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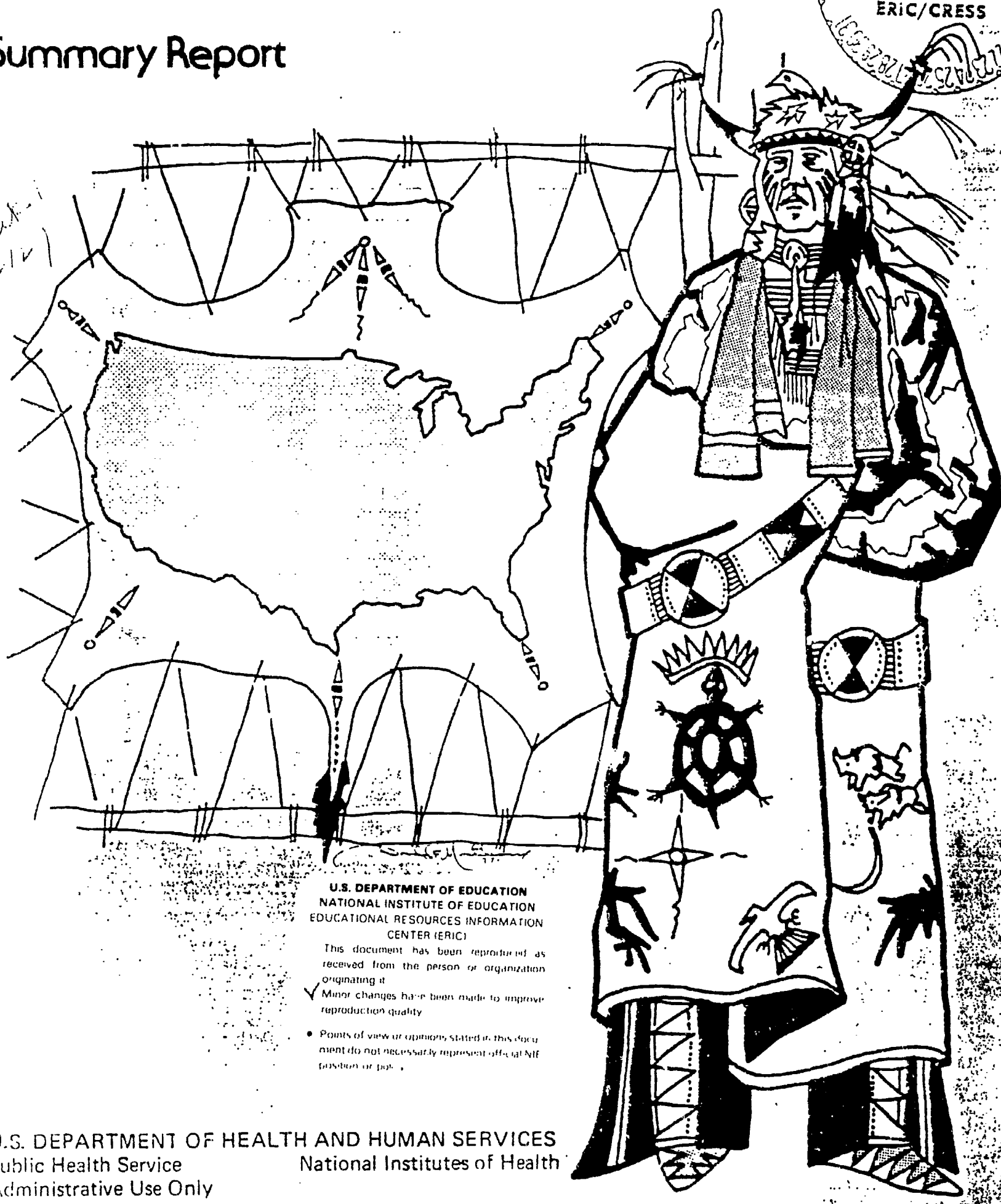
ABSTRACT

As part of the National High Blood Pressure Education Program effort, the conference explored the impact of high blood pressure (hypertension) on Native Americans. Participants, including health professionals, health service consumers, and volunteers providing health services to Native Americans, discussed these issues: traditional Native American treatment of hypertension; training and utilization of ancillary health personnel in hypertension control; resources available for hypertension control; development of protocols for screening, treatment and control of hypertension by the Indian Health Service; hypertension from the paramedical viewpoint; and current research efforts. Two resulting recommendations were that Native American and Alaskan Native high blood pressure control projects be implemented, both on and off reservations, and that curriculum materials on chronic disease management and detection be developed for outreach workers. The report contains the keynote address concerning the use of ancillary health personnel in community-based high blood pressure programs and two presentations, one concerning the role of the Health Services Administration in state high blood pressure grants for reaching hard-to-reach population and the other concerning the implementation of Native American recommendations about high blood pressure. Also included is the text of a panel discussion on historical/traditional research and current research concepts. Fourteen recommendations are listed. (BRR)

SECOND NATIONAL CONFERENCE ON HIGH BLOOD PRESSURE CONTROL IN NATIVE AMERICAN COMMUNITIES

Summary Report



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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SUMMARY REPORT

of the

Second National Conference on

High Blood Pressure Control in

Native American Communities

November 6-7, 1980

Tulsa, Oklahoma

Sponsored by the

National High Blood Pressure Education Program

National Heart, Lung, and Blood Institute

National Institutes of Health

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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INTRODUCTION

High blood pressure (hypertension) affects some 60 million Americans. It contributes to hundreds of thousands of deaths each year from heart attacks and strokes. Studies have shown that certain minority populations suffer a greater incidence of high blood pressure (HBP) and related diseases than is found in the population as a whole. Although current data are limited on the prevalence of HBP in Native Americans, health professionals serving this population consider it a significant factor in morbidity and mortality in this group. Consequently, more research and planning for health programs for these communities are needed.

As an initial response to this problem, the National High Blood Pressure Education Program (NHBPEP) sponsored the First National Conference on High Blood Pressure Control in Native American Communities, April 20-22, 1977. That conference resulted in the development and subsequent implementation of many recommendations calling for increased attention to high blood pressure control in Native Americans.

To further explore the impact of this national health problem on the Native American population, the NHBPEP convened the Second National Conference on High Blood Pressure Control in Native American Communities, November 6-7, 1980.

Among the issues addressed at the conference were the following:

- traditional treatment of HBP from a Native American perspective;
- training and utilization of ancillary health personnel in HBP control;
- resources available for HBP control;
- development of protocols for the screening, treatment, and control of HBP by the Indian Health Service;

- hypertension from the paramedical viewpoint; and
- update on current research efforts.

Conference participants included health professionals and paraprofessionals, consumers of health services, and volunteer workers providing health services to Native Americans. Participants not only benefited from information presented by experts in the field, but also learned from each other. Emphasis was placed on sharing information on practical approaches to HBP control, available community resources, and personal experiences.

This summary report includes some of the information presented at the Second National Conference on High Blood Pressure Control in Native American Communities. Recommendations from conference participants also are listed. This resource document represents another step toward further investigation of the problem of and possible approaches to improving the delivery of health care to Native American populations throughout this country.

RECOMMENDATIONS

Below are listed recommendations developed by participants in response to presentations on topics such as: traditional treatment of HBP from a Native American medicine man's perspective; technical resources available for developing a hypertension control program; and training in HBP screening, treatment, and control for community health representatives and ancillary help.

1. National Heart, Lung, and Blood Institute (NHLBI) and Indian Health Service (IHS) jointly sponsor high blood pressure control demonstration projects among Native American and Alaskan Native populations, both on reservations and off reservations.

2. National Institutes of Health and Health Services Administration develop curriculum materials on chronic disease management and detection training for outreach workers.

3. State health departments set up minority committees to advise high blood pressure control programs.

4. Directors of Medical Services in the Indian Health Service meet annually with representative tribal groups to discuss progress in hypertension control and related cardiovascular diseases.

5. Provide ongoing training in the high blood pressure control process for community health representatives (CHRs).

6. State health departments recognize that many Native Americans and Alaskan Natives do not live on reservations, and develop services to address the special health care needs of this target population.

7. All tribes and those who provide health care services to Native Americans be concerned about the shift from categorical health program grants to public health block

grants. These groups should lobby to preserve specific Federal funding focused on HBP control.

8. Develop and implement a process for undertaking epidemiologic studies and reporting and disseminating research findings.

9. Indian Health Service undertake more active programming in basic life support systems.

10. In the basic life support system, one physician be trained in life support.

11. Regional training for improved trauma medicine be made available.

12. Funding be provided to conduct surveys to determine the capability of Indian Health Service units to handle cardiovascular problems, to be done either on a clinic basis or through a referral system.

13. Physicians be provided an orientation to the culture and traditions of the tribes they serve.

14. A clearinghouse be established for public and patient information, such as an office for research and development.

KEYNOTE ADDRESS

Utilization of Ancillary Health Personnel in Community-Based High Blood Pressure Control Programs

Emory Johnson, Director of the Indian Health Service

My presentation today will depart somewhat from what I had originally planned to say. Instead, I will try to respond to the questions many have asked me regarding the effect of Mr. Reagan's victory on Indian health care. Although I am not in the political arena, I think it might be useful to briefly present my perspective on this issue.

