Special Article

HEALTH OF THE NAVAJO-HOPI INDIANS

General Report of the American Medical Association Team

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NOTE.—*The following special report on medical conditions among the Navajo-Hopi Indians was made by a group of physicians who were sent by the Department of the Interior as representatives of the American Medical Association. The arrangements were made by a committee of the American Medical Association, which is advisory to the Honorable J. A. Krug, Secretary of the Interior. The team comprised Dr. Samuel Ayres Jr., Los Angeles; Dr. A. A. Thurlow, Santa Rosa, Calif.; Dr. Harold E. Crowe, Los Angeles; Dr. Louis C. Ruschin, Oakland, Calif., and Dr. Lewis J. Moorman, Oklahoma City, Chairman. This project was approved by the House of Delegates of the American Medical Association.*—ED.

I come to show you sweet Caesar's wounds; poor, poor dumb mouths, and bid them speak for me.—Mark Anthony.

HISTORICAL BACKGROUND [1]

In 1868 at Fort Sumner, the United States, entering into a treaty with the Navajo Indians, exacted submission with definite promises from the Navajos based on government performances made obligatory in terms of the treaty.

The Navajos promised to remain on a reservation and to compel their children to go to school. The United States agreed to provide a teacher and a schoolhouse for every 30 children between the ages of 6 and 16 "who can be induced or compelled to go to school." Coincidentally with education the necessity of economic rehabilitation was recognized by the government. Apparently nothing was said about medical care, without which neither of these treaty objectives can ever be fully realized. When mutual promises were consummated and signatures affixed, the government planted the Navajos on the present reservation without reckoning with the exigencies of the forbidding terrain. The dependence on their herds and the sparsity of herbage inevitably made nomads of the Navajos and kept them on the move, threading ancient arroyos, wading sand dunes, scaling bluffs and unobtrusively blending with sage and sheep on lonely mesas.

On 18,000,000 acres of the world's proving ground for erosion, the Navajos are still tucked away from civilization with two and a half square miles for each hogan. Many of them are isolated by the absence of roads and periodically cut off by sand blows, flash floods, snow storms and mud holes and often by the mere penalty of dire remoteness. Ultimately this remoteness caused the government to realize that the Navajo child must be located and transported to a schoolhouse or the schoolhouse brought to him before he can be educated. The treaty still stands. The Navajo people are now willing to send 24,000 children to school, but the government, in approximately 80 years, has provided schools for only 8,000 children, and after all this time only 20 per cent of the Navajos speak English. Economic rehabilitation has suffered the same fate. Because of a tardy consciousness of medical needs, the Indians' health has fared no better than education and economic competency. In fact, the incidence of some preventable diseases, such as tuberculosis and venereal diseases, is increasing. Vaccination against smallpox and typhoid has proved a great boon. This is not intended as an indictment of the administration of Indian affairs, but a brief enumeration of some of the past and present difficulties, including the almost insurmountable physical handicaps. In spite of all these obstacles the Navajo flocks multiplied, and in the face of a high infant mortality, carrying out the ancient law "the survival of the fittest," his people have increased from 8,000 to 64,000 in less than two generations. Through curtailing the seeding of the native grasses through increase in his flocks, he was impressed with the necessity of animal procreation and made the most of it among his flocks and in the hogan.

His unusual fecundity, possible based on his heterogeneous origin, "hybrid vigor," influences of the desert, his pertinacity, his poise and his hard-earned psychologic self sufficiency, indicates that he may make a valuable contribution to the white man's culture and slow his frenzied mechanistic marathon to a more reasonable pace.

Apparently the first recorded appropriation of funds for medical care of the Indians was on a California reservation in 1856. In 1857 a hospital was established in Northern California and a physician employed. With this exception, especially in the Southwest area, physicians, when employed, were charged with the care of Indian agents and their families and employees. But even this service was not provided before the 1870's.

Three or four physicians were appointed as Indian agents in the Southwest, and they must have mixed medical care with administrative duties. In 1873 a medical and educational division was established in the Indian bureau. This, however, was abolished in 1877, in spite of great demands for medical service. Even under this provision only about one half of the agencies had been provided with physicians. Certainly this was true in the Southwest. For a long time the Navajos had only one doctor to serve 15,000 to 20,000 persons.

By 1878 the Commissioner of Indian Affairs decided that persons employed as physicians on Indian reservations should be "graduates of some medical college and have the necessary diplomas." He had the good sense to add that because of the character of the so-called physicians serving the Indians they had lost "faith in the superiority of the white man's medicine and returned to their former methods of curing the sick."

