

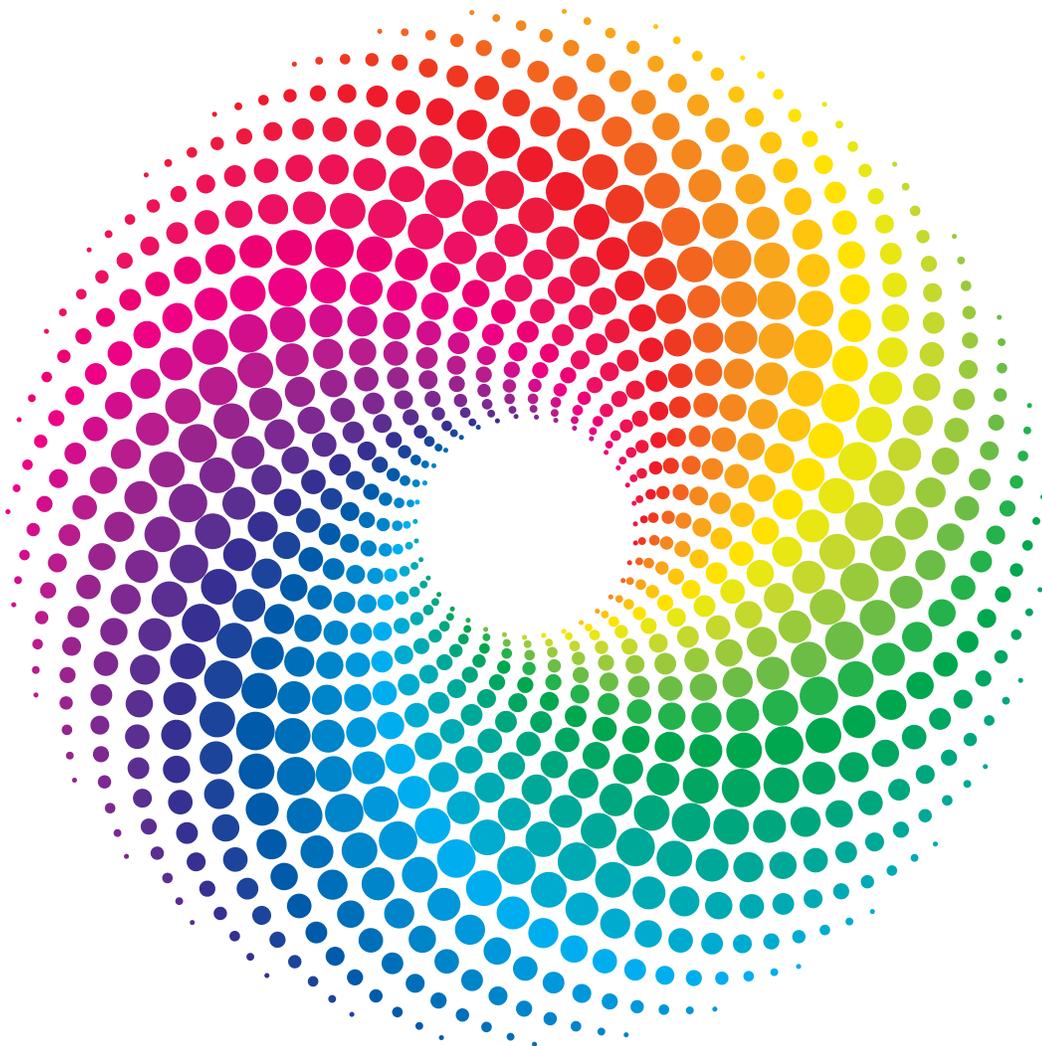
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# American Indian Diabetes Prevention Center: Challenges of a Health Equity Quest

J. Neil Henderson, PhD

L. D. Carson, PhD, MPH, BSN

*College of Public Health, University of Oklahoma Health Sciences Center  
American Indian Prevention Center, Oklahoma City*