In looking back at the hypertension initiative, we can note that it was started by Elliott Richardson, who was the Secretary of Health, Education, and Welfare in a Republican administration. Since its beginning, this initiative has been carried to great height by subsequent administrations. Therefore, I would like to point out that a change of administration does not necessarily change national priorities or necessarily bode ill for the kinds of programs that serve the needs of our people. I think Mayor Barry of Washington, D.C., yesterday pointed out that the President is a President of all the people. Concerns for hypertension and its consequences for all people are concerns of any administration.

As far as Indian programs are concerned, I have experienced changes of administration from one party to the other before. My experience has been that Indian programs in general and the Indian health activity specifically have never been a partisan political issue. We find strong support for such programs in Congress from both parties.

The basic foundation of the Indian health program, which is the Indian Health Care Improvement Act, was sponsored and initiated by a Democrat, Senator Henry Jackson, and a Republican, Senator Paul Fannon. I will never forget the hearing before the House when the

panel from the Congress came to testify in favor of the bill. In addition to obvious support from Senator Jackson and Senator Fannon, we also had Senator Barry Goldwater, the distinguished conservative Republican from the State of Arizona, and the Honorable John Rhodes, Republican leader in the House. Therefore, when I say that Indian health has not been a partisan political issue in my experience, I think these examples provide some substance to that statement.

I encourage all of you to look on this as the American political process, in which there is always change. Change always creates uncertainty, to be sure; but I think we should look forward to this administration and look forward to the changed leadership in the Senate as a potential for further development, growth, and strengthening of the basic health delivery systems for Indian people. I would say that in a very positive and very supportive sense.

I know that Dr. Lythcott has really supported the Indian health program, and I know that kind of leadership is going to continue in one form or another. This is not a partisan issue. This is about people, the needs of people, and a responsive and responsible government will deal appropriately.

As you all know, high blood pressure is really a major contributor to the problems of our population in terms of sickness, disability, and death. The Indian population is not spared the ravages of hypertension. Whereas the overall mortality/morbidity rate is somewhat less, it is clear that in certain age groups, particularly from age 25 to 54, the mortality rate for the Indian population is higher, for whatever reasons.

We also have some reason to believe that this is increasing. Dr. Bedingfeld and Dr. Sievers can talk to you in great depth and with great wisdom about how or why these things may be happening. Whether it has to do with changes in lifestyle, with the high incidence of diabetes, or any of a series of things, we all know the impact of this disease on people. Approximately 100,000 outpatient visits a year are made through Indian Health Service programs, with around 2,000 hospital admissions resulting from hypertension.

So clearly it is an illness, or a lack of wellness perhaps, with which we need to deal. I will leave it to our distinguished clinicians to explain to you the causes and cures of hypertension. Suffice it to say that in medicine we used to call it "essential hypertension," which was a nice word. It sounded very learned, and "essential" meant that we did not know what caused it. Even though clinicians can tell us many things about hypertension, I do not think that even today we could find the magic bullet that tells what causes hypertension. We only know certain results of it, and we know certain things that can be done to deal with it.

In the Indian Health Service, we have been involved in the hypertension program since Secretary Richardson's initiative back in the early 1970's. Recently we did a baseline study of hypertension in the Indian Health Service. More than 80 percent of all the patients we have seen in our hospital clinics in the last year have been screened for hypertension. Our goal for this fiscal year is to see at least 90 percent of the people, because without early detection, all our other efforts to alleviate the morbidity and mortality are not going to occur.

In keeping with some of the guidance you have provided at previous conferences and meetings, and in meetings with the NHLBI Committee on Hypertension in Minority Populations over the past three years, we have developed a model for hypertension quality assurance that we feel is useful. It has been used in our clinics where we have been testing it. Perhaps the urban clinics also will be interested in looking at it. This model looks at how we comply with what we think are certain critical functions of hypertension control.

We also have established some model diabetes control programs to try to determine how we can apply the best wisdom of clinical and programmatic work to the control of diabetes. One of those model diabetes programs is located nearby at Claremont, where they have a very effective hypertension control program being

conducted by other than physicians. This brings me to my subject this morning.

The evidence is substantial that treatment of hypertension does make a difference. In earlier times, there were always questions about that. However, more recent studies have unequivocally demonstrated that even treatment of mild hypertension has a positive impact on reducing morbidity and mortality. Although we are not as sure with diabetes, there is some evidence that careful control of diabetes also makes a difference.

But both high blood pressure and diabetes are the kinds of diseases in which the patient can live for a long time without being aware that they have a health problem. By the time a person becomes symptomatic, the disease is severe, and may have been so for a long time. Often damage to target organs at this point is not easily reversed, if it is possible to reverse it at all. Therefore, it is very clear that with diseases such as hypertension and diabetes, the key is early detection and control.

As we look at it, there are six different components to the process of hypertension control. First, the individual must have some contact with the health delivery system. Once the individual contacts the system or the system contacts the person, the individual must be screened. Just waving to somebody as they walk through the building does not do anything. Contact alone is not enough; the person must be screened.

Screening is of absolutely no value unless somebody pays attention to the blood pressures recorded at the screening. Having nice blood pressures in a patient's chart does not help anyone. An abnormal screen or a potentially abnormal screen must be recognized and carried on to the next step.

The fourth step is diagnosis of the patient. Does the patient have hypertension or not?

If he or she does, then the fifth step must be taken, which is to offer and hopefully provide treatment. If they do not have

hypertension that is the end of the process, aside from periodic screenings.

Following the prescribing of treatment is the issue of followup, a sensitive part of the whole process of hypertension control. It does little good to go through these five steps without followup, and some assurance that the patient is following his or her prescribed treatment.

Compliance with treatment for a chronic disease is a really tough proposition. There have been many studies recently in the medical literature about so-called compliance. I think most physicians are appalled when they learn how poor compliance is with their prescribed treatment. I am not talking about clinic treatment; but I am referring to mainstream medicine in this country. Some of the studies that have been done were on these very kinds of people, the kinds of great private practices where it is assumed that everything right and wonderful is being done. Yet patient compliance under some of those circumstances is very poor. Without some mechanism for patient follow-up, the time spent in the first five steps is wasted. What I am saying is to have a hypertension control program, it is essential that each of these six steps is addressed.

Where do ancillary personnel fit into this constellation of need? It is safe to say that in most of these six steps, the physician or the more traditional medical care model is really not very effective or not very useful. My clinical colleagues may want to challenge me on this, but I will stand on that statement. I do not think physicians are very good at helping people access the health delivery system. They are not terribly good at the screening business. They are fairly good at recognizing abnormal screens, if they happen to see them cross their desk. However, they are very good at diagnosing and prescribing treatment.

But followup is something off the boards. In many instances, if a patient is given an appointment for a return visit and does not show up, that is probably the end of it in the traditional

medical practice. This is generally true whether it is private practice, Indian Health Service practice, or any other kind of practice. Physicians, if left to our own devices, do very well at dealing with about two of the six steps. Seldom do we do three of them.

Clearly then if we are going to mount an effective hypertension control program depending on the traditional medical care model where nothing starts until the physician waves his or her wand, we are not going to do a very good job in hypertension control. This is a statement of my firm belief, but I think that even many of my clinical colleagues would have to agree.

Then, what in the world do we do? Having concluded that physicians and the traditional clinical approach are not likely to be successful, what do we do? Obviously, we do what you all have been promoting, and what we have been promoting in the Indian Health Service for at least a dozen years formally and for many years informally before that: develop a health delivery system that goes beyond the traditional private practice model, the traditional clinic model of health care. We must all recognize that the basis for health care and health delivery begins in the community itself and begins in the motivation of the population being served.

The group in the Indian Health Service that has had the most impact on this activity is the community health representatives (CHR). We formally began the community health representative program around 1969, although we had CHRs like Dr. Annie Wauneka back in the 1930's. We did not know what they were and did not have a name for them, and it wasn't a very formal arrangement. But they were doing the job.

Back in the fifties we had village chemotherapy aides in Alaska, the key factor in bringing the tuberculosis epidemic among Alaskan Natives under control by the midsixties. In each

of the little isolated villages in Alaska, we had someone in the community trained as a chemotherapy aide. Their job was to make sure that the community people received their medications, even if it meant visiting them in their homes every day. In many cases, that is what it took.

Therefore, we do not have to be convinced of what it takes to get some of these things done. We do not have to be sold on the concept of the use of ancillary personnel in making a real difference in a disease control program. That has been very well documented, and we are all totally convinced that it is true.

In Indian country, there are about 2,500 community health representatives who work with the tribes. There are also a couple of hundred village health aides in Alaska, who live in the villages and provide health care village by village.