There was a gradual awakening of the Government with reference to medical care for the Indians in the first and second decades of the twentieth century. But two world wars have made it difficult to secure the services of good physicians and have decimated the supply of nurses. In spite of the best intentions and much good work on the part of many conscientious administrators, the results are unsatisfactory. More than any other people in the United States today the Navajos need patient sympathetic understanding of both body and mind to win them from the machinations of the medicine man, whose three to nine day "sings" and "dances" are not limited by hourly schedules and do not click with the clock. It will require genuine patience and devotion to meet the medicine man's intensive psychotherapeutic appeal, especially until general education brings more light.

This report was made in collaboration with other members of the team.

1. The essential facts in this historical sketch are gleaned from Dale, E. E.: Indians of the Southwest: A Century of Federal Relations, chaps. 13-15, to be published.

A BRIEF SUMMARY OF THE TEAM'S OBSERVATIONS WITH RECOMMENDATIONS

In our Century science is the soul of the prosperity of nations and the living source of all progress. Undoubtedly the tiring discussions of politics seem to be our guide—empty appearances! What really leads us forward is a few scientific discoveries and their application.—Pasteur.

This statement is based on individual studies and a careful perusal of the reports presented by the other members of the team.

On the whole it may be said that all the members of the team are in accord on all the observations, questions, problems and recommendations in this report.

The diseases afflicting the Navajo-Hopi Indians with few exceptions differ from those found in the white population only in degree, and this difference is due to environmental conditions, want of education and adequate medical care rather than to innate racial factors and influences.

For example, the meager statistical data regarding tuberculosis indicate that the mortality from this disease is approximately 10 times that in the general population. Yet its course in the Indian closely parallels that in the white man. This being true, we must conclude that the difference must be due to provocative factors in the environment, including faulty nutrition, physical hardships, overcrowding in the hogan and inadequate medical care, which implies the lack of effective case finding, the failure to break contacts, imperfect methods of management and the lack of sanatorium care with all the modern phases of collapse therapy and eternal vigilance through adequate follow-up service.

The same may be said of the upsurging venereal diseases, particularly syphilis, since the last war, and the same is true of the preventable killing diarrheas crowding the hospitals with children in certain seasons. Trachoma, which might be eliminated by an intensive treatment campaign, continues to take its toll. The one time Indian service physician, Dr. Lowe, should have credit here for discovering the cure for this condition.

There are many other medical, surgical and orthopedic conditions as well as dental problems. On the reservation there are communities where congenital hip is prevalent. Here early advice might save crippling for life.

These few examples suffice to show what goes on and to justify our recommendations in behalf of a fine race of people who have contributions to make to our culture and to justify what we would designate as ultimate economy through the immediate expenditure of large sums. We must protect the well by preventing and curing disease in this hotbed of uncontrolled communicable conditions. Citing a ridiculous example for emphasis, it seems the irony of fate that in this day of DDT and other agents with which to combat infestation, the teachers must go through the disgusting discipline of delousing the pupils every time the schools open and repeatedly when children are permitted to return home. Adequate health education and field service under medical supervision should take care of this as well as many other more serious evils.

The common preventable, communicable and curable diseases and conditions are being stressed in this report because they best reveal the inadequacy of past and present medical services. Other preventable conditions which go unchecked to dog the Indian's existence are pediculosis (lice), scabies (itch) and nutritional deficiencies. We realize that the Indians are subject to the average run of the diseases which afflict other races, but it seems unnecessary to enumerate them in this abbreviated report. Enough has been said to reveal certain defects, to justify what may seem to be rather radical recommendations. While looking into the Navajo's way of life and recommending the white man's culture and mode of living, we are forced to wonder what we might gain if we were willing to learn.

They seem to do very well on a rather simple limited diet. Compared to our general population they are virtually free from cancer and diabetes and they have a very low incidence of heart and blood vessel disease (arteriosclerosis). Among our people these three conditions are on the increase and contending for first place in mortality statistical columns. Perhaps the limited diet, the slow pace and the desert poise have much to do with this interesting disease discrepancy. No doubt the ratio will change as we continue to give them syphilis, gonorrhea, "firewater," soda pop, candy bars and spearmint.

OBSTACLES

Great works are performed not by strength but by perseverance.—Samuel Johnson.

While the obstacles are great, they seem not to be insurmountable. On the contrary, they present a commanding challenge.

Among the natural physical handicaps which to some extent explain and excuse the failure of the Indian service in the field of medicine are: the forbidding terrain and the almost inaccessible remoteness of many of the Indian families and communities. Naturally, this implies the need of better roads with adequate means of transportation, including the possibility of emergency air ambulance service. As explained elsewhere, the Indians on the Navajo Reservation became nomads through the force of circumstances. The life of the nomad in the desert is incompatible with adequate medical supervision and control. Even the faulty nutrition due to limited food supplies is a necessary result of the unaided nomadic existence, and it is difficult of solution. The inadequate, inaccessible, unsanitary and impure water supply constitutes serious health hazards. Among other immunity procedures, typhoid vaccine has helped to obviate one of these hazards. No doubt, few persons know that often the Indians are dependent on temporary water holes for drinking water, which is sometimes thick enough because of yellow mud to make good topsoil. How slowly we learn. Aristotle told Alexander the Great, "Do not let your men drink out of stagnant pools. . . . Athenians, city born, know no better; and when you carry water on the desert marches, it should be first boiled to prevent its getting sour."

