

of the drug would be lost if infection did later develop? The staphylococcus is particularly prone to exhibit this trait, the streptococcus less likely to. When the patient is exposed to infection or when it has developed there is a definite indication for penicillin, but in either instance full dosage should be employed. Among these indications may be included premature rupture of the membranes, either spontaneous or artificial, when labor does not promptly ensue; extensive uterine manipulations from below, prolonged labor and tests of labor. With increasing knowledge of roentgen pelvimetry, it is now decided to allow a certain number of patients to have a real test of labor, patients who a few years ago would have had an elective abdominal delivery or at the most a short trial labor and then a cesarean section. And in recent months there has been advocated in cases of moderate mid pelvic contraction not only a test of labor but also a "test of forceps." The forceps are applied and gentle traction made; if no advance occurs, the forceps are removed and the patient is delivered abdominally. Proponents of this procedure object to the term "failed forceps," preferring the aforementioned term, "test of forceps." Certainly neither of these two methods would be feasible or permissible were it not for the added protection of penicillin. Therefore it would appear to be proper to follow the recommendations of Dr. Keettel not to use penicillin in every case of labor but to reserve it for those in which it is indicated. And when penicillin is used it should be given in a dose sufficiently large to produce the desired result.

DR. WILLIAM C. KEETTEL, Iowa City: One point not mentioned in the paper was the larger number of complicated premature infants in the treated series because of more complicated cases. Despite this fact the premature salvage was much better than that in the control group. The number of cases is not large enough to be statistically significant, but if results in a larger series prove this to be true it certainly would be significant. Since the controlled experiment was discontinued, 90 indigent women have been delivered. In this group there have been 9 cases of two or more day fevers, which is twice as many as there were in the preceding ten months. Still unanswered is the final question whether a puerperal patient is best treated by penicillin prophylaxis and an afebrile puerperal course, or whether there is harm in waiting the development of a febrile course and then treating the patient intensively. Since puerperal infections are so easily treated at present we are not recommending routine penicillin prophylaxis. However, in the future should the indirect approach prove the more desirable method of ophthalmic prophylaxis then routine penicillin prophylaxis can be justified.

Acute Appendicitis.—The present decade has witnessed a spectacular drop in the mortality rate of acute appendicitis. This is nationwide and is reflected in the reports of small institutions as well as those of large centers. There were 14,113 fatalities due to appendicitis in the United States in 1939, while in 1946 there were only 5,285. Commenting on this progress, the Metropolitan Life Insurance Company stated, "There is good reason to believe that within the next few years appendicitis will be reduced to a very minor cause of death in our country and that medical science and public health administration will close another important chapter in their history." That many factors are responsible for this improvement is illustrated by the divergence of surgical opinion on the role each has played. These tend to fall into four general headings: first, public health education with its resulting earlier seeking of treatment by patients; second, improved operative management with emphasis on the elimination of drains and greater use of the McBurney incision; third, the improved methods and agents in the field of preoperative and post-operative supportive therapy, and, fourth, sulfonamide compounds and antibiotics.—Louis R. Slattery, M.D.; S. A. Yanitelli, M.D., and J. William Hinton, M.D., *Acute Appendicitis*, *Archives of Surgery*, January 1950.

THE FEDERAL GOVERNMENT AND AMERICAN INDIANS' HEALTH

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The question whether the federal government has fulfilled its responsibility to the American Indian with respect to providing health facilities is best answered by the disease and death records among Indians, which, by comparison with similar records for the general population, speak for themselves.

To infer that progress has not been made over a period of years in the improvement of health conditions among American Indians would be far from correct. Much progress has been made, particularly since 1911 when the first specific appropriation, in the amount of \$40,000 for that year, was allowed by Congress for health work among Indians. Increased recognition on the part of the federal government of its responsibility in providing health and hospital facilities for Indians has been reflected in lower specific death rates among Indians as increased appropriations have been made available from year to year.

To the time of writing, thirty-eight years after 1911, there are seventy-one hospitals (sixty-four in Continental United States and seven in Alaska) operated for the exclusive use of Indians, yet only limited preventive medical services have ever been provided. That funds appropriated for health services among Indians have been reasonably, effectively used is indicated by a decided reduction in specific death rates among the Indians, particularly from those diseases against which vaccination is effective, including typhoid, smallpox and diphtheria.

