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**Approaches to Rural Health Care:
The Indian Health Service**

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Background

There are 564 federally recognized tribes of American Indian and Alaska Natives (AIAN), as well as additional non-official tribal groups. These tribal communities are spread across the United States and consist of 4.3 million adults (1.5%), according to the 2000 US Census. It is an incredibly diverse population, with 43% of AIAN in the West, 31% in the South, 17% in the Midwest, and 9% in the Northeast. They face daunting health challenges; chronic disease is more prevalent among AIAN populations than among other racial/ethnic minorities in the United States. AIAN have higher mortality rates in multiple areas including tuberculosis, chronic liver disease, diabetes, accidents, and pneumonia and a higher prevalence of health-risk behaviors such as cigarette smoking, obesity, and absence of physical activity.^{1,2,3} To further complicate these issues, AIAN are less likely than white or other racial/ethnic populations to have received preventive screening such as Pap smears or cholesterol testing.⁴ These disparities are likely multi-factorial in origin; there are cultural, genetic, socioeconomic, and behavioral factors which all contribute, as well as barriers to access and utilization of care. Ultimately, AIAN experience a five-year shorter life span compared to the general US population.

The Indian Health Service (IHS) was founded based on treaty agreements between the US federal government and tribal governments. Formally established by the Snyder Act in 1921, the Indian Health Services received funding for: “the benefit, care and assistance of Indians throughout the United States ... for the relief of distress and conservation of health ... and for the employment of physicians” (P.L. 65-87, 42 Statute 208).⁵ Operating on limited funding across a vast geographical area, the IHS has already had to deal with many key issues facing health care today.

Limited resources have mandated prioritization of care and services. A research working group estimated that the costs of personal health care services for Indian people are similar to health plan benefits for the average US citizen.⁶ According to that cost model, the IHS-appropriated funding provides only about 55% of the necessary federal funding to ensure mainstream personal health care services to American Indians and Alaska Natives accessing the IHS system.^{7,8}

It is important to recognize that, as United States citizens, the AIAN population is eligible to participate in all public, private, and state health programs available. The Indian Health Service is an organization focused on improving AIAN health that works in addition to and in collaboration with these other health services. Approximately 57% of the 4.3 million American Indians and Alaska Natives living in the United States rely on the IHS to provide access to health care services in 45 hospitals and over 600 other facilities operated by the IHS.⁹ In order to prioritize with limited resources, most IHS funds are appropriated for American Indians and Alaska Natives who live on or near reservations. Congress also has authorized funding to support programs that provide some access to care for AIAN populations in urban areas. The health services are provided directly by the IHS, through tribally contracted and operated health programs and through services purchased from private providers. They also collaborate with nongovernmental agencies, such as charities or universities.

These limited resources have also driven the Indian Health Service's focus on disease prevention and conservation of health that has preceded and inspired wider public policy. For example, AIANs have injury mortality rates 2–4 times greater than other ethnic/racial groups.¹⁰ The IHS has implemented an injury prevention program based on the public health principles used to effectively control infectious disease; community-specific solutions have been implemented as well as community education programs to emphasize that injuries are not “accidents” but predictable, preventable events.

Diabetes represents a large health disparity between AIAN communities and the average US population, as AIANs have the highest rates of type 2 diabetes in the nation.¹¹ The federal government initiated the Special Diabetes Program for Indians (SDPI) and provided \$150 million over five years for “the prevention and treatment of diabetes in American Indians and Alaska Natives.”¹² These funds have since been reauthorized twice due to the IHS successes in combating this disease. Currently, 333 community-directed diabetes programs in 35 states are implementing diabetes treatment and prevention programs that address local community priorities.¹³

Geography has required inventive long-distance care and a health care infrastructure capable of reaching even the most remote locations. This includes many traveling services, such as the community health representatives discussed in the case, as well as small site clinics in remote areas. The IHS is also a leader in IT infrastructure that facilitates the collection, processing, storage, and transmission of health care information. The IT program is fully integrated in all of the IHS programs and has proved to be a crucial investment to bring optimal care and specialty services to a vast number of rural locations.