Among the innate psychologic and spiritual obstacles are the profound attachments of the Navajos to their mother earth, which in their opinion gave birth and ultimate haven to not only their gods but to them and their children as well. Of equal importance is the fact that their religion is their medicine and vice versa, making their medicine men the exponents of both. Naturally it is difficult to move them off their beloved land and even more difficult to induce the illiterate (non-English-speaking 80 per cent of the Navajos) to discard their native medicine (religion) in favor of the white man's medicine. Though we question the efficacy of the medicine man's way of employing a few herbs and singing, dancing and drumming the evil spirits away, we must admit that compared with the

methods of modern medicine the constant presence of the medicine man and his untiring ceremonial devotions for days and nights have a profound psychologic influence.

We cannot pass on without mentioning the psychologic impact of administrative errors, whether inevitable or otherwise, and misunderstood administrative orders and regulations, whether obviously beneficial or based on the law of trial and error with well founded hope. Everywhere we were assailed by the evidence of disturbed psychology and lack of faith on account of the "sheep and goat reduction program." Though unqualified to pass on the merits of this program, we could not escape the unfortunate reaction and disturbed confidence because of this control measure which did work an immediate hardship on some families. The well meaning attempt to make available community day schools and the enforced nomadic movement away from such schools for better grass, leaving them empty, furnishes another example of natural difficulties and resulting unfavorable psychology. This naturally poses the question of linguistic difficulties, which are so obvious it seems unnecessary to devote more space to them. These difficulties and the crying need of economic rehabilitation only serve to emphasize the need of an intensive general educational program.

On the Hopi Reservation we found the schools well attended, one accommodating the Walpi area having the highest record of attendance in the United States, the children relatively well nourished and 80 to 85 per cent of the people speaking English and liking it. The Hopis are better housed and living in villages under better sanitary conditions than the Navajos. They live both by animal husbandry and agriculture and produce some fruits. Consequently, they are not so apt to suffer nutritional deficiencies. Perhaps they are more ready to cooperate, to follow advice, rules and regulations. This may be accounted for by such factors as the high percentage of literacy (English) and the fact that they live in villages (more accessible, etc.). The medical and public health services at, and emanating from, the hospital at Keams Canyon are relatively good. Since the Hopi Reservation, containing only 4,200 Indians, rests like an island in the Navajo Reservation, we wonder whether separate administration of its medical services under the proposed plan should not be considered an obstruction to efficiency and economy.

Among the obstacles wholly under the control of man may be mentioned certain deficiencies and defects in the field of physical facilities, health administrative offices, professional personnel, housing, hospitals, sanatoriums, health centers and equipment.

Obstacles arise through quantity, character and scientific quality of professional personnel. As stated elsewhere, the government or particularly the Office of Indian Affairs may not altogether be responsible for shortages and defects in this field. The impact of two world wars, the changes in medical and hospital practices and patient psychology throughout the United States have made it ever more difficult to secure competent physicians, nurses, public health, social service, rehabilitation, welfare and health educational workers.

Unfortunately, the supply of physicians for the Indian Service is influenced by unwarranted restriction which must have consideration. In the Oct. 16, 1948 issue of THE JOURNAL, this headline appeared: "The Government Needs Physicians." Time and space will not permit a full quotation. Suffice it to say that the appeal comes from the United States Civil Service Commission and that among positions to be filled are those in the Indian Service. Significantly, from our point of view, the salary range is from $4,479 to $6,235. Only those who have had professional experience can hope to start in one of the brackets above the $4,479 figure. The maximum age limit is 50 years. A long discourse on relative wages and salaries and the present high cost of living would be out of place, but those who read this report are requested to take into account the fact that a physician qualified to cope with the exceptional medical, surgical and public health difficulties presented here will have spent eight to twelve years in the most exacting and the most expensive existing educational adventure. This means that he has spent a small fortune and given up a goodly number of his productive years in order that he may make a genuine contribution in an important field of human weal. Certainly he would not work for money alone after such a grueling educational experience. But he must have a reasonable competency while he pursues his professional duties even though he works chiefly for the love of accomplishment. Nothing short of this can ever redeem the Navajo health situation. We humbly inquire, What can the Indian service expect on $4,479 a year? A job at a gasoline station before embarking on a professional education might promise more.

Before leaving this question of professional personnel, the matter of nonprofessional administrative influences causing delays, limiting initiative and occasionally leading to unwarranted control of employment, tenure of service and expenditure of medical appropriations, must have serious consideration by all who are interested in the solution of the existing medical service problems. While we admit the omission of much meaty material, we feel that the aforementioned factual data are sufficient to make a case and to warrant the following recommendations.