However, just as appropriations for preventive medical programs for Indians have not kept pace with federal, state and local appropriations for health facilities for the general population, the reductions in specific death rates among Indians have not kept pace with the spectacular reductions in specific death rates among white persons. The higher prevalence of disease among Indians in 1911 and 1949, except for those diseases which have been controlled through the use of vaccines and serums, is proportionately as great now as it was thirty-eight years ago.

For the protection of the health of the general population the community, the town or city, the county, the state, the federal government and private health organizations are equally interested in health conservation, and in many instances each contributes to its financial support. But many thousands of the Indians, through no fault of their own and because of the poor economic conditions under which they have existed since they were placed on reservations, continue to exist in some of the most arid and nonproductive areas of the country. They are without more than limited resources of their own and must depend almost entirely on the federal government for such health facilities as are provided. Insufficient funds to provide effective public health (preventive disease) services for Indians on all reservations or to adequately staff with professional personnel the seventy-one hospitals for which the federal government through the Bureau of Indian Affairs is responsible, is primarily the reason for the disgracefully high specific disease death rates that continue to prevail among Indians as compared to the death rates from the same diseases among the general population.

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Tuberculosis among all age groups of Indians and intestinal infections, particularly among Indian infants and children, are excellent examples. These two diseases take a high toll of Indian lives each year. While deaths resulting from these and other controllable diseases vary slightly among different tribes of Indians, depending to a great extent on economic conditions, they are far out of line with what should be tolerated especially among a racial group a majority of whom are wards of an otherwise benevolent government. The death rates among Indians as submitted from the state of Montana for 1947 are, in general, about the same as those submitted from other states in which large groups of Indians reside. The death rates quoted herein are official. They are furnished by the departments of health of the states to which they refer or, where they apply to Tribes only, from the records of the Indian Agency having jurisdiction.

THE TUBERCULOSIS DEATH RATE

The tuberculosis death rate for the general population (the United States as a whole) in 1947 was 33.5 per 100,000. For Indians in Montana it was 244.4, a ratio of 7.6 deaths among Indians to 1 among white persons. Among the Navajos in 1947 it was 302.4 per 100,000 population, a ratio of about 9 to 1. In North Dakota in 1947 the tuberculosis death rate was 366 per 100,000, a ratio of about 10.9 deaths among Indians to 1 among the white population. These high tuberculosis death rates prevail among the Papagos of Arizona, among the natives of Alaska and among other tribes of smaller populations. Although complete information is not yet available for 1948 and 1949, sufficient statistical information has been received to indicate that the tuberculosis death rate among all the 400,000 Indians in continental United States and Alaska will average above 200 deaths per 100,000 population.

On an average, the country over, there exist approximately 9 cases of tuberculosis for each death which occurs. Our data from chest roentgen ray surveys already conducted among many tribes of Indians will support the ratio of a minimum of 9 cases of tuberculosis among Indians to each death which occurs. By conservative estimate, based on both the observations of the Bureau of Indian Affairs and the established nationwide ratio of cases to deaths, there are about 2,400 Indians in continental United States and Alaska who are suffering with active tuberculosis and are in need of hospitalization. To care for tuberculous patients the National Tuberculosis Association, the American Trudeau Society and the United States Public Health Service recommended a minimum of 2½ hospital beds for each death that occurs from that disease. Among the Indians, where the case load is extremely high, we need a minimum of 3 beds per annual death, or a total of about 2,400 beds to care for tuberculous Indians.

To accommodate tuberculous Indians the Indian Service maintains a total of 929 beds and contracts with other agencies for an additional 300 beds. The Indian Service has available, therefore, a total of 1,229 beds to accommodate a conservatively estimated minimum of 2,400 Indians with active tuberculosis. The other 1,170 tuberculous Indians, approximately 50 per cent of the total, for lack of hospital facilities to accommodate them or adequate field health services to teach them the dangers of the disease, are being permitted or compelled (many Indians for whom accommodations are not available would like to be admitted to

hospitals) to wander at large among their own people, each a definite danger to those with whom he comes in contact. When one observes the living conditions of many thousands of Indians, crowded together as they are in one room, dirt floor hogans, in small tents or in shacks of primitive construction and without any modern sanitary facilities, one wonders with amazement why tuberculosis among American Indians is not many times more prevalent than it actually is.