American Indians are classified by the federal government as a “health disparities population” with significant excess morbidity and mortality caused by diabetes and its many complications. The National Institute on Minority Health and Health Disparities of the National Institutes of Health has created a national program titled “Centers of Excellence” whose primary goal is the elimination of health disparities. This article describes the American Indian Diabetes Prevention Center at the University of Oklahoma Health Sciences Center, College of Public Health, in terms of its intellectual foundations rooted in a biocultural analytic model and operationalized by an interdisciplinary functioning staff. Challenges are described in terms of the monumental task of impacting health disparity conditions and in the exigencies of research collaborations with American Indian Nations located in rural areas remote to the University’s health sciences urban-based hub.

**Keywords:** health disparity; American Indian; diabetes; interdisciplinary

The Oklahoma Center for American Indian Diabetes Health Disparities locally known as the American Indian Diabetes Prevention Center (AIDPC) at the University of Oklahoma Health Sciences Center, College of Public Health has its focus on the amelioration of health disparities for American Indian people with diabetes. American Indians (AIs) are a health disparity population with significant excess morbidity and mortality caused by diabetes and its many complications.

The AIDPC takes as its operational philosophy that

1. All people are inherently valuable.
2. Excess morbidity, mortality, and community disruption are unacceptable.
3. Cultural diversity is a positive force.
4. Health disparity solutions will be collaborative, interdisciplinary, and bioculturally oriented.

Funding for the AIDPC comes from National Institute on Minority Health and Health Disparities of the National Institutes of Health. Specifically, the AIDPC is one of a set of nationally distributed Centers of Excellence whose primary goal is the limitation of health disparities. The AIDPC has been funded since 2007 and has ongoing funding until 2017. Variable health status across the population segments of the United States has long been known. The AIDPC reflects congressional recognition of the problem and a funding stream to specifically address the issue. The task is enormous, and to completely eradicate health disparities across all population segments and replace that with health equity is too improbable as a goal. However, there is much that can be accomplished that would move the United States in the direction of vastly improved health equity.

Cultural losses in the lives and communities of AIs are of equal importance to the physical and mental morbidities caused by diabetes. Furthermore, populations suffer higher rates of disease and death than normally expected based on prevalence comparisons with the majority population. These higher rates of disease and death are known epidemiologically as excess morbidity and mortality. However, when they occur in a health disparity population, there are multiple individual and community costs for which common epidemiologic accounting is silent. For example, chronic sickness, amputations, organ failures, and functional impairment at excessive rates are not only physically disruptive but are also demoralizing to the spirit and dignity of individuals and communities. The result is personal depression, loss of community coherence,

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acceptance of disease as normal, feeling inherently substandard, and interference with community vitality. This is particularly damaging in communities that are small and already marginalized by many. Losing one's dignity is just possibly more debilitating than losing one's leg.

### YOUNGER GENERATION FOCUS

The AIDPC directs the research projects toward questions relevant to younger generations: infants to 18 years of age, adolescents 11–17 years of age, pregnant women who mostly are in their teens and 20s. The younger age cohort is targeted from a life span perspective so that earlier preventive actions can start and improve adult health. The younger age cohort will also serve as a model for others to observe that preventive measures can be taken. Peers and others will see that young people can take action that promotes their immediate and long-term health. Youth can also influence their parents and even older generations by their actions. The intergenerational approach also serves to create and reinforce bonds among family members that can foster empathy within the households. This promotes healthy behavior and reduces parental stress as cooperation builds.

### BIOCULTURAL MODEL

Rather than one hegemonic theoretical model providing the intellectual foundations of the AIDPC, the wide range of disciplines and their health models used in the Center's research program come together to address health disparities from a "biocultural" framework. *Biocultural* here means that the AIDPC attack on diabetes health disparities among AI people is one that is multi-pronged and includes biological, clinical, behavioral, social, and cultural aspects of health and disease as interconnected parts of the life experience (McElroy, 1990; Mendenhall, 2012; Singer, 2009; Worthman & Kohrt, 2005).