RECOMMENDATIONS

> The legitimate object of government is to do for a community of people whatever they need to have done but cannot do at all or cannot do as well for themselves in their separate and individual capacities. In all that the people can do as well for themselves the government ought not to interfere.—Lincoln.

The team, after traveling over the Navajo-Hopi reservations working day and night for the purpose of inspecting and studying health conditions and existing health facilities and considering the unmet medical needs of the Navajo-Hopi people, came together at Winslow to round out the two weeks' survey with an all day conference. This resulted in a free discussion of observations, impressions, convictions and conclusions. All these were given careful consideration and ultimately integrated, correlated, unified and crystallized into a creed which, in our opinion, warrants the following recommendations.

In keeping with a previous discussion of the Hopi situation in relation to the encompassing Navajo Reservation and in order that the Hopi health service may be included, we recommend that the Director of Health, Office of Indian Affairs in Washington, the District Medical Officers, Staff District IV and the Chief Medical Officer at Window Rock consider the feasibility of a unified medical service for the Navajo-Hopi Reservations.

Since the Health Service cannot possibly hope for a full fruition with intelligent cooperation and a certain degree of economic competency on the part of those who are being served as long as only 20 per cent of them speak English we recommend an intensive comprehensive program in general education. Since the reports indicate that there are 24,000 children of school age with school facilities for only 8,000, the opportunity is obvious and the need imperative. Furthermore, our treaty obligation stands as an embarrassing challenge. We take space to add that the attitude of educated Navajos and their ability to acquire skills and to develop economic resources are most encouraging. More intellectual light in connection with the medical program is badly needed.

It is the unanimous opinion of the medical team that the desired evolution of what amounts to almost a medical miracle cannot be realized under the present administrative methods. As we see the situation in the light of past accomplishments and present handicaps, only complete professional autonomy can accomplish satisfactory results. The Chief Medical Officer should be free to make plans, build budgets and make and act on decisions having to do with the welfare of his charges. He should have full charge of the medical service appropriations, the employment of professional personnel and the tenure of service. He should have proportionate office space and personnel and personal housing to meet the needs of an expanding service. He should be free to project and plan hospital and clinic buildings and to recommend location, construction and equipment. We recommend professional autonomy and an entirely separate health appropriation to be controlled by and spent for the health division.

The aforementioned long term formal educational requirements for physicians would seem to make autonomy obligatory. No other department on the reservation, not excepting education, requires so much in the way of preparation. No other service carries so much responsibility. Decisions having to do with birth, health, life and death must be in the hands of the physician; only he can justly carry the responsibility. Good physicians cannot afford to serve without initiative and freedom of action.

Though the government is bound by approximately 5,000 treaty obligations and statutes, apparently it is free to provide complete professional autonomy in the administration of medical care.

This leads to a recommendation that the Indian medical service be freed from the handicaps inherent in the Civil Service regulations, including salary and age limitations.

The Navajos sent a larger percentage of their total population into military service and war work than did the white people of the United States. It is believed that those that survive the high infant mortality and escape tuberculosis should make a good showing at the induction centers. The Navajos are anxious to make good citizens; they are entitled to the best. The best physicians are not to be found in the Civil Service supply. Those who doubt these statements are requested to check this source of medical personnel. With freedom from salary restrictions, we recommend that the Chief Medical Officer should be promptly endowed with authority to build adequate administrative, hospital, clinical and field staffs. In the administrative office he should have an Assistant Chief Medical Officer, a statistician (for the first time the present Chief Medical Officer has established and filled this position). He should have other necessary office personnel to negotiate adequately the important functions of his office and to keep the Washington office thoroughly informed as to his activities and statistical results. Only through such a service can those in the central office keep a level gaze on the administrative and field operations on the reservation, and only through such knowledge can representatives in the Washington office act intelligently. We recommend an adequate statistical service in the health divisions on the Reservation and in Washington through which all morbidity, mortality and other vital statistics may be tabulated, correlated and made available for the benefit of the service and to encourage clinical research.

In order to cover adequately the immediate needs of the Navajo-Hopi Medical Services, we recommend that the Office of Indian Affairs consider the construction of a medical center, at a rail head, possibly at Gallup or Winslow, with capacity to serve as a clearing house for all diagnostic problem cases, all major medical and surgical cases requiring expert services and special skills, possibly with the exception of thoracic surgery, which might be more profitably based at the present Medical Center at Fort Defiance.

The present hospital at Fort Defiance, now known as the Medical Center, should be converted to, and utilized in, the big task of providing sanatorium and hospital beds, comprehensive and diagnostic service, expert medical and surgical treatment for tuberculosis. Those who may not understand the significance and magnitude of this problem should read the individual report on tuberculosis.

It is believed that such a plan for expansion will be necessary to meet hospital needs, especially with the development of adequate field service and case finding. While immediately expensive it will result in the saving of life and ultimately prove to be economical.