These individuals are employees of the tribes or employees of the native village. They carry out programs according to the priorities of their tribal governing body. They are not employees of the Indian Health Service. Consequently, what they do can vary substantially from reservation to reservation. But their basic training and orientation are toward a systems approach to contact, to provide a contact point for community members to the health care system and to screen that population. They are able to recognize the deviations from health, the problems that they may have, and then make sure the patient is referred to an appropriate health care provider for diagnosis and treatment. Then the CHRs return to the community to provide followup. That is the traditional model of the community health representative. As I stated earlier, not all of them are doing precisely that at the moment; but nearly all of them were trained in that particular model.

In the hypertension control program it is obvious what CHRs can do, what they have done, and will continue to do. On most reservations, they are a major source of contact between the health system and the community. To the extent that they are knowledgeable

about hypertension and have the ability to communicate effectively with the community, they will be able to speak the community's language. To the extent that they are knowledgeable about hypertension and agree that HBP control is a priority of the tribal government, then they clearly are the mechanism for contact with the people.

Many CHRs are trained to do the screening, to take blood pressures. We have developed protocols used by some tribes that permit their ancillary personnel to go through most of the steps of this process, and to do it effectively.

I am not aware that we have had a controlled study of the hypertension functioning of the CHR. But we did have a good study of their ability to do these kinds of things in infant diarrhea. We were not surprised to discover that the CHR was somewhat better than the physicians in complying with the necessity of sequentially dealing with all of these problems. They were even slightly better in some respects than the public health nurse, whom I used to think was the top, most effective person in dealing with the community. This demonstrates that with proper training and proper assistance, these individuals can do an extremely effective job of supporting the control program.

Earlier we discussed the problems of actual treatment, complying with treatment, and followup. Screening and complying with prescribed treatment and followup of treatment all clearly relate to patient behavior, in many respects more than to the behavior of the provider. We are really talking about motivation. Ancillary personnel have clearly indicated that they are much better at motivating community people to comply with treatment. There is no question about that, and their effectiveness is not restricted to hypertension. In all of the studies conducted, it is clear that they are much more effective. They are more effective communicators; they are more effective in getting across to the community an understanding of what the problems are and how the individual

may need to change. They are successful at getting patients to comply with treatment.

Allow me to add one more thought. Until now I have been talking as a physician about how we medically treat disease, but I do not want to leave you with that because I am convinced that there is a lot more to hypertension than we understand. Until our research scientists can show us which gene to manipulate or which hormone to twist to "cure" hypertension, I am convinced that many things about it do not respond to the "traditional" medical treatment. By tradition, I mean so-called scientific medicine.

That is the reason I am so pleased today to see that your program includes discussions of other approaches to treatment, other than the pure medical treatment. We know that the medicine in most cases will make a difference, but it will not cure the disease. It may control it. Still I am not totally unconvinced that cure may not be possible through other methods that do not involve pills. Perhaps through the discussion with Ed Manatachie and others about the potential for traditional Indian medicine, we may be approaching an understanding of cure or control through alternative methods to the so-called scientific medical method.

This group can see things from many perspectives. We can begin to see what each of these perspectives might contribute to a better understanding of the disease and of the hypertensive patient. Certainly, we can see what we can learn from each other and what adaptations we might make of these various therapies or preventive mechanisms. Such actions may mean that maybe we will not have to have hypertension control programs in the future. Maybe we can have hypertension prevention programs, because that is what it is all about. If we had a preventive for hypertension, it would be better than screening and treating everybody for the rest of their lives.

Maybe through interchange of our thoughts about the various treatment methods and by better understanding the disease, we may learn what we need to know to conduct a program of high blood pressure prevention and not simply one of control.

With that, I will leave you all to your deliberations. I think you have a very fine, well organized, and diverse group of subjects to discuss. There are many distinguished people on your agenda. I see this group as one that stimulates interchange of ideas, a challenge to the customary wisdom. I encourage you to get on with the business of finding better ways of doing things that we all know are so critically needed to improve health care delivery to Native Americans and Alaskan Natives in this country.

Thank you for inviting me.

SELECTED PRESENTATIONS

Role of Health Services Administration in the State High Blood Pressure Grants for Reaching the Hard-to-Reach Populations

George Lythcott, M.D., Administrator, Health Services Administration

My purpose today is to discuss with you available Federal resources other than those of the Indian Health Service, which you can tap in fighting hypertension. This topic is worth special attention since up to half of the Nation's Indian people now live off reservations. Most of them have moved in and around our cities, where the resources of the Indian Health Service often cannot serve their health care needs.

Some Native Americans are encountering problems directly associated with their changes in lifestyle, both in the counties and in the cities. Even Native Americans who live on reservations encounter lifestyle changes. For those who have moved into our cities, these changes often are accentuated. Native Americans in such situations must adapt to a different culture and way of life as well as many associated tensions, without sufficient support of family and a familiar environment.

Recent studies indicate that death rates attributable to hypertension in adult Indians under age 55 exceed that of the Nation at large. Our figures include those living on reservations. Our researchers still do not know what specific factors are responsible for this increase. Some tentative evidence suggests three factors that may influence these increases: (1) increase in diabetes rates; (2) introduction of non-Indian heritage into the Native American gene pool; and (3) urbanized lifestyles with indications of hypertension which a growing number of Indian people are now experiencing. These matters certainly bear further investigation.

The issue before this conference is to determine what can be done in practical terms to reverse the trend of increased hypertension among Indian people. This issue goes beyond the boundaries of reservations since half of the Indian population has moved in and around our cities. The question is: what resources are available for dealing with the problems of hypertension for Indian people living in or around the cities? I bring you some advice that I hope in the long run will provide positive answers to this question.

The Health Services Administration (HSA) provides grants to states fighting hypertension. Until last year, states received these grants as an automatic entitlement. They were not required by HSA to send goals or measurements of progress toward these goals. This way we began to encourage states to make haste in establishing hypertension programs. And it worked. By 1977, only a few years after these grants were started, 53 state health agencies had developed 235 hypertension projects within their boundaries. Last year, Congress agreed with our recommendation that the time had come to get the states to focus their hypertension efforts more on the traditional, hard to reach populations, which are usually at a higher risk of getting high blood pressure. Many of these hard to reach populations are minorities.

Henceforth, it said, states would have to compete for hypertension funds. States would have to submit applications to HSA, spelling out goals and documenting progress. Most importantly, they would have to begin focusing on hard to reach populations. The committee directs that in allocating funds, every effort be made to target high-risk groups. Last year, when the directors of state hypertension programs met in Washington, the new requirements were spelled out. I told them we would not expect them to develop new program emphasis and change their course overnight.

Consequently, we made fiscal year 1980 a transition year for them. In the first project review cycle, we allowed states to continue their existing programs with only a few minor changes. But in the supplemental funding cycle for 1980, we required states to submit plans for our review and focus on high-risk, hard to reach groups in their populations. States that wanted supplemental funding were required to do three things: (1) identify the target population they wanted to reach; (2) develop a plan for reaching their long-range goals; and (3) demonstrate to us their capability to measure actual progress toward that goal.

As of the start of the fiscal year 1981, Oklahoma and other states have specifically included Native Americans in their targeted populations. An additional part of that process gives them a goal that will reflect the maturity of these programs. By March 31, 1984, they must achieve two objectives: (1) have a system in place to assure that blood pressure screening, diagnosis, and referral for treatment is made available at least once every two years to 90 percent of their identified target population; and (2) have a followup system in place to assure that every person they find and diagnose as hypertensive is enrolled in a treatment program unless the person declines to do so.

This new focus of state hypertension grants on hard to reach, high-risk groups should measurably improve the access of Indian people to off-reservation resources devoted to high blood pressure control. But to assure better access to these resources, groups like yours need to develop closer relationships with the state health agencies. States need to learn from you how they can reach Indian people living in and around cities.

The Health Services Administration wants this to happen, too. That is the reason our guidelines for reviewing state applications for hypertension grants call on states to consult with groups like yours. We have advised the regional health administrators in each of the 10 regional offices of this, and they will review state applications with this in mind.

The new focus of state hypertension grants offers you an opportunity to be heard. The states now have a reason to seek out your advice and counsel. If any representatives of state health departments are at this conference, now would be a good time to establish communication with the sponsors of this conference and any of its constituent groups.

Still another way that Native American groups can help improve access to resources for fighting hypertension among their constituents is through state and local health systems agencies. These agencies are charged with ensuring that primary health care services are made available to the medically underserved, and the Indian population clearly fits into that category. In fact, we have even designated some sites where the nation's urban Indian population resides as health care impoverished shortage areas. To date, we have been able to assign 15 members of the National Health Service Corps to five urban programs.

In light of this development, it would be especially appropriate for Native American groups to seek representation on state and local health systems agency boards. These agencies need your insights on the problems of urbanized American Indians in order to fulfill their mandates. Who but you can give them that insight? California's Urban Indian Health Council has been doing just that, and reportedly is having great success in San Diego and Orange Counties.

Still more resources can be brought into play. For example, we now have contracts with 41 Indian health organizations that provide medical services outside of reservations. You can tap this resource to find diagnosis and treatment for people living in urban areas.

Community health centers and urban health initiatives that support their organizations also are excellent sources. We require these centers to measure blood pressures of everyone over the age of 10, and to provide followup care to all hypertensive patients willing to follow an approved treatment program.

Indian people who move to neighborhoods served by these centers have immediate access to these facilities. All they have to do is walk in the door of one of these centers. Groups like yours may be able to inform people of such facilities through contacts with tribal councils. Perhaps what is needed is a special effort to inform Indians still living on tribal lands about urban resources before they decide to leave for the cities. The Indian Health Service knows where these facilities are located, and also can assist tribal councils in this effort.

In addition, tribal councils and tribal health departments can educate Indian people about the risks and hazards of hypertension. It is especially important to coordinate all these efforts. After all, most of the resources needed to mount a successful attack on hypertension already exist. They just have not been coordinated and focused where the need is greatest.

That is the reason we want to see state hypertension grants used to augment and coordinate existing efforts among Federal agencies, states, communities, and voluntary sources. Some states will be using statewide coordination grants from the National Heart, Lung, and Blood Institute of the National Institutes of Health (NIH) for this purpose. The Institute is the lead Federal agency in the national effort to control hypertension. We in the Health Services Administration, with institutional standards, definitions, and medical expertise, provide information to give to the state agencies. Our two agencies, NIH and HSA, consult with each other regularly.

Efforts also should be made to assure that Indian people who are eligible make use of public programs like Medicaid and Medicare. These programs can be very helpful for people who know about them and know how to get involved. Indian people who have moved into the cities may be unfamiliar with programs like Medicaid, since they are accustomed to receiving health care throughout their lives from the Indian Health Service. Therefore, they need to know the eligibility requirements of the state where they live and how to apply for this assistance.

Voluntary health agencies and public health departments need to be alerted to this fact. Groups such as yours are in a good position to both alert them and advise them on how to best communicate with Indian people in the cities.

Gearing up for the task of meeting the needs of America's medically underserved is more than a job; for me, it is a calling. In the years devoted to that calling, it has taught me that neither government nor consumer groups can go it alone. The needs of the medically underserved must be met. Government and advocacy groups like yours for the underserved must work closely with one another. Each brings unique resources to the struggle. Those resources are strengthened when the two work together. By bringing us together to share information, this conference is serving that purpose. I congratulate everyone who has had a hand in organizing this conference. I ask that you send your recommendations to key people in the Health Services Administration. I assure you we will be intensely interested in your conclusions and in assisting you in reaching your goals.

Implementation of Native American Recommendations on High Blood Pressure

Graham W. Ward, Coordinator, National High Blood Pressure Education Program

Let me begin my discussion by telling you that I am very happy to be here with you today. This is an important event for all of us who are working in hypertension control in Native American communities.

Back in 1977, we convened the National Conference on High Blood Pressure Control in Native American Communities. Out of that 2-day conference came some very good suggestions and recommendations to the National Heart, Lung, and Blood Institute.

Perhaps one of the most important things that came out of the recommendations had to do with the need for prevalence data on high blood pressure in Native American populations. When we initially began to investigate ethnic and minority concerns back in 1975, one of the clear messages was: Don't ask us about ourselves, because we have never had the resources to do the research to find out about ourselves. Since then we have been trying to remedy that situation.

I am starting off with this, because it is the activity in which we have been least successful. I want to talk about that and clear the decks with it. We forwarded recommendations to our Division of Heart and Vascular Disease, which conducts and supports epidemiological studies. They are still considering them. One recommendation about epidemiological studies was considered last year. But we had a budgetary crunch and it had to be tabled. At this point, I do not know what is going to happen this year.

As you all well know, we just had an election. What you may not know is that there is still no budget passed for the U.S. Department of Health and Human Services. We have a continuing resolution. According to the news media, it is unlikely that the Congress in their lame duck session will pass a budget; but rather will extend the continuing resolution so that the new Reagan Administration can respond to it. So I am not sure just when we will have a budget. Such uncertainty obviously makes planning difficult, because studies in epidemiology tend to be large in scale and long in duration to obtain an adequate amount of data.

However, we have tried to do some other things. Our staff has talked extensively with representatives from the Indian Health Service, with the notion that if we are unable to get a good epidemiologic study going at least we can obtain some better clinical data.

We have had some discussions about the types of data that could be collected in clinical settings. While it is not perfect, it can give us better insights into such things as the prevalence of hypertension, how many people are being treated, how many are under control, and how many remain uncontrolled in that clinic population. That will provide some better information with which to proceed. I think we are making some progress in that area.

An area in which we have probably been most active deals with communication and education. We produced television and radio public service announcements featuring a variety of minority groups, specifically including Native Americans. In fact, a policy that I have adopted, that I am trying to keep alive, is that every other year all the television material we produce will be aimed at minorities.

We tried that 1 year with some misgivings, because we did not know what the response was going to be. We are very concerned about the problems that minority groups have, but we also still have a majority group that has to be addressed.

This new policy seems to work very well, so we are going to continue it. We will be featuring minority groups again in this year's round of television spots. I have not heard all the details, but I understand there were some casting problems in New York. Not many Indians who live in New York want to respond to this kind of activity.

I would love to be able to tell you that we definitely have a Native American spot this year; at this point, I still cannot do that. But I will find out and let you know.

We produced a series of posters that you probably have seen, which include a specific Native American representation. We provided a small amount of funding to the South Dakota United Indian Association, which is headed by Rosemond Goins. This group was able to produce some Native American educational brochures and a

poster for local dissemination. We were very pleased to see those produced for a whole host of reasons. The most important reason is that these materials were not produced as a result of a bureaucrat in Washington who decided what Native Americans needed to know about hypertension. These were produced by Native Americans with Native Americans deciding what Native Amerians needed to know about hypertension. That is the way the process really works best. We at the Institute are delighted that the limited funding was able to be stretched so far.

Although not a direct Institute activity, we also were engaged in the review of a fairly comprehensive patient education tool being developed by the American Heart Association, I believe initially for the Navajo, with the intent of adopting it to other groups in the future. I am not sure where that is in the production stage. When I last saw it, it seemed to be pretty well organized and was holding together very nicely.

Perhaps the most important activity that we have underway now is pulling together a group, including Native American representatives, to examine closely the question of how can information best be used among our ethnic and other minority groups in the country.

Much superficial research has been done on this, which does not tell us a great deal. No one has examined the question closely across the board. We are going to try to do that with a group that is interdisciplinary in two respects: (1) It represents virtually all the minority groups recognized by the Federal government; and (2) It includes representatives from various professions, not just health professions. Therefore, we will be able to examine this topic from a number of perspectives. The group includes academicians as well as practitioners. We know that combination will result in answers to many questions on this issue.

We project that it is going to take us between a year and 18 months to sift all this information out to find out what is good

and quality research, and to discard the poor research. Since even the valid research will be small scale, we will have to do a lot of interpretation of the results. Mabel Cason is the chairperson of this Diffusion Strategies Task Force. We are looking forward to receiving the results of their deliberations.

In terms of trying to develop resources, we have had to turn to people who are in the service provision area. The mission of the National Institutes of Health is to support biomedical and behavioral research. Most of the needs among minority groups, including Native Americans, are for improved services delivery, something we are not allowed to support unless it is incidental to the conduct of research. We have had to turn to other agencies, and we have tried to do that.

As I mentioned before, we have had some discussions with the Indian Health Service in terms of what can be arranged there. We have had continuous discussions with the Bureau of Community Health Services (BCHS). One of the major issues we are trying to solve there has to do with getting dollars for program project grants in hypertension administered by BCHS to pay more attention to the needs of Native Americans in the areas served by those grants. I am sure you are aware that many state health departments are unwilling to invest their own resources for Native Americans. They assume that this is a Federal Government problem.

But the people out there still need to be served, and they need both Federal, state, and local resources to do it. Therefore, we are trying to influence that type of thinking, not only with the BCHS staff, but also by having our own people go out and talk with state health departments. We have encouraged them to continually, gently raise this issue. I say gently, because if we raise it too vigorously, we are going to hurt you. We are going to get people angry and turned off, and they will resist any efforts. So we continue to prod for their support.

Another key activity in which we have had some real successes is the use of minority consultants in reviewing grants and contracts. In the last round of reviews for the program project grants by the Bureau of Community Health Services, they accepted from us, without question, recommendations for minority reviewers including Native Americans. Rosemond Goins participated in some of those review sessions.

The amount of leverage we were able to get from this small number of people on this first round probably was not very great. But we cracked a stone wall in doing that, which had not happened before. We have a precedent on which to build.

In terms of professional education, we had the American Association of Indian Physicians review the first report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. For those of you who are unfamiliar with it, this report is in effect the medical bible of our program that defines what hypertnesion is, talks about how it should be detected and diagnosed, the workup for the patients, when and what therapy to initiate, and how to proceed to advance that therapy.