A biocultural approach is essential to preventing diabetes among non-majority populations because culture affects the way in which individuals interpret health and disease as well as how they cope with and treat those diseases (Singer, 2009). For example, when a disease such as diabetes is highly prevalent in a population, it may be internalized and accepted as being normal. Help seeking and treatment may be avoided because of beliefs that it is simply the nature of life in that particular population.

*Biocultural* is similar to the oft-used term *biopsychosocial* (Engle, 1977) or *social ecology* (Coreil, Bryant, & Henderson, 2001) but is different in its significant attention to the cultural component of life dynamics (Singer, 2009). The biopsychosocial undervalues the importance of issues such as language barriers, authority variance, barriers created by the use of professional/medical terminology, barriers created by levels of education between patients and providers, and most importantly, life experience. Because the AIDPC is partnered with AI tribal members with language differences and

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numerous other cultural differences compared to the majority population, giving the "cultural" aspect of life significant attention is considered appropriate. AI individuals may interpret disease very differently from most other cultural groups. Failure to consider their perspective and experience of disease will continue to lead to failure in curbing diabetes in these populations.

### MULTIDISCIPLINARY STAFFING

The AIDPC is a wide, multidisciplinary, cross-college organization designed to harvest a significant range of scientific paradigms, special areas of expertise, and research multimethod all focused on the amelioration of diabetes health disparities among people. To impact diabetes in health disparities populations, there is the necessity of having expert and diverse research perspectives that can be integrated into a synergistic enterprise that has impact beyond its single parts. Operationalizing the biocultural strategy requires the harnessing of the intellectual bank of experts named herein from the colleges and departments where the greatest depth of expertise and research on diabetes at this campus is found (see Table 1). Putting the disease and its treatments within a framework that individuals can understand, identify with, and internalize is the only way this disease will be eradicated from the AI world. Most diabetes research to date focuses solely on selected factors of the disease, the endocrinology, physical activity, or nutritional aspect. However, these approaches alone have not been highly successful in preventing the disease. They are important and have led to a biological understanding of the disease, but they have really done little to decrease the disease burden in these AI populations. In fact, the rates are climbing and will continue to do so until a holistic and collaborative framework is used.

### INTERDISCIPLINARY ACTION

Because interdisciplinary health disparities research, education, and community engagement will not spontaneously occur, the AIDPC will conduct monthly seminars to facilitate interdisciplinary values

**TABLE 1. Discipline Breakdown of American Indian Diabetes Prevention Center Contributors From Oklahoma University Health Sciences Center**

College	Department	Discipline	
Public Health	Health Promotion Sciences	Medical anthropology	
		Health promotion	
		Cultural anthropology	
		Life span studies/gerontology	
		Health policy and administration	
		Diabetes education	
		Psychological anthropology	
		Biostatistics & Epidemiology	Epidemiology
			Biostatistics
		Medicine	Internal Medicine
Pediatric endocrinology			
Endocrinology	Adult endocrinology		
	Pediatrics		
Pediatrics	Pediatrics		
Nursing	Family Medicine	Exercise physiology	
		Family medicine	
	Psychiatric & Cross-Cultural Nursing	Psychiatric nursing	
		Certified diabetes education	

and scientific work. Understanding the interdisciplinary nature of diabetes research will result in more “holistic” approaches to treating and preventing the disease and provide researchers with a better cultural context into the causes, treatments, and prevention strategies that can reduce disparities.

The interdisciplinary values seminar is conducted monthly as part of the regular executive meeting. This meeting has the following characteristics: box lunch and AIDPC business, ranging from troubleshooting and problem solving to updating of project activities. These items take about 30–45 min because lunch is concurrent with the business meeting. The remaining 30–45 min is given to an expert in organizational culture in the health sciences for an ongoing seminar on issues of interdisciplinary team work. This expert uses multiple approaches, including the discussion of psychobehavioral scientific research literature on the topic and the Balint-type approach in which participants are allowed to be critical of all aspects of the work environment, to divulge problems with interdisciplinary experiences, to be self-critical about their own efforts, and to learn to value the intellectual and practice foundations of other disciplines so that barriers to interdisciplinary thinking and work are reduced. Through these foundational practice and intellectual prisms, AI diabetes health disparities can be more comprehensively engaged through exploratory research attacking several interconnected problems.