The Medical Center should serve all outlying districts through cooperation with their hospitals and coordination of their work, through field service to be developed and through a case-screening service to be practiced in the district hospitals and health centers.

In addition to Fort Defiance, there are now four hospitals serving the Navajos and one on the Hopi Reservation serving both Navajo and Hopi. Three formerly in operation are now closed, and it is recommended that they not be reopened because of location, physical conditions and the proposed new plan.

The diagnostic, medical and surgical services in the outlying hospitals can be improved, but probably never brought to a high degree of scientific efficiency. At present the most satisfactory medical services in these district hospitals are to be found at Crown Point and Keams Canyon (Hopi).

The shortcomings in these hospitals can be largely compensated by the proper development of the proposed Medical Center and also the clearing of difficult cases through the health centers, some of which might otherwise reach these hospitals.

Though there are now three or four field nurses, there are no health centers or, perhaps better termed, field units in full operation. It seems reasonable to recommend at least four such units to meet immediate needs:

1. Shiprock, with three nurses
2. Fort Wingate, with three nurses
3. Tuba City, with two nurses
4. Chinle, with two nurses

Each of these units should have a physician (Medical Officer), a dentist, nurses, a sanatarian and a clerk. The difficulty in securing personnel willing to remain in some of these remote areas is significant. Perhaps a rotating service would help solve this problem.

The social and shopping isolation and the housing and living conditions on the reservation demand careful consideration. They definitely affect salary considerations. Some of these difficulties would be overcome by the proposed location of the Medical Center. Plans for time off, transportation and recreation for those in the more remote sections must have attention before good work and satisfactory tenure of service can be expected.

The success of these plans will primarily depend on proper professional personnel. As in the Veterans Administration chief hospitals, we feel that the medical staff at the Medical Center should be of such a caliber and the hospital and the equipment of such a character as to qualify for intern service. With this in view, we also recommend a visiting consultation and teaching service through one or more university medical schools.

Without these essentials, well qualified young physicians cannot afford to accept service on the reservations and a fertile field for valuable research will remain untilled. It will be most unfortunate if the rich opportunities in medicine, surgery, nutrition and degenerative diseases and others are not made available through execution of the plans proposed by the team.

We recommend frequent clinical and pathologic staff conferences at the Medical Center, with emphasis on educational values; as far as possible such conferences should be attended by the professional personnel at the outlying hospitals and health units.

We recommend staggered leave of absence for faithful professional personnel at the discretion of the Chief Medical Officer for graduate work in accredited clinics, hospitals, laboratories and foundations.

In our opinion the following services or departments should be considered essential, the heads of which should be qualified by training and experience in their respective fields and preferably certified specialists or of comparable standing and ability.

1. Internal medicine
2. General surgery
3. Pediatrics
4. Obstetrics
5. Diseases of the chest
   (*a*) An internist with special training in diseases of the chest
   (*b*) A thoracic surgeon who will also do bronchoscopic work
6. Orthopedics (While we have no accurate statistics we were told that there are 500 crippled children on the reservation. This may have included the unusual number of congenital hip cases in certain districts)
7. Ophthalmology and otolaryngology
8. Dermatology and syphilology
9. Neuropsychiatry
10. Pathology
11. Roentgenology
12. Laboratories with necessary qualified technicians

It was thought that possibly thoracic surgery, the dermatology and syphilology and the neuropsychiatric services might be placed on a contract basis, at least temporarily.

In connection with these plans, we can visualize an affiliation with public health schools and public health nursing schools for special training in field work. No comparable opportunity is now available anywhere in the United States. Likewise, we are thinking of training schools at the Medical Center for Navajo nurses, Navajo nurse's aids and aids for health education, social service, rehabilitation and welfare workers. The transition from desert Bedouins to useful citizens can be definitely accelerated by the use of such Navajo aids.

To make the plan function satisfactorily, transportation must be developed. We recommend more and better roads, and we suggest serious consideration of strategic air strips and air ambulance service for emergency cases—this either through government-owned planes or through contract service.

We recommend full cooperation with the surrounding state health departments in all matters of public health, including a statistical exchange service in connection with birth, communicable disease, morbidity and mortality statistics.