Recruitment of physicians to these remote locations, with limited technology available, is difficult. The IHS struggles to maintain its health workforce, with approximately 21% of the positions remaining unfilled at any one time and an average length of service of 10 years.^{14,15,16} There is a dedicated staff for a geographical area that is in charge of recruitment of all health professionals, from nurses and physicians to billing administrators and medical student program directors. These medical student programs are also a source of staffing; they introduce the IHS mission to students early on in their training and demonstrate the benefit that can be derived by working in an underserved community.¹⁷ Similarly, the IHS Scholarship program supports the education of Indian health professionals. Since 1981, the number of federally employed health professionals has increased by 272%, and many scholarship recipients have gone to work in tribal or urban Indian Health programs.¹⁸ Recent legislation has also reduced the pay disparity between the public and private sectors, and through the IHS Loan Repayment program, much of a physician's tuition or debt can be repaid if they agree to work for a specified amount of time in public health care.¹⁹ While these programs do increase the numbers of new physicians, it is not clear that they result in long-term retention after financial payback periods are complete.²⁰

There is vast cultural variation among tribes, and longstanding Native American traditions must be respected—even incorporated—in the treatment of AIAN communities. The IHS consults with tribal governments and encourages—even requires—their involvement in policy development and participation. This interaction promotes individual tribes advocating for their own health needs, as evidenced by regional Listening Councils with tribal leaders.

An additional level of tribal self-governance was signed into law in 1975 in the form of the Indian Self-Determination and Education Assistance Act. This allowed each tribe to exercise decision-making authority over its own affairs, including the allocation of their health care funding.²¹ This means that each tribe has the option of participating in the federally run Indian Health Services or using the funds to function as an autonomous tribal health care provider. As of February 2010, 330 tribes participated in these more autonomous arrangements with the IHS. The tribes involved, either partially or fully, in self-governance represent 58% of the 564 federally recognized Indian tribes in the US today.²²

The incorporation of such diversity within one umbrella organization is a difficult task. The Indian Health Service faces all the challenges that accompany rural health care, with significant financial barriers to provision of care and a patient population in poor overall health. They are responsible for culturally diverse populations and vast geographic areas, despite severe physician shortages. While the Indian Health Service has managed to create an infrastructure that has made significant strides to minimize the health disparities present in American Indian/Alaskan Native populations, there is still much work to be done.

Case Introduction

The definition of rural setting is variable, but the US Census defines rural as “open country and settlements of less than 2,500 residents.”²³ Rural communities represent nearly 20% of the population and are heterogeneous in their culture, population density, and economic and geographic characteristics.

Rural populations have higher rates of smoking and lower rates of exercise compared to their urban counterparts.^{24,25} The average rural resident has a lower level of education, lower income, and is more likely to be uninsured. The availability of health care services is highly variable and dependent on geography; residents in rural communities have longer distances to travel to obtain health care and fewer options of services available. It is no surprise that rural communities have worse health outcomes and a greater burden of disease. This case aims to illustrate the challenges faced by rural populations with respect to their health care and the problems involved in the provision of such care. This case is centered on the Indian Health Service, a federal health care system responsible for the health care of nearly 2 million American Indian and Alaskan Natives across the United States.

Part I

Nathan Cheveyo is a 45-year-old man who lives alone with his two dogs in Shiprock, New Mexico. He has been there his whole life; he was born on the reservation and raised by his mother, who struggled to make ends meet with her job as an administrative assistant for a local construction company. Nathan graduated from the local high school, which was a source of pride for his mother, and started working odd jobs. Nathan has now established himself as pretty handy and gets consistent work as a mechanic for whatever car, truck, or piece of farm equipment in the area that needs to be fixed. He makes approximately \$18,000 yearly, which is often enough to get by, but Nathan does not have savings or health insurance.

The city itself is small, with only 8,746 residents, 96% of whom are American Indian, spread out over a vast area.²⁶ The nearest big city is Albuquerque, approximately three hours away, so Nathan doesn't go often.

Nathan is obese; his BMI is approximately 31 kg/m² (as compared to the normal range of 18–25kg/m² and overweight range of 25–30kg/m²). He does not get any regular exercise. He does not see a primary care physician with any regularity; the last time he was treated in a hospital was when he broke his hand fixing an engine. Instead, whenever he feels unwell, Nathan visits the tribal healer who has treated him since childhood.

Recently, Nathan has noticed that he has been more tired than usual. He thinks this is because he doesn't seem to be able to sleep through the night, as he has to get up to urinate every couple of hours. He also noticed some tingling in his feet but without pain.

Discussion Questions

- What concerns do you have about the state of Nathan's health?