Using a complex biocultural model to address diabetes in the context of AI life requires a team with in-depth expertise that can communicate across disciplines. Multidisciplinary teams are very common and easy to assemble. However, interdisciplinary teams require specific efforts to truly function across disciplines. The American educational system in the health sciences reflects the compartmentalization of knowledge in its organizational scheme as shown directly by named colleges and named disciplines within each of those colleges. Without a specific effort to convert multidisciplinary teams into interdisciplinary teams, there will be no progress made in terms of capturing the synergism that is potentially available.

After 18 months of this format, there has very clearly been a rapid shift from a group of professionals, many of whom did not know each other, to a group of friends and colleagues. The expert has even commented about the fact that the meetings now begin with informal accumulation of staff in the meeting room in which there are many observations of greetings that include hugs, conversation about non-center-related activities, and even in queries about family members of the AIDPC staff.

AIDPC also has an in-house newsletter titled *Connections*. *Connections* is much less a newsletter and much more a forum with which staff members can talk about themselves and their non-center-related activities. Staff members are asked to submit

short “blurbs” that are informal and “folksy.” In addition, there are pictures of staff members regularly in *Connections*. The interdisciplinary expert also submits poetry of his own that has been previously published or may be original for *Connections*. The intent of *Connections* is to further humanize the researchers to each other so that their professional capacity is preserved but some of their personal lives are integrated into the AIDPC project.

The success of the interdisciplinary seminar is one that will not be based on quantitative markers or assessment instruments. As noted, there has been a rapid conversion from a room full of stranger-professionals being quite formal in their demeanor into a room of professional-friends much more relaxed with each other. However, the literature on interdisciplinary teamwork in the health sciences usually examines the degree to which members of the team developed some significant knowledge base about the other disciplines represented by other staff. This does not seem to be happening using the approach described earlier. If the AIDPC method is not classically “interdisciplinary,” it still seems to result in a special brand of “inter-friendliarian” benefit that, we believe, functions to produce an organizational outcome that is more synergistic than in the absence of any effort to coalesce the group.

### CULTURAL EXPERTISE

AI researchers doing research with AIs will have greater credibility, cultural insight, and success with recruitment and retention than would an exclusively non-AI team. As Dr. Elias Zerhouni, (NIH Director, 2002–2008) stated, “Dispatching men and women to study their own cultures strengthens the ‘spiritual and emotional connection,’ . . . between scientists and their often-isolated subjects . . . . There are intangible cultural factors that can only be crossed by members of the same community” (Drexler, 2005). The AIDPC principal investigator is an AI (J. Neil Henderson, Oklahoma Choctaw) who provides not only research expertise but personal insight into the experience of contemporary AI life that can be crucial to tribal communications, understanding and responding to research issues related to subject recruitment, subject attrition and regain, cultural contexts of health and disease, tribal

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*American Indian and Alaska Native people with diabetes are four times more likely than their White counterparts to experience an amputation as a consequence of diabetes.*

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**TABLE 2. Primary American Indian Diabetes Prevention Center (AIDPC) Aims**

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1. Collaborate with AI tribes in the conduct of research on diabetes with special attention to communications, cultural values, and balanced reciprocity in the ongoing interactions between the AIDPC and the members of AI nations.
  2. Conduct multidisciplinary research on diabetes in AI populations with the purpose of ameliorating and eliminating the current unacceptable health disparity gap.
  3. Increase the potency of the impact of the research by coalescing the multidisciplinary expertise of the Center’s research staff into an effective interdisciplinary team aimed at the common goal of AI diabetes health disparities amelioration.
  4. Conduct monthly seminars coincident with the executive committees on the ways to convert multidisciplinary scientific work into a single, interdisciplinary enterprise.
  5. Provide constant communications with tribes regarding the progress made by the AIDPC with efforts toward the most rapid possible translation of research findings into real-life, obvious benefits to the AI people.
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institutional review board (IRB) processes, and compassion for AI feelings about being research subjects.