Aside from the shortage of more than 1,100 hospital beds to accommodate Indians with active cases of tuberculosis, sufficient funds have not been made available by the federal government to permit full utilization of all beds available. In 1948, for lack of funds, only 60 per cent of the beds available for tuberculous Indians could be utilized. During the first half of the fiscal year of 1949, for which the information has been received from all six Indian Service sanatoriums and from sanatoriums operated by other agencies with which the Indian Service is contracting for the care of tuberculous patients, the total average case load was 592, or 337 short of their operating capacity.

From the Sioux Sanatorium, Sioux City, S. D., for lack of adequate operating funds, it was necessary to discharge, during the last half of the fiscal year 1949, 25 patients with tuberculosis whose treatment had not been completed. Of the 25 patients discharged, 17 had positive sputums at the last examination before they were discharged. In addition to those discharged 10 persons with newly diagnosed cases of tuberculosis found during the month of February 1949 who desired hospitalization at Sioux Sanatorium were advised that they could not be accepted until after the beginning of this fiscal year 1950, when funds would again be available. Early in the last half of the fiscal year 1949 it was likewise necessary to discharge from Ah-Gwah-Ching Sanatorium in Minnesota 12 patients whose treatment had not been completed. In every instance the six sanatoriums operated by the Indian Service in continental United States have had a waiting list of patients with active tuberculosis who could not be admitted either because of a lack of funds to operate through the year, or because of an insufficient number of beds to accommodate applicants for admission.

As in the case of other highly infectious diseases, the spread of tuberculosis can only be controlled by the isolation of the patients with active, sputum-positive infection from those who are susceptible to the disease but who have not yet contracted it. This is not being done and cannot be done among the American Indians for whom hospital accommodations are not provided by the Bureau of Indian Affairs and for whom funds are not available to expand the contractual service with non-government-operated sanatoriums.

As long as this condition prevails, the rate of tuberculosis infection among Indians will continue to be high and little progress will be made in controlling tuberculosis among Indians as a racial group.

INFANT MORTALITY

Along with tuberculosis, diseases of infants and children, with infantile diarrhea as the most important of this group, contribute greatly to the over-all high death rate among the Indians as a racial group. In Montana, a state in which the infant death rate (all causes) among the white population is one of the lowest in the nation, the infant death rate among Indians in 1948 was 116 per 1,000 children born as compared to 28 for the state

and 32 for the nation as a whole. As a specific disease infantile diarrhea killed 51 Indian children in Montana in 1948 per 1,000 children born as compared to 4.1 deaths per 1,000 children born in the state and 5.6 deaths per 1,000 children born in the general population. The ratio of deaths from this disease in Montana was therefore 14 times greater among Indians than among the general population.

Among the Navajos of Arizona and New Mexico the infant mortality rate per 1,000 children born was 191 and 227 for 1947 and 1948, respectively, as compared to 32 and 31 for the same years among the general population. This represents a ratio of 6 and 7 times more deaths among the Navajo Indians than among the general population of the country as a whole. In 1948 deaths of infants under 1 year of age among the Navajos from all causes accounted for 40.7 per cent of the total deaths occurring among those of all ages, and deaths of children under 5 years of age, from all causes, accounted for 55.7 per cent of the total deaths among all ages.

When one includes figures on the Papagos of Arizona, several of the tribes in the Dakotas and the natives of Alaska the infant mortality and tuberculosis death rates are equally as high as those among the Indians of Montana or among the Navajos of Arizona and New Mexico. The occurrence of typhoid among Indians as a racial group is more than 4 times greater than that among the general population. Trachoma, a readily controllable disease when the cases can be found and brought to treatment, is again increasing in several tribes of Indians for whom sufficient members of the field staff (nurses and eye specialists) are not available to locate, diagnose and treat this disease. The pneumonia morbidity and mortality rates among reservation Indians, probably because of poor housing conditions and exposure during the winter, is uniformly much higher among Indians than among the general population. The death rate from pneumonia among the different tribes of Indians varies widely according to the climatic conditions under which they live. For the tier of Northern states, where climatic conditions are most severe during the winter season, the pneumonia death rates among Indians in 1948 as compared to the rates among non-Indians in the same states were higher in Nebraska by 8 to 1, in South Dakota 3 to 1, in North Dakota 4 to 1, in Montana 5 to 1 and in Wyoming 17 to 1.

General sanitation, including housing facilities, sanitation of water used for domestic purposes, sewage and excreta disposal and food sanitation, has been neglected to an extent that the sanitary conditions under which many thousands of Indians live are nothing short of primitive and are unknown for any other group of persons in the United States.

APPROPRIATIONS AND PERSONNEL FOR INDIAN HEALTH SERVICES

From 1911 to 1940 year to year increases in appropriations for health services for Indians made possible fairly good progress in the reduction of death rates resulting from certain communicable diseases. During that period many hospitals were constructed, and availability of professional personnel (physicians and nursing personnel) made it possible to staff on a fairly adequate basis the hospitals that were provided for Indians. Since the beginning of World War II, however, neither appropriations for the proper maintenance

and operation of hospitals nor those for providing needed field health (preventive medicine) services have kept pace with the greatly increased cost of maintaining and operating these services. In some instances hospital buildings, quarters for personnel and the maintenance and replacement of equipment have been neglected because of lack of funds to such an extent that even an average degree of efficiency cannot be maintained. Likewise, for lack of sufficient appropriations to compensate professional personnel on a basis comparable to salaries paid for medical officers by state and local governments and by other federal agencies, it has been impossible for the Bureau of Indian Affairs to recruit more than the minimum personnel required to keep the doors of many Indian hospitals open. With seventy-one hospitals varying in bed capacity from 15 to 337, and for the operation of which the Bureau of Indian Affairs is responsible, only 102 full time resident physicians were employed and on duty as of Oct. 1, 1949, an average of only a fraction more than 1 physician per hospital now accepting patients. As of October 1, four hospitals were operating without a resident medical officer in attendance and with only nurses in charge of the limited number of patients that can and must be accepted for such nursing care as the nurse can provide. Fifty hospitals varying in bed capacity from 15 to 60 beds were operating with only one resident physician in charge. Thirteen hospitals with bed capacity up to eighty beds were operating with only two resident physicians on duty, and the remaining four hospitals and sanatoriums varying in bed capacity from 80 to 337 beds were operating with more than 2 but not more than 7 physicians in charge.

Salaries for all physicians employed by the Indian Service must be kept to an irreducible minimum to stay within budgetary limitations, and this necessity is responsible to a great extent for the inability of the Bureau of Indian Affairs to compete with other agencies in the recruitment of medical personnel to be engaged in either hospital or field health services. Until funds are made available to permit the payment of salaries comparable to those paid by other agencies and an increase in the number of physicians from the 102 now employed to a total of approximately 250 needed to operate the seventy-one hospitals and an adequate field health service for which the Indian Service is responsible, the Indians of the country will continue to receive inadequate medical care.

In each of the fifty hospitals for which only one physician is provided at present, the physician in charge is on duty or on call twenty-four hours of each day for eleven months of the year (one month annual leave is allowed) with no opportunity for educational refresher courses and with little opportunity to attend professional conferences. In addition to being responsible for the care of patients admitted to these small hospitals the one physician in charge is in most instances also responsible for such outpatient clinic service and for such field health services as are provided.

Extreme difficulty has been encountered in recruiting nurses urgently needed to fill hospital staff vacancies and field (public health) nursing positions. As of Sept. 1, 1949 there were 123 vacancies of a total of 835 hospital nursing positions allowed to operate the seventy-one hospitals for which the Bureau of Indian Affairs is responsible. The shortage of staff nurses has in a few instances necessitated the closing of hos-

pital wards and in many other instances has necessitated the utilization of nonnursing personnel to give care to patients.

A field nursing program has been the only public health (preventive medicine) service provided by the Indian Service. However, of 125 public health nurses needed for field work only 104 positions are allowed under budgetary allotments for the fiscal year 1950, and as of Sept. 1, 1949 only 69 positions were filled to provide nursing service for Indians in the states and Alaska. This shortage of public health nurses has left many Indian Reservations without any public health nursing service and in many instances has increased the areas served by presently employed nurses to the extent that efficient service cannot be given.

Despite the shortage of professional personnel to provide adequate medical care and public health facilities for the Indians, there are related conditions which make the improvement of the health of the Indians, at least among some tribes, a doubly difficult task. There are many Indians in continental United States who neither speak nor understand the English language. To converse with them it is necessary that the public health nurse or other health worker, whose responsibility it is to teach the Indians the dangers of disease and how to prevent it, must be accompanied by an interpreter who can speak the language of the people.

It cannot be said that the Indians are responsible for this deplorable situation. According to Mr. W. W. Beatty, Director of Education of the Bureau of Indian Affairs, there are approximately 15,000 Indian children of school age on the Navajo Reservation alone (Arizona and New Mexico) for whom there are no classroom accommodations available in the government-operated Indian schools. Therefore, there is no opportunity for these Indian children to obtain even a primary school education. Many of these children live in extremely isolated areas and come in contact only with their own people, who speak in tribal language. They do not so much as have an opportunity to hear the English language spoken.

Similar conditions to a less aggravated degree may be found on the Papago Reservation, where a little over half of the children of school age are attending school; on the Arizona Apache Reservation, where a substantial number of children are out of school, and in remote parts of Alaska, where there are about 2,000 children who do not have access to schools. Until these conditions can be corrected and a basic primary education for Indian children has made English a common language of oral exchange, so that it will be possible to communicate with these Indians through the medium of the printed page, work in health education will be seriously handicapped.

It is a lasting tribute to the physicians and nurses of the Indian Service, who have given so unstintingly of their time and efforts to render the best service possible under the most trying circumstances, that the Indian Health and Hospital Service has not completely broken down during these recent years when there has been an unnecessary shortage of funds for the efficient operation of hospitals and a corresponding necessary shortage of personnel to render adequate service.

Although public health (preventive medicine) service has long since been recognized as a most important, if not the most important, part of any over-all community health program, the consistent lack throughout the history of the Bureau of Indian Affairs of any

organized public health (preventive medicine) program for the Indians is a situation which national pride should never have tolerated throughout all the years since the Indians were conquered and placed on lands that the white man thought he would never need. When the Indians were made wards of the government many years ago, a majority of them were placed on reservations in some of the most arid and nonproductive areas of the entire country. Their economic status, for which they cannot be held responsible, has compelled them to continue to be dependent on the government—a government which has contributed liberally to the promotion of the health of the general population, including all other racial groups in our country, and even to the improvement of health conditions in many foreign countries, yet has consistently neglected to provide equally adequate health (and educational) facilities for this group of people who by decree of their conquerors have been permitted or required to live in squalor and as a disease-ridden racial group for more than a hundred years. No matter what the cost, until the disgracefully high death rates among the Indians of America are brought more closely in line with death rates among the general population, there can be but one answer to the question, "Has the federal government fulfilled its responsibility to the American Indian with respect to providing needed health facilities?"—The answer is "No."

MYCOBACTERIUM TUBERCULOSIS IN UTERINE DISCHARGE

Detection by Cultures: Diagnostic and Prognostic Value in Latent
Female Genital Tuberculosis

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In a preliminary communication¹ I reported the first results of our studies concerning the detection of latent female genital tuberculosis by cultures of menstrual discharges made on a specific medium (Petragnani). We had used this method especially for women who had been sterile for many years and in whom the usual methods for detecting the cause of sterility had failed or for women who showed partial or complete nonpatency of the fallopian tubes when tested by repeated insufflation and/or salpingography. In some cases we used cultures of the menstrual discharges to verify the diagnosis of endometrial tuberculosis made by endometrial biopsy. The results obtained with this method encouraged us to continue our studies in this field and to extend the use of this method to systematic investigations of the intermenstrual cervicouterine discharges. This is a report of further results of our studies in this field. In our research we had a threefold task: (1) to diagnose latent female genital tuberculosis, especially in cases of primary sterility, (2) to verify the diagnosis (and determine the prognosis) of endometrial tuberculosis made by endometrial biopsy and (3) to discover to what degree a patient who discharges tubercle bacilli from the vagina can infect persons in her immediate surroundings.

From the Maternity Hospital, Hadera.

All bacteriologic studies were made at the laboratories of the Kupath Holim in Tel Aviv and Haifa. Dr. E. L. Bregman and Dr. Hirsch, directors of these laboratories, and Professor Klopstock gave valuable assistance.

1. Halbrecht, I.: Detection of Latent Genital Tuberculosis by Cultures of Menstrual Discharge, *Lancet* 2: 947, 1947.