The 1980 report of the Joint National Committee, published in October, contains a sizable portion on patient education and regimented hearings that we were unable to get in before. This new report has just been approved and published. We plan to go back to the Association of American Indian Physicians to get their responses to this new report.

I am particularly interested to hear from them this time, because we do have a section which deals with patient education. When one talks about influencing patients and trying to motivate them, cultural issues really come to the forefront. One must be sensitive and attuned to those. Obviously, for a general document we had to have general recommendations. I would like to know how much more specific those recommendations have to be to help Native

Americans; and whether or not a separate addendum to that document might be needed to provide more guidance for people who serve the Indian population.

Another important activity that did not stem directly from this group, but has significant implications for it, was the support and development of a report from an interdisciplinary task force. The problem of hypertension is so large and complex that no single profession can do all the things that have to be done to control hypertension. It takes physicians, nurses, pharmacists, educators, social workers, outreach people, administrators, technicians, and a variety of people all performing various kinds of roles to get this job done. In fact, if you think about it, most of the problems we have in hypertension control are not technical, medical problems. Our state-of-the-art is such that it is fairly straightforward and clear-cut. It may get more complicated as we learn more and learn how to differentiate between hypertensive patients, but we are not there yet.

Most of our problems do not involve patient management but rather practice management. Are there resources set up in practices that will really facilitate detection, counseling, and follow-up of hypertensive patients, the community education of people about hypertension? These are examples of the kinds of problems that present major barriers right now to hypertension control. Therefore, we need that interdisciplinary outlook.

We had difficulty getting that report reviewed and commented on by the High Blood Pressure Coordinating Committee. The Coordinating Committee is dominated by physicians, who generally are the most outspoken. They were pretty uncertain about this; but they finally accepted it. They agreed to disseminate the report to all the other organizations participating on the Coordinating Committee for their review and comments. In my opinion, we can make some real progress here.

The projects I have outlined for you here today represent some of our efforts, not all. I would like to save some time for questions and answers. I will end my discussion with just one comment about the future of the program. We have just had an election and you might all be wondering are we going to be here tomorrow because Federal programs come and go. The answer to that is definitely yes. We have just awarded a 3-year support contract to help us carry out these programs, so we will clearly be here at least that long. Our intent is to be here longer. But one never knows about funding and other kinds of things in Federal programs, when the Congress will change its mind.

We now have a conservative Republican Senate we did not have before, and we do not know what effect that will have. We now have a large number of new Republican faces in the House; we are not sure what effect that will have on us. We do not know who our Republican Administration is going to be yet, save for the primary leaders, the President and the Vice President. Needless to say, there is much uncertainty.

For this reason and for another reason that I will get to in just a minute, our previous program emphasis of network developing and identifying people around the country who can deal with hypertension and encouraging them to work together is going to take a slightly back seat. We are not going to do away with it because that approach is very important.

However, our program emphasis is going to be on development of problem identification and problem analysis skills among the people with whom we work. We have to do that for two reasons. The first reason has to do with uncertainty about the future. If we ever get cut off at the pass before our job is done and have left behind a legacy of people who know how to do the same kind of problem analysis that we have been doing, then it will not hurt very much. The second reason is that if we do not do this, we

have failed. If we create a program that continues to foster increased dependence on the Federal government for hypertension control, we have not done this country a service. We have to set up a program whose intent is to go out of business when the country takes over the job it should always have been doing. So that is the reason we are going to be leaning in that direction.

Those are the prepared comments that I had to give to you this morning. I would like to stop now and begin having a conversation with you. Thank you again for allowing me to share with you this important conference.

PANEL PRESENTATION

Research: Historical/Traditional and Update on Current Concepts

William Smith, M.D., Chief of Medicine, Public Health Service, Indian Hospital, Claremont, Oklahoma

I would like to take this opportunity to pay tribute to Dr. Kelly West, who died recently. In my view, he was perhaps the most outstanding researcher in the area of Indian health, especially his work on diabetes, probably the most prevalent problem facing the Indian people. The type of research and the types of programs that have come out of his research in diabetes should serve as examples of how to develop a cohesive and comprehensive plan for dealing with hypertension. I will refer to Dr. West's work in describing the chronic disease research that has been done in Oklahoma in the Native American community. His research provided invaluable information, supplementing that which already existed and expanding our understanding of diabetes and related illnesses such as hypertension.

In his work, Dr. West served as an excellent model for all fields, particularly of how research should be approached in Native Americans. This is an area in which his genius really has shown through, and it is the reason a review of diabetes in a seminar on hypertension is quite germane. It very much applies to our discussions today.

He was both a scientist and a clinician, a teacher and a friend. Although very prolific, with 170 publications in the last 15 years, he was always readily available to researchers such as myself, who carried forth his message of improved health care for Indian people to all who would listen.

Dr. West was an epidemiologist, and he asked practical questions concerning the extent, nature, and causes of disease. But he also was a diabetologist, whose training led him to an early awareness of the problem and prevalence of diabetes in Indians.

His first experience with health problems in Native Americans was in 1964 in North Carolina, where he did some work with the Eastern band of Cherokees. At that time he demonstrated that the highest rate of incidence of diabetes of any reported population then was more than 25 percent of those over the age of 30. Comparable rates were found in Mississippi Choctaws. Then Drs. Bennett, Miller, and their associates working with the Southwest Indians confirmed this increasing epidemic. Many investigators were becoming aware of this problem about the same time.

In his work as a professor at the Oklahoma Health Sciences Center, Dr. West began to accumulate data about Oklahoma Indians. Finally, in 1974 he published a study that defined the extent of the epidemic in 15 tribes in Oklahoma. Having defined the problem and realizing the diverse genetic, cultural, and geographic origins of the people, and the distinct difference between the rural and urban populations, Dr. West considered the Oklahoma Indians a particularly ideal group in which to study diabetes.

He then quickly developed resources for pursuing this study. His methodology is important to this group, because the same type of techniques should be applied in compiling resources for studying hypertension. He organized a team of Indian Health Service physicians, support staff, dieticians, and medical students, then solicited the support of the IHS. He solicited laboratory support from various universities around the country, particularly at the University of Oklahoma and the Center for Disease Control in Atlanta. Through a grant, he established a full-time nurse investigator at the Indian hospital at Lawton.

He acquired broad-based funding, also an important point for generating resources to examine a problem like this. His support came from private foundations, the National Institutes of Health, University of Oklahoma, Indian Health Service, and from groups such as the International Sugar Foundation.

Perhaps the most important thing he did, which serves as an example, is that from the very beginning he went to the Indian people. He went to the tribal organizations and health advisory boards, and explained to them the magnitude of the problem of diabetes. He explained his goals and solicited their support for his efforts. From the very beginning the Indian people themselves were not really much involved. They were never concerned about being experimented on, or being a captive population under a microscope. Dr. West succeeded in dealing with this sensitive area very well.

Dr. West was largely responsible for development of the World Health Organization's multinational study on the vascular disease of diabetes. This study involves 11 countries around the world, and includes two groups of Indian people, the Pimas and the Oklahoma Indians.

By doing this, he expanded the significance of his studies and the studies of others on American Indians as the impact of the study was felt around the world. Actually, 7,000 diabetics have now been studied in this effort. The study has tremendous significance in terms of trying to find definite answers to the problems presented by diseases such as diabetes and hypertension.

There is probably no better way to convey the feeling Dr. West had for the Indian people and the way he approached medical research than to list the objectives of his studies as he stated them:

- To help Indian people with diabetes, present and future, by investigating the causes and effects of diabetes and its major complications.
- Incidental to this, to provide expert practical advice to participants in the study, the patients, and to the health care professionals who care for them.
- To assist in improvement of programs for screening and detection.
- To strengthen liaison between the Oklahoma Health Science Center and the Indian Health Service.
- To gather information on causes and effects of diabetes that may have application to other ethnic groups as well as to Native Americans.
- To evaluate certain aspects of the present system of care to identify potential for improvement.

Reviewing this diabetes work as a model for research in the area of hypertension and other problems in general, I will briefly discuss his method and design. Two groups were studied, a group that was taken care of at the Lawton Hospital and a large group of Indians from North Central, West Central, and Western Oklahoma--actually 17 counties in all. In addition, comparison studies were done on nondiabetic fat and lean Indians and family members of diabetics. Specific parameters to be examined were identified very carefully and included things such as age, age at onset, sex, duration of treatment, diet history, weight, weight history, family history, degree of blood, skinfold thickness as a measure of how much fat a person has, and a variety of other physical observations relating to different complications of diabetes; a variety of blood tests, like insulin levels and blood fat levels; and electrocardiograms. A total of 150 variables were examined in this study.

In addition to this effort, detailed interviews were conducted with some of the older Indians. Hospital charts were reviewed in an

effort to further establish when this epidemic began in Oklahoma. Attention was given to what diets were like when diabetes was rare as it once was; and the incidence of obesity in the old days was also studied. Extensive history and physical evaluations were conducted on 1,000 diabetics and 600 nondiabetics.

To be included in this study, an Indian person had to have more than 50 percent Indian blood, and had to be between the ages of 35 and 54. The average blood quantum in this study was 88 percent, which also is important when studying Indian health problems. Eligible subjects were identified by hospital and clinic records, tribal rolls, and family histories; and attempts were made to contact all these individuals. Through the aid of the Indian people themselves subjects were brought in to be studied. They all realized that they would improve their health care at the same time that they helped us learn about diabetes.

There were strict requirements in this study in terms of how long people had had diabetes and what diagnostic tests were used when they were diagnosed. People with significant diabetes were not included.

The study was divided into stages. At the completion of each stage a preliminary evaluation was made of the basic epidemiologic data collected. As interesting findings were noted, the researchers branched off and looked at specific areas. Therefore, this is really a branching-tree type of study. In addition, periodic reports were made to both the IHS and to the Indian people themselves in language that they could understand. So progress was understood by all.

The large research studies are very complex. In diabetes and in hypertension there are many variables that affect the nature of the disease. They require meticulous planning and detail. However,

it is this type of careful and exhaustive attention to detail that produces data which are significant and reproducible contributions to scientific knowledge. The same approach must be taken in examining other complex questions such as hypertension in Native Americans.

Through his work, Dr. West has both confirmed and strengthened existing concepts about diabetes in Indians and also has broken new ground. The large numbers of subjects and variables looked at make the data very convincing. I believe that the conclusions that contradict preexisting ideas about Indian diabetes, and the findings that contrast with the concepts that we have held about vascular disease in non-Indians, for instance, are all well established and will hold up under scrutiny. This research is significant in terms of planning approaches to HBP control in Native Americans.

When thinking about research, it can be viewed as pure or applied research. Back in the early days of this country when medical research was in its infancy, there was big controversy about what kind of research should be supported. Pure research is research in which facts are gathered for their own intrinsic worth and then hopefully, sometime down the line, they will have some bearing on specific health problems. Applied research is that research which is directed toward specific health problems and the results of which are directly practical and applicable to health care. This research was definitely applied research.

Immediate benefits and outgrowths of the research sponsored by Dr. West include an increase in expertise in diabetes management. As causal relationships have been identified, this information has been used to alter preventive care approaches. In the area of lipids, as the magnitude of these abnormalities became apparent and their relationship to vascular complications became more appreciated, dietary and lifestyle therapies have changed to deal with this aspect of the problem.

There has been an immediate increase in the level of patient knowledge of the disease process and the risks of diabetes. We all know that this is a prerequisite for adequately approaching any kind of major health problem. There has been a heightened sense of awareness of dimensions of the diabetes epidemic that has occurred in the Indian population. They understand both the problem and our research efforts better, and have been supportive of screening efforts.

Evaluation of the present care system has occurred coincidentally. It is one of the things that Dr. West targeted to be dealt with in his work. This is the result of the many innovative suggestions from Dr. West and others such as Dr. Sievers who have been watching this problem for a long time. In addition, a multidisciplinary approach to evaluation and to management has been developing, involving Indian people themselves. Legitimacy has been lent to the academic institutions, particularly in this case the University of Oklahoma, because it no longer is seen as "the white ivory tower." The university has loaned its resources and expertise directly, and has focused them on the problem of diabetes in Indian people.

Information about Oklahoma Indians to some degree reflects other tribes and other ethnic groups. Through comparison with other populations around the world, important conclusions have been made about preventability of some of the complications thought to be inevitable in diabetics, most importantly the macrovascular disease, a disease of the large blood vessel. The result has been a much more positive and optimistic outlook about the problem, which also is a prerequisite for effectively dealing with it.

A new emphasis on prevention has been created. Armed with facts demonstrating the epidemic proportions and implications of the diabetes problem in Native Americans, the National Diabetes Board persuaded Congress to establish the Diabetes Initiative Project. This is an extensive program throughout the Indian Health

Service, designed to implement Dr. West's and Dr. Sievers' recommendations for management, particularly for factors such as weight reduction and exercise. All these things are equally applicable to the problem of hypertension. The therapeutic modalities used in the Diabetes Initiative Project should be and must be applied to the treatment of hypertension as well.

The task of the project actually was to consolidate the management of diabetes in a team approach, and to improve comprehensive diabetic care. As an outgrowth of this, the Diabetes Initiative Project is gathering information about diabetes to supplement existing data, and to examine the effect of these new clinical and treatment techniques on both the control of diabetes and the complication rates.

The same organization could and should be applied to other clinical diseases such as hypertension. The two diseases, hypertension and diabetes, share the same etiologic basis. They are lifestyle problems to a large degree, which implies problems with screening and with management. Both diseases are relatively asymptomatic; people often do not know they have them. The disease has not caused problems, the treatment causes problems. In treating both diseases, a change in lifestyle is required. Therefore, compliance problems are very similar for both groups. Clearly then this model applies to hypertension. Both involve the same kind of problems for followup, and that is the reason a team approach is so important. Both diseases deal with the same target system, the damage occurs in the same system: the vascular system.

Although not much information exists, there is little doubt now that hypertension occurs with increased frequency in diabetes in Indians. In at least Oklahoma Indians, severe or malignant hypertension was relatively uncommon in our studies and continues to be in the work of the Diabetes Initiative Project. The number of people with systolic blood pressures greater than 200 mmHg was less than .3 percent. The number of individuals whose systolic

blood pressure is between 170 and 199 mmHg was 5 to 10 percent. That is not a surprisingly high number. However, the amount of mild to moderate hypertension that we see is very striking. Initial statistics generated through the Diabetes Initiative Project are bearing this out.

Although increased blood pressure in diabetics can, in part, be due to increased incidence of some unusual hormonal problems (e.g., fetal chromocytoma, hyperaldosteronism), there seems to be some increase in this type of disease accounting for hypertension in diabetics. But most of it is due to the amount of obesity seen in diabetics. Obesity is the key. It is a factor you must consider if you are going to understand diabetes in Indians. Of the Indians who are diabetic, 97 percent are obese. In addition, some of the hypertension is undoubtedly due to the kidney disease more advanced diabetics are proned to have.

However, studies in non-Indian diabetics indicate that diabetes itself, independent of obesity, does increase the risk of both hypertension and coronary artery disease. This is most likely true in the Native American as well, but the exact causative relationships between diabetes and hypertension, and between diabetes and atherosclerosis or coronary artery disease are not yet very clear.

The long-term deleterious effects of hypertension are seemingly the same for both diabetics and non-diabetics to a large measure, but there are some very notable exceptions. These include factors such as diabetes which seems to protect patients to a degree against some severe complications of hypertension. Furthermore, hypertensive heart disease, a very common condition in non-Indians with hypertension, is not common in the Oklahoma Indian. This is particularly true when contrasting it to coronary artery heart disease or ischemic heart disease, which is on the rise and is approaching epidemic proportions.

Stroke, strongly related to hypertension in non-Indians, was very unusual in Dr. West's studies and apparently lower than in Oklahoma whites. In contrast to the Pima studies, the Oklahoma study showed increased retinopathy, a disease of the eye, in hypertensive diabetics with systolic blood pressures less than 170 mmHg and with no evidence of kidney disease. But in people with systolic blood pressures greater than 170 mmHg, there is an association in the Oklahoma diabetic who is hypertensive. These people have more retinopathy. Much more work must be done in this area, which is critically important because of the increasing risk of coronary artery disease, hypertension and diabetes both being important factors in development of this problem.

Some questions that need to be answered include: In the diabetic Indian, does the degree of hyperglycemia or the degree of control in our patients affect the incidence of hypertension or of coronary artery disease? We know that increasing control will reduce the development of other complications, but what about hypertension, does it really improve that? Is the hypertension associated with diabetes in Indian people as reversible with the techniques of weight reduction and exercise therapy, and the control of the sugar that comes with that, as are some of the other complications, like nerve and kidney problems?

Hopefully, the work of the Diabetes Initiative Project, carried on in the spirit of and the design of Dr. West and Dr. Sievers and others, will answer some of these questions. The ongoing work by Dr. West's associates will continue to contribute to our knowledge in this area.

John L. Coulehan, M.D., University of Pittsburgh, School of Medicine, Pittsburgh, Pennsylvania

I am very pleased to have the opportunity to speak with you. I would like to make two main points in my remarks. First of all, there is no question that more epidemiologic research is needed. But there has been a problem because of the difficulty of designing studies, the long-term commitment, and other things that are required to perform such studies, given the fact that funding is always insufficient and frequently nonexistent for such basic studies.

Today I will talk about a program with which we have been working. Through a working relationship between the University of Pittsburgh School of Medicine and the Navajo Area Indian Health Service, we have been able to conduct many studies over the last 12 to 14 years. Secondly, I will select a few of those studies that relate to hypertension and demonstrate some of the results of this work.

This program began in 1967, with the perceived need by the Chairman of Community Medicine at the University of Pittsburgh for basic health research work to be done among American Indians. This need arose specifically because of the chairman's relationship with the Cornell group in their Many Farms Project among the Navajo in Northern Arizona. The program was developed based on the relationship with the Navajo area.

The objective of the program was to send third and fourth year medical students to the reservation for 6 to 12 weeks to serve a dual purpose. First, they would work under the clinical personnel at the hospitals to perform direct service and to learn parts of their clinical medicine. Secondly, they also would have community health responsibilities. In this phase of their work, they also would be precepted by some University of Pittsburgh faculty, as well as by the physicians at the Indian Health Service Hospital.

Developing an ongoing program like this had several advantages on both sides. It provided an excellent clinical experience for students and an opporunity for them to assist in a complete health care system. The Indian Health Service provides not only acute care, but it also serves many of the public health functions served elsewhere by different agencies. Therefore, it gave a more complete picture for medical students. Finally, it allowed the students to interact with Indian culture and thereby develop a better perspective of their own culture.

The advantages to the Indian people and the Indian Health Service were that the students who went out to the reservation were preselected, interested students, not just students randomly chosen. It also provided an excellent source of recruitment for physicians for the Indian Health Service. It developed new useful information about the health of Indians.

Over the years we have had 138 medical students work on the Navajo reservation. Interestingly, we know that 35 percent of those who completed their training have gone back to the Indian Health Service, and have served for a period of 2 or more years.

The kinds of studies these students have participated in vary from what might be called basic research to a variety of other areas. In the area of planning, many students have looked at programs, looked at problems, and talked to people, read the literature, and developed documents for planning certain programs with new approaches. In addition, they have done community surveys. The Greasewood Nutrition Survey in 1968 is one example, which is part of the National Nutrition Survey and is one of the most widely known surveys of Indian nutritional status. Some of the studies have been intervention studies. In other words, a problem was identified, and some intervention was used to try to alleviate the problem or improve it.

Furthermore, health care evaluations were performed. In these cases, the programs were in place. The students and the physicians

from the University of Pittsburgh evaluated the programs by finding out the criteria used to demonstrate success and applying these criteria either to the health records or the health outcomes of the population. Finally, some retrospective studies were done by going through charts to find the incidence or the prevalence of certain diseases, such as acute rheumatic fever or bacterial meningitis among Navajo people.

A community survey of well Navajo adults was conducted in 1978. These people were not sick and did not have hypertension. They were seen in various locations. They were not randomly selected, but rather were people who agreed to have their blood pressures taken, regardless of the location of the screening site. We surveyed 644 Navajo adults; about half were men and half were women. Using the criteria of diastolic blood pressure over 90 mmHg, 17 percent of the Navajo adults were considered hypertensive. (Of course, to be actually diagnosed as hypertensive, they would have to go to an appropriate facility and have the same results replicated at least two more times.) This number included 24 percent of the men and 11 percent of the women. So, HBP was more than twice as common in the men studied.

These data are compared with data obtained in the Many Farms community. Most of these blood pressures were taken by the Cornell group in an area not far from Many Farms, from 1956 to 1962.

If we look at the mean systolic blood pressure of Navajo men and women in this study, as compared to white and black men and women in a national screening study conducted using the same techniques and methods, it is clear that up until about the age of 40, Navajo men have systolic blood pressures in the same range as white and black men and women. But over the age of 40, and for Navajo women of any age, the average systolic blood pressure is lower.

One of the hypotheses borne out by some of the other data accumulated is that the young Navajo men appear to be, for that

population, relatively more susceptible to hypertension. Why is this? Our hypothesis is that since this is a culture in change, in transition, and since that transition affects young men more than any other population group, the stresses of that acculturation make these men at greatest risk for hypertension.

Some of the evidence of cultural change or acculturation has to do with being overweight and the use of alcohol. Data pointed to the fact that overweight men more often presented with hypertension than normal weight men. This also was found to be true in the women studied, although the percentages were much less.

We also simply asked men and women if they used alcohol at all. There was no attempt to try to quantitate the responses, we simply asked for a yes or no answer. Survey findings indicate that among men who said they did use alcohol, 30 percent were hypertensive; of those who said they did not use it, 17 percent were hypertensive. Among women, this relationship did not appear to hold.

Another kind of study is a retrospective study, where we say: Hypertensives are diagnosed at the hospital. How are they being treated? Is their hypertension being controlled appropriately?

We did such a study at Tuba City Hospital, where we looked at the charts of 147 hypertensives. That was a systematic, one-third sample of all the hypertensives who had been diagnosed in a 5-year period at Tuba City Hospital. We set the criteria that we wanted their final diastolic blood pressure to be 90 mmHg or less. We then went through their charts to ascertain whether or not this had occurred.

Of the 147 persons involved in the survey, 36 were Hopi and 111 were Navajo. Tuba City serves both population groups. Sixty-eight percent of the hypertensives who were under treatment at Tuba City Hospital were considered under control. Sixty-eight percent may not sound like a very good percentage, but it is significant in comparison to other studies conducted at that point. In a study

we did in Pittsburgh among urban blacks, only 37 percent were under control. In some other studies, similarly low percentages of those examined were under control. Therefore, the Navajo and Hopi hypertensives were as well controlled at that point as any other population group. That is an example of a retrospective study.

Finally, I would like to give an example of the planning kind of study in which our students can help. This was done at two places, Tuba City and Crown Point service units. By auditing the charts of hypertensives at these two hospitals and copying pertinent information on to cards for use by pharmacists, our students were able to assist the pharmacists and the medical staff in setting up a hypertension clinic approach. The important thing here is that this is an example of a program that has been ongoing for 14 years and has very low expenses. Yet the program is productive in terms of basic knowledge. Many of these studies have been published in the world literature. In addition, from a practical point of view, this kind of knowledge has provided feedback to the service units, to the Navajo and Hopi people; and has allowed them to plan, modify, and evaluate their programs. Consequently, it has been an excellent learning experience for at least 138 University of Pittsburgh medical students.

Jack Putnam, M.D., Seattle Indian Health Board, Seattle, Washington

In this shift of urban research, I will take a very different approach than the two previous speakers, because if I were to talk about urban Indian research, I could sit down now. Published data on urban Indian research are essentially zero.

When I first started to plan my presentation for this session, I was going to talk about what has been done in urban Indian research. So I ran a Medline, which is a computer system that lists

everything that has been published about whatever information you put into it. I put in Indian and urban and Native American. Usually, when you get your sheet back it contains so many citations that you have a problem sorting out the contents. From my inquiry, Medline provided a sheet with eight articles on it.

So I will try to stimulate some thought about problems to be dealt with in trying to set up any research program, especially an urban program. Many of the problems that have been alluded to are magnified in the urban environment.

Since recent literature on urban Native American populations is essentially nonexistent, it is a great opportunity for anyone who might wish to become involved. Of the scant information that is published, most document the use and misuse of alcohol. I will not address these articles any further, except to note that the poorly understood dynamics of Native American drinking patterns strongly impact on other areas of health care.

A small amount of published material is available, which relates to the native populations of other countries in tribal versus urban environments. There also are a few studies, both published and unpublished, which address nonalcohol-related problems of the urban Native American. These will be mentioned later in the discussion.

As already mentioned, there is an extensive need for documentary data-base-type information, both on urban and rural Native Americans. This must be obtained before one can begin to investigate an explanation for the perceived health differences between these two groups, including cardiovascular diseases and peptic ulcer disease. Once such data are available, the impact of urbanization on hypertension and other Native American health problems can be investigated.

What is urbanization to a Native American? How does the Native American population deal with the social stresses generated

by opposition of different cultures and conflicting value systems? How do they cope with the economic problems of an urban environment and the red tape of an Anglo-developed social assistance system? What problems arise as a result of changes in dietary habits and activity levels in an urban environment? Are the stresses in meeting time schedules of urban jobs relevant?

As a result of these economic, cultural, and social conflicts, barriers have arisen to adequate health care delivery within the urban environment. Patients seek a late curative phase of medical care, rather than using a health care delivery system for its preventative phases. Why does this happen?

The urban medical delivery systems are poorly responsive to urban Indian needs. For economic reasons, many of these patients use public clinics, which have long waits and brief visits, with different practitioners each visit. There is no cultural awareness in the delivery system, which often results in even more impersonal interaction. In addition to upsetting a patient with the form of service, the therapy itself may conflict with Native American values and thereby be unacceptable.

For those urban patients who can afford to seek health care in the private sector, most of these problems still apply. Much work is needed to identify and then eliminate these barriers to health care delivery. A partial answer has come from the development of urban Indian clinics. Identifying the many changes and conflicts which result from living in an urban environment and determining their relevance to the development of chronic diseases is equally challenging. There are significant methodological problems in urban research, many of which make data comparison extremely difficult.