In addition, there are leadership positions in the AIDPC from the following tribes: Oklahoma Choctaw, Wichita/Creek, Caddo, Chickasaw/Choctaw, Navaho, and Oklahoma Cherokee. Each person from the stated tribes is involved in conducting research, leading Cores, and/or both.

### AMERICAN INDIAN DIABETES PREVENTION CENTER AIMS

The AIDPC has as its focus on Type 1 (T1D), Type 2 (T2D), and gestational diabetes in AI populations, with an emphasis on families and youth. There is an emphasis on prevention and/or amelioration of risk factors for diabetes in youth to include facilitation of healthy behaviors (increasing activity levels, improving dietary intake, and decreasing obesity rates). Regarding families, assessment of parental distress in caring for youth with diabetes identifies facilitators and barriers to diabetes care and communicates findings to tribal behavioral health providers (Table 2).

### ORGANIZATIONAL FORMAT

Funding for the AIDPC specified four core action categories around which the activities of the AIDPC are organized: Administration, Research, Research Training and Education, and Community Engagement (Table 3). (Note: Administrative core functions

**TABLE 3. American Indian Diabetes Prevention Center Projects by Title and Main Discipline**

Core	Project Title	PI/Project Leader	PI Discipline
Research	Parental/Caregiver Distress among Oklahoma Choctaws Coping with Dependents Diagnosed with T1D and T2D	J. Neil Henderson, PhD L. D. Carson, PhD, RN, MPH	Medical anthropology Epidemiology; cross-cultural health; nursing
	Incentivizing Behavior: Promoting More Physical Activity in American Indian Youth	Kevin R. Short, PhD Kenneth Copeland, MD	Physiology/health and exercise science; pediatric endocrinology
	Pre-Eclampsia: Factors Conferring Risk and Protection in Minority Women with Dysglycemia	Timothy Lyons, MD Gary Raskob, PhD	Endocrinology; public health
	American Indian Diabetes Beliefs and Practices: Potential Impacts on Maternal Care, Infant Mortality and Adherence	J. Neil Henderson, PhD L. D. Carson, PhD, RN, MPH	Medical anthropology Epidemiology; cross-cultural health; nursing
	SAILS (Starting Activity in Little Students)	June E. Eichner, PhD William E. Moore, PhD	Epidemiology
	SF-36 Medical Outcomes Survey: Validation and Cultural Adaptation in the American Indian Population with Diabetes Mellitus	Ann Chou, PhD	Health administration and policy
	Arterial Elasticity in Overweight and Normal Weight Native American Children	Andrew Gardner, PhD	Endocrinology; exercise science
	Weight-Bearing Activity: Links to Diabetic Foot Health in Native Americans	Elena Cuaderes, PhD, RN	Nursing
Research/Training	Health Disparities in Public Health Course Curriculum	L. D. Carson, PhD, RN, MPH	Epidemiology; cross-cultural health; nursing
	Stories of Parents and Children Battling Diabetes	David Baldrige, BA	Community outreach
	Community Education to Improve Participation in Health Disparities Research	Thomas Teasdale, PhD, FGSA	Life span education; geriatric medicine
	Interdisciplinary Collaboration Initiative	Howard Stein, PhD	Organizational culture; rural medicine
Community engagement	Building Youth Assets to Prevent Diabetes	Roy Oman, PhD	Health promotion
	Good Food Neighbors	Carla Guy, BA	Community outreach
	Native Youth Preventing Diabetes Camp	Dee Bigfoot, PhD Lancer Stephens, PhD	Adolescent mental health; community education
	Eagle Book Evaluations	Dee Bigfoot, PