
Sinjar.....	---	---	---	53	61	---	---	---	---	---	---	---	---
---	---	---	---	5	15	---	---	---	---	---	---	---	---
Italy:	---	---	---	---	---	---	---	---	---	---	---	---	---
Bolerno.....	---	2	3	3	---	---	---	---	---	---	---	---	---
Turin.....	---	---	---	---	---	---	---	1	---	---	---	---	---
Ivory Coast (see table below)	---	---	---	---	---	---	---	---	---	---	---	---	---
Jamaica (outside Kingston) (alastim)	2	---	---	1	---	---	---	---	---	---	---	---	---
Kingston (alastim)	---	---	1	---	---	---	---	---	---	---	---	---	---
Japan:	---	---	---	---	---	---	---	---	---	---	---	---	---
Kobe.....	---	---	---	---	---	---	---	---	---	---	---	---	---
Nagasaki.....	---	---	---	1	1	1	---	---	---	1	---	---	---
Osaka.....	---	---	---	---	---	---	---	---	---	---	---	---	---
Macao.....	---	---	---	---	---	---	---	---	---	---	---	---	---
Malta: Valetta.....	---	---	---	---	---	---	---	---	---	---	---	---	---
Mexico:	1	---	---	9	2	8	14	24	24	12	15	6	3
Aguaascalientes.....	---	---	2	1	1	1	1	---	3	---	---	2	---
Chihuahua.....	---	---	---	---	---	---	---	---	---	---	---	---	---
Jalisco (State).....	11	---	---	---	---	---	---	---	---	---	---	---	---
Guadalejara.....	1	---	4	1	---	2	2	4	2	1	1	2	4
Juarez.....	1	---	5	5	---	1	---	5	2	1	---	3	---
Mexico City and surrounding territory.....	1	5	---	7	2	---	---	---	2	---	---	1	---
Palomas.....	---	---	---	---	---	---	---	---	---	---	---	---	---
Saltillo.....	---	---	---	---	---	---	---	---	---	---	---	---	---
San Luis Potosi.....	2	1	---	---	---	---	---	---	---	---	---	---	---
Tampico.....	---	1	---	---	---	---	---	---	---	---	---	---	---
Torreon.....	1	---	---	---	---	---	---	---	1	---	---	2	---