Who is a Native American? Urban Indian clinics generally do not require that documentation be provided that one is a Native American in order to be seen in the clinic. Is a specific blood

quantum significant for a given disease? Most reservation Indians know their blood quantum, since it is required for the tribal rolls. Many urban Indians do not. Does being a Native American confer protection from certain diseases, as suggested by some data for cardiovascular diseases? If so, how long must one be in an urban environment before the environment will dominate over hereditary factors? What effects are there on individuals who spend part of their time on the reservation and part of their time in an urban environment? Does it matter if one travels back and forth? How about if one travels back and forth frequently, or if one migrates from a distant reservation site to an urban environment in a totally different part of the country? Obviously, these questions are all unanswered and create enormous problems for data interpretation in an urban environment.

Is a discrepancy in data from an urban and reservation site a result of urbanization or one of many other factors? Much of the hypertension data that do exist can be questioned. Some of it is completely confusing.

In an unpublished study at the Seattle Indian Health Board, there appears to be a markedly higher prevalence of hypertension in the Seattle urban Native American population than in most studies of reservation populations. But this data may be challenged with many of the questions that I have already raised, that is, have we even measured what we want to measure? In conflict with the Seattle data, a 1962 study found that urban Jamaicans had lower blood pressures than the rural Jamaicans.

The hypertension data base for Anglos and blacks in this country was derived about 1960 from the U.S. Public Health Service Examination Survey. Even without the previously discussed methodological factors, there are problems interpreting these data. The Health Examination Survey data supported a premise that population density has an effect on blood pressure. Minimal differences were

noted in the prevalence of hypertension among all people on the basis of population density. But for black males, rates were higher than expected in rural areas and lower than expected in urban areas. An explanation was lacking. Certainly, based on other data as well as what all of us subjectively feel, the opposite might have been anticipated.

In 1970, a study was done on the prevalence of hypertension in reservation and urban Navajo. It did show a higher prevalence of hypertension in the urban population; and also demonstrated an increase in blood pressure as individual Navajo people moved from a reservation environment into the city. The author of the study felt that most of the identifiable factors were excluded as a cause of increased blood pressure, except for the stress of the urban environment. The work that Dr. Coulehan just discussed also supports that premise.

A study by Schaffer revealed higher blood pressures for Samburu warriors in the Kenyan army than for their tribal counterparts. This elevation increased with lengths of service. Was this caused by different stress levels imposed by the regimentation of being in the military? Schaffer attributed the blood pressure elevation to a change in diet, not to stress.

In 1978, Johnson did a study on the physical growth and development of urban Native American populations. Compared to children of European descent, greater weight for height is characteristic of most groups of Native American children. A comparison of urban Minneapolis and rural reservation children showed urban children to be significantly larger in both height and weight from ages 6 through 12. But the difference was greater in body weight, such that body weight-height indices were greater in the urban sample. Excess weight was determined to be adipose tissue, based on skinfold measures.

Given this baseline tendency among Native Americans for greater weight for height than European populations, then the changes in dietary practices of urbanization itself may well result in an even higher incidence of obesity in the urban populations. Obesity itself is certainly a major health problem for the urban Native American. But we also know that there is a positive correlation between body mass and blood pressure. Does this explain urban Native American hypertension?

The biggest challenges will come once the data are available for the urban Native American population. Do these urban people really have different diseases than their reservation kin? If so, why? What are the characteristics of urbanization that cause changes in the spectrum of diseases from that observed in rural Native Americans? Why do urban Native Americans apparently have more cardiovascular disease, more peptic ulcer disease, more obesity, more alcoholism? Does this just represent an acceleration of what we are yet to see on the reservations as they become urbanized?

Will all these questions remain unanswered? Their solutions will be invaluable for improving the health care of the Native American population and ultimately of the human species.

Ross Swimmer, Tribal Chairman, Cherokee Nation Complex, Tahlequah, Oklahoma

I have enjoyed the presentations by the doctors. It is important that we have an understanding of what research has meant to the Indian people, especially in the areas of hypertension and diabetes.

We generally attribute most of the problems of the American Indian to alcoholism. I am convinced that if we could persuade them

to stop drinking, they would not suffer from such things as hypertension, diabetes, and obesity. Unfortunately, we find that that is not going to happen; research is the only way we will find out about these things. And it is unfortunate that very little research has been done in the urban area.

The Cherokee Nation is a microcosm of the American Indian. We are both urban and nonurban; we are reservation and we are nonreservation. We are two tribes, but we are one tribe. The European settlers had quite an impact on us as early as 400 years ago. In some cases, we have been estranged from the American way of life for the last 200 years. So you have a little bit of everything when you talk to Cherokees.

I frequently am at a loss to present an effective program on the Native American. Quite frequently I complain to Congress that part of the problem we face today is the lumping together of the Native American in America. It cannot be done. As we have heard, studies already done have found different problems with different Indian tribes. These problems are not necessarily the result of tribal affiliation. It may be that; it may be inheritance; it may be, in fact, that the lifestyle, as mentioned earlier, is a critical cause of an increase or decrease of hypertension, diabetes, or other major illnesses.

But what we do know is that Indians are very different from one another and that their lifestyle, their habitat, and their history are all markedly different from the East Coast to the West Coast and in between.

Some of us, however, as a result of various removal policies during the 1800's, have come together in areas such as Oklahoma, which has a tremendous number of Indian tribes although these Indian tribes are not necessarily natives of this area. In fact, I believe only one tribe, the Osage, are actually native to this particular area. Other tribes may have passed through at various times and were later located here.

We may find in our research that these Indians in Oklahoma vary from tribe to tribe because of certain ancestral considerations, inherited or cultural. Even if we studied the Oklahoma Indian, we might find great differences among Oklahoma Indian tribes.

Therefore, we have to expand our research to consider contemporary problems of the Indian, as well as their ancestral and historical problems. Many of the tribes all over the United States have been relocated from various areas of the country within the past 200 years, and some are still being relocated today. Consequently, the important thing is where we are today in Indian health care and what can be done from a tribal point of view.

I think it is very important that we recognize the need for a strong relationship between Indian tribes and Indian tribal Government and Government-sponsored, Government-supported organizations, such as the Indian Health Service. We feel very strongly about this in Eastern Oklahoma. We feel that certainly the advances that have been made in the health care field of Eastern Oklahoma have been a direct result of the working relationship between the tribes and the Indian Health Service. This is not always true. It is certainly not true of such organizations as the Bureau of Indian Affairs, which has always had an aloof attitude, of not wanting to interact, but rather be the protector and trustee, the guardian of the Indian subjects over which they govern.

The tribes today, and you people in this room, offer a unique resource to the Indian Health Service. Some of you are community health representatives, some of you are health administrators, some are medical doctors. The Indian tribes today must complement whatever resources they have, especially in terms of dollars and cents and human resources. In fact, within the Cherokee Nation, with the number of CHRs we have, we have the opportunity to do much of the research that is necessary for Indian Health Service projects.

One of our goals as a tribe was to bring the medical universities in Oklahoma into the Indian Health Care Service through such programs as internships. We have been able to bring medical students into the IHS by working with the facility in Tahlequah. This has been done throughout the state.

The Cherokee Nation, for instance, operates a licensed practical nursing school. About 18 nurses graduate each term from that school. Nearly every one of these graduates goes into the Indian Health Service or Indian Health Care Service, either as a private employee or directly to the Indian Health Service. We have found that by utilizing our resources and the dollars that we receive as a tribe, we are able to make much greater use of these resources than would ordinarily be the case.

When you talk to your tribal governments and tribal leaders when you return home, it is essential that you emphasize the need for a working relationship. This means much more than simply a contract. We can contract, we can take over Indian Health Care programs, but unless those programs are being operated properly, nobody benefits. What is most needed in the Indian Health Care programs today is greater efficiency. That is basically what we are striving for as a tribe.

Therefore, I was very impressed to hear about the University of Pittsburgh and what they are doing in this field. I would welcome them to come and work among the Cherokees at their earliest opportunity. We feel that this kind of help is invaluable. Often the help that is most rewarding is the least expensive. We learned long ago that we cannot buy our way to good health care. It is simply impossible.

We have some tremendous needs among the Indian population. Those needs are going to be solved by using the resources that we have available to us in the best possible way, and by getting the kind of help that was mentioned, such as through the University of

Pittsburgh. We are now approaching the Kettering Foundation and other organizations that are willing to do research in our area and to help us in various ways.

I have found that the Indian people are generally very receptive to this; they do not consider themselves to be guinea pigs. We generally find that the Indian people are interested in better health care. With a little bit of understanding and continued research, I think we can achieve that time in our history when we can have a level of help that is at least not below the standard available to the rest of American society. That is what we are achieving. We, as tribal leaders, understand that it is not going to be possible to cure hypertension or diabetes. We know that it is impossible to cure every disease known to the Indian.

But it is possible and we should all work to reduce the level of those kinds of problems to at least a norm. In this way, the research that is done thoughout the general population can be helpful to the Indian people as these other major illnesses are discussed in the non-Indian population.

Certainly, as a tribal leader, I have that goal within the Cherokee Nation, and I think that is pretty much the goal among all Indian leaders throughout the United States.

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