- What lifestyle changes would you recommend? Do you think that Nathan would follow them? Consider both the cultural and financial implications of your recommendations.
- What concerns do you have about Nathan's health care? Are there ways to address them? Again, be sure to consider the cultural and financial implications.
- Do you think Nathan is at higher risk due to where he lives? Why or why not?

Part II

Dr. Aaron Carter works as an Emergency Room physician at the Northern Navajo Medical Center, which happens to be the nearest hospital to Nathan. He is confronted one morning with a shaken elderly woman, who tells him frantically that her son, Nathan, is losing a lot of weight. Upon entering the room, Dr. Carter finds Nathan, his mother, and the tribal healer Nathan relies upon.

After a more detailed interview, Dr. Carter discovers that Nathan had to drive an hour and half to get to the hospital and that he had been seeing his tribal healer. In Nathan's records, Dr. Carter discovers that Nathan had been to the hospital a few years ago complaining of a sore on his foot that would not heal. At that visit, Nathan received a diagnosis of type 2 diabetes based on a significantly elevated fasting blood glucose. It was recommended that Nathan make lifestyle changes to manage his disease, including adopting a regular exercise routine and monitoring food intake. He was also given a prescription for Metformin. Additionally, Nathan had been instructed to follow up with his physician for regular screenings to monitor his clinical progression and his Hb1Ac levels (a form of hemoglobin used to identify the average plasma glucose concentration over prolonged periods of time). Unfortunately, this physician has since moved on to a position in a different hospital, as is common within the Indian Health Service.

Therefore, based on Nathan's current state of health, Dr. Carter suspects that these clinical recommendations were not followed. When prompted, Nathan admits that he was not particularly good about his eating habits but that he did try to walk more with his dogs and initially noticed some minor weight loss. Nathan states he was confused about which doctor to see once his previous physician left and that he felt fine, so he didn't want to take any time off from work.

Discussion Questions

- What are the underlying factors that contribute to Nathan's not following his previous physician's orders?
- What could be done earlier to help prevent high-risk patients, such as Nathan, from developing diabetes?
- Physician shortages are a major problem within rural healthcare. Why do you think this is, and what can be done about it?
- What is Dr. Carter's responsibility to Nathan's belief in tribal healing? Should it be addressed or ignored? Would your opinion differ if the tribal healer had not been present for the appointment?

Part III

After Nathan's appointment in which he was additionally diagnosed with early diabetic retinopathy, Dr. Carter was left shaking his head. Nathan was not at the point where he needed laser surgery for his retinopathy, but if things continued to progress, he would be. What had gone wrong that allowed Nathan to slip through the cracks? If Nathan had been able to properly monitor and control his blood sugar, he would have had a significantly reduced risk for retinopathy. What could be done to prevent further progression of Nathan's diabetes and its complications? As an Indian Health Services physician, Dr. Carter knew that there were resources in place to help Nathan, but he also knew that all too often these resources were limited and did not reach those in need.

A community health representative (CHR) works throughout the Navajo reservation surrounding Shiprock, and Dr. Carter makes a note to himself to get in touch. The community health representative model was designed to utilize strong community networks by employing respected tribal members to foster cross-cultural understanding and health care services and education. If the CHR could add Nathan to his caseload, Nathan would receive regular checkups and health education right in his home or at a more convenient community center. The CHR could also provide insight and advice for Nathan about the combination of tribal and "Western" medicine. Dr. Carter knows that the effectiveness of CHRs has been shown to increase client health status, health and screening related behaviors, as well as decrease emergency room visits^{27,28,29,30} Another resource that Dr. Carter wants to take advantage of for Nathan is telemedicine. He knows that regular dilated eye exams are going to be difficult to schedule for Nathan, as he lives far from the health center, and often a trained optometrist or ophthalmologist is not onsite to perform the exam. A teleophthalmology program uses digital cameras at the health center to capture images of the patient's retina and optic disc. These images can be taken by locally trained staff at the health center and then transmitted electronically directly to a larger referral hospital for reading and diagnosis. This innovative approach would allow Nathan, who lives in a rural community, access to experts and the high-quality care he needs.^{31,32}

Discussion Questions

- What is the best way to address the access to care issues presented when treating a patient like Nathan? How should follow-up be maintained?
- With limited funding, how should new resources be allocated to rural communities? Which patients or communities should have highest priority?

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