The team had conferences with tribal council members, educated (English speaking) teachers, traders, missionaries, Navajos and medicine men. After carefully weighing the results, we seriously considered the feasibility of a tactful approach designed to gain the confidence and cooperation of as many of the medicine men as possible and the advisability of bringing them into the medical center for a better understanding of the white man's medicine. It was thought that visual comprehension of what medicine and surgery can do and simple instruction might help obviate the danger of delay caused by prolonged ceremonials when there is dire need of hospitalization. Peritonitis from ruptured appendix and moribund babies from summer diarrhea serve as outstanding examples of disaster through such delay. The educated Navajos think the medicine man is on the way out, but much harm may be done while we supinely await his passing. We found two, a medicine man and a medicine woman, in hospital beds gladly receiving the white man's medicine. We talked to another who came to the Crown Point hospital purposely for a conference with representatives from the white man's American Medical Association. He wanted better hospital services for his people and revealed that he harbored certain pet peeves because physicians previously on the hospital staff did certain things without taking time to explain why and because postmortem examinations were performed without consent and without an explanation of what was found. This latter discussion came about in response to a question as to whether the medicine man would approve of postmortem examinations with the hope of learning how to help those still living. It is our belief that the Indians want to cooperate and that we have not fully measured up to our opportunities and our obligations.

The members of the team feel that the acceleration of education, with the hope of removing linguistic difficulties, that the coming of the franchise and participation in all federal and state benefits should make personal responsibility for medical care, except for the indigent, a valuable factor in the plan for "economic rehabilitation."

Regardless of the plan adopted, we recommend that the government should gradually move away from the debasing influences of all unnecessary paternalism and, through the elevating influences of education and economic competency, strive to engender the coveted consciousness of self sufficiency. The Great White Father, George Washington, once said, "He who seeks security through surrender of liberty loses both."

A BRIEF OF RECOMMENDATIONS

1. Unified medical and public health service for the Navajo-Hopi reservations under direction of one chief medical officer.

2. General education should be assiduously pursued until every Navajo speaks English. This is a prerequisite to the development of an adequate medical program.

3. Complete professional autonomy, giving the chief medical officer full control over the medical service.

4. Freedom from Civil Service salary provisions.

5. Salaries for physicians in keeping with training, ability and highly specialized skills.

6. The establishment of a new medical center to meet the requirements of an adequate health service for the Navajo-Hopi reservations.

7. A hospital and medical staff which can qualify for intern service and stimulate research. A consultation visiting service should be established with accredited medical schools, and all possible educational advantages should be made available to the in-service professional personnel.

8. The Office of Indian Affairs should consider the feasibility of employing the proposed medical center as a clearing house for all cases from other Indian reservations in the Southwest presenting diagnostic and therapeutic problems requiring highly developed skills and technics.

9. Schools should be established at the medical center for the training of Indian aids and interpreters to supplement the services of doctors, nurses and workers in all departments where such aids can facilitate progress in their respective fields and help bring about the gradual transition from tribal dependency to individual citizenship with its opportunities and obligations, including the privilege of paying for medical care.

10. An immediate comprehensive case-finding program in the field of tuberculosis. Provision for all cases discovered. BCG vaccination of all persons not sensitive to tuberculin. Adequate social service, health education and rehabilitation in this field.

11. The conversion of the present medical center to what might be called the tuberculosis control center or the sanatorium center. Inexpensive beds should be added as needed to give the best of management in every case discovered.

12. The Chief Medical Officer should be authorized to organize and implement adequate health field services including the establishment of field units.

13. Adequate vital statistical services should be established in the Washington Office of Indian Affairs and in the various regional offices in order that policies and practices may be intelligently conceived and implemented and research in various fields encouraged through the aid of statistical studies.

14. The Washington office and Congress should give careful consideration to the unusual opportunities for sustained and controlled research in certain important phases of medicine now posing serious questions. Among these are: 1. The surprising nutritional responses to what seems to be qualitatively and quantitatively an inadequate diet wanting in variety according to accepted standards. 2. The low incidence of degenerative cardiovascular conditions, including coronary and cerebral accidents in connection with these dietetic limitations, habitat and environmental factors. 3. The very low incidence of cancer and its possible relationship to diet. Dr. Salsbury at Ganada Mission Hospital reports only 36 cases of malignant conditions, all types, in 30,000 admissions. In the same number of white persons he should have found approximately 1,800. 4. Diabetes is apparently very rare. A study of the relationship to diet and mode of life would be interesting. Dr. Salsbury reports 5 in 25,000 cases studied. In that many white persons we would expect 75 times that number. 5. The apparent absence of and lack of susceptibility to scarlet fever poses an interesting question. 6. The unusual frequency of congenital hip in certain areas arouses scientific curiosity in this inherent biologic or hereditary phenomenon. These are only a few of the untouched possibilities awaiting the clinician and the research worker in this fallow field.

15. The individual reports prepared by the members of the team should be carefully studied by all who must assume the responsibility of planning and implementing the medical program.

SUPPLEMENT TO THE AMERICAN MEDICAL ASSOCIATION TEAM'S REPORT

The following excerpt from Sigerist's review of Jacques Schwetz's book,[2] seems to have significant application to our study of the health situation on the Navajo-Hopi reservation. It gives a graphic picture of the development of health services in Belgium's African colony and contains so much of interest in connection with our study that it seems at least worthy of the team's consideration and may be considered helpful in the interpretation of the team's report.

In 1885 the Congo Independent State was founded by Leopold II, King of the Belgians, and was placed under his sovereignty. It was annexed to Belgium and became a colony in 1908. In the beginning medical services were completely haphazard. A few dozen doctors of all nationalities without special qualifications were hired. Their function was to look after the white people and the Negro soldiers in the centers. Then from 1908 on, after the country had become a colony, services were gradually organized and steadily improved. Sleeping sickness gave the chief impetus, since it deprived the colony of native labor. The Negroes attributed the disease to the coming of the white man, a suspicion that was not without justification. The white man neither brought the tsetse fly nor the *Trypanosoma gambiense* but he greatly increased the traffic between the various sections of the country, so that the ever present flies had many more opportunities to become infected and to spread the disease.

This is not the place to describe the heroic fight against sleeping sickness and malaria to which the author devotes more than half of his publication. It was a fight in the course of which the colonial government developed a system of social medical services which in many ways was more complete than that of most European countries, a system that emphasized prevention rather than cure. In the beginning the physician was completely subordinated to the colonial administrator, so that he was entirely at his mercy, but later a special medical administration was inaugurated with a physician-in-chief at the head of the services of the entire colony, physicians in charge of the 6 provinces and others directing the services of the 16 districts. Laboratories were erected in every province and numerous schools were created for the training of native auxiliary personnel, an extremely important measure. Indeed, one does not need a licensed physician to distribute quinine or to immunize people against cholera. With adequate auxiliary personnel a physician can increase the radius of his field of action many times. Dr. Schwetz also very correctly points out how fatal perfectionism is in such matters. Physicians, of course, should be as well trained as possible, and it was a great step forward when all physicians going or returning to the Congo were required to take a course at the School of Tropical Medicine in Brussels. But auxiliaries should not be half-baked doctors, and if requirements are too high there will either be not enough students or those who do qualify will not be satisfied with the status of a mere auxiliary. This experience has been confirmed in other colonies. . . .

Dr. Schwetz is very critical of red tape which cannot be eliminated but should be reduced to a minimum, of window dressing, and of administrative megalomania, a well-known colonial disease which invariably affects certain individuals who at home would be nobody and in the colonies suddenly attain the status of a sultan. Dr. Schwetz can afford to be critical because he is well aware that Belgium has done a splendid job of social medicine in the colony. Nothing could testify for it better than the changed attitude of the natives toward modern medicine. Formerly when the doctors came to a village with puncture needle and microscope looking for early stages of sleeping sickness, the population vanished into the bush or the chief declared categorically that they refused to be pricked with needles which were the cause of the disease.

2. Schwetz, J.: L'evolution de la medecine au Congo belge, Université Libre de Bruxelles, Institut de Sociologie Solvay, Actualités Sociales, Nouvelle Série. Bruxelles: Office de Publicieté, S. G., 1946, 132 pp., reviewed by H. E. Sigerist, Bull. Hist. Med. **22**: 358 (May-June) 1948.

Today they seek the doctor spontaneously; they have realized that the white man is not only a collector of taxes, and they have confidence in the physician. . . .

I often wonder whether health conditions in tropical Africa are so much better today than they were before the advent of the white man. The Negroes must have developed their immunity against malaria long ago. Sleeping sickness was limited to certain regions. There was some leprosy, to be sure, Bilharzia, worm diseases, dysentery. They probably had more food and a better diet than they have now, and their witch doctors must have had good results in a number of cases. They certainly gave more and better psychiatric services than the whole of Africa has today. Then the white man came, took land away from the natives, forced them to do wage work, taxed them, upset their cattle economy and replaced it by a money economy which is hard for them to understand, spread syphilis, alcoholism and many other diseases. The social, economic and moral balance of entire populations was destroyed, and this obviously affected the people's health adversely. And then the white man seeing that he was losing the chief wealth of his colonies, the labor power of the people, developed health services and did it sometimes very successfully as we have seen in the case of the Belgian Congo.

Detribalization, education, the modernization of agriculture and the development of some industries are unavoidable if the standard of living of the African population is to be raised; it cannot be done, however, by an exploiting minority but only by the people for the people.

Clinical Notes, Suggestions and New Instruments

NEPHROSIS OCCURRING DURING TRIMETHADIONE THERAPY

Report of a Case

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In May 1948, Barnett, Simons and Wells[1] reported a case of a 16 year old patient in whom the manifestations of a nephrotic syndrome appeared while the patient was taking trimethadione ("tridione"). Certain features of the patient's course and condition seemed to differ from the clinical picture of nephrosis resulting from poisoning or occurring spontaneously from unknown causes. The nephrosis occurred during the administration of the drug, disappeared after the withdrawal of the drug, recurred when the medicine was exhibited again and again disappeared after withdrawal of the medicine. Moreover, the patient at the height of her nephrotic state showed intense proteinuria, hypoproteinemia, hypercholesterolemia and yet practically normal renal function. The authors found it probable that there was a causal relationship between the treatment with trimethadione and the appearance of the nephrosis. Nevertheless, they state that "final evaluation of the relation of tridione to the nephrotic syndrome must await further observations in this and other patients." Many of the details of the following case history closely parallel the experience reported by Barnett and his co-workers.

REPORT OF A CASE

In 1935, at the age of 7 years, J. P., a white boy of Jewish parentage, was admitted to the New Britain General Hospital with fever and headache, and, after a brief illness diagnosed as polioencephalitis, he recovered with a residual weakness of the right side of the face. In 1939 he was again admitted to the hospital with clinical laboratory observations which led to the diagnosis of lymphocytic choreomeningitis. He recovered from this without apparent residue, but in June of 1947 he began to have seizures. These seizures were described as a feeling of being cut off from his surroundings. Without dizziness or tendency to fall or faint, he nevertheless felt as if he were walking on a pillow, or on air, and sometimes believed that he was aware of an odor which he never has identified. After three such spells had occurred the patient was examined by a consulting physician, who reported that there were abnormal electroencephalographic observations that were indicative of idiopathic epilepsy. On June 14, the patient commenced taking diphenylhydantoin sodium ("dilantin"), 1½ grains (98 mg.) three times a day, and trimethadione, 3 grains (195 mg.) three times a day. Shortly after this therapeutic regimen was introduced the patient complained of pain in the right shoulder, slight nausea and pins and needles sensation in his fingers. The treatment was discontinued entirely for several days and then instituted again. No ill effects seemed to result, although studies of his blood and urine were not made. The dosage of diphenylhydantoin sodium and trimethadione was reduced about March 1, 1948. He received 2 capsules containing 1½ grains (98 mg.) of diphenylhydantoin sodium and 2 trimethadione tablets (195 mg. each) one day and one-half that dose on the alternate day. On May 1 the patient went for a hike in the woods, and that evening he noticed puffiness of his face. On May 9 he began to have pain in his shoulders and nausea but no vomiting. During the following week he noticed a gradual increase in the size of his thighs and legs. The patient denies any recent infection of the respiratory tract, sore throat, chilling or other illness or having taken any medicines other than those listed.

On May 15 the patient came for examination because of his obvious massive body swelling. He weighed 173 pounds (79 Kg.), fully dressed, although he claimed his usual weight was 148 pounds (67 Kg.). The boy was well developed and rather pale, with puffy eyes. He had a residual weakness of the right side of his face. His pupils were equal and responded to light and in accommodation, and the retinal vessels appeared normal. His tonsils were absent, the tongue was furrowed but not abnormal in color. His pulse rate at rest was 64 and entirely regular. Blood pressure was 132 systolic and 84 diastolic. There was no evidence of basal congestion in his lungs and no scrotal edema. Examination of the abdomen did not reveal enlarged organs or areas of tenderness, but the abdominal wall felt thickened. There was decided thickening with pitting edema of his thighs and feet. His urine had a specific gravity of 1.035 and a thick cloud of albumin when boiled with acetic acid. Microscopic examination showed abundant mucus, about 1 white blood cell per low power field and a few hyaline and granular casts. His red cell count was 5,300,000 and hemoglobin 105 per cent, or 16.3 Gm. per hundred cubic centimeters. The white blood cell count was 12,800, with a differential count of 56 per cent polymorphonuclear leukocytes, 40 per cent lymphocytes and 4 per cent eosinophils. His nonprotein nitrogen was 32 mg. per hundred cubic centimeters. The blood cholesterol was 266 mg., serum albumin 2.8 Gm., globulin 1.6 Gm. and total protein 4.4 Gm. per hundred cubic centimeters. The reaction to the Kline test was negative.

All medication was withdrawn. The patient was confined to bed, with a salt-poor diet and fluid intake of 1,800 cc. per day. The following day his pulse rate was 48, but otherwise there was no change. On May 18 he had a temperature of 101 F. by mouth, nausea, mild general abdominal discomfort and extensive painful indurated erythema of the skin of both thighs. He was then admitted to the New Britain General Hospital. On admission his weight, without clothing, was 171 pounds (78 Kg.). The same diet was continued and similar fluid intake, and he was given intramuscular doses of 300,000 units of penicillin ("duracillin") daily for ten days. He became afebrile the day after admission and remained so throughout his twelve days in the hospital. The erythema disappeared in forty-eight hours and all symptoms of discomfort cleared up. A detailed record of his intake of fluids and output of urine is included in the chart.

During the first week that the patient was in the hospital results of daily urinalyses showed little change from those reported on May 15. The specific gravity of the urine remained

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1. Barnett, H. L.; Simons, D. J., and Wells, R. E., Jr.: Nephrotic Syndrome Occurring During Tridione Therapy, Am. J. Med. **4**: 760 (May) 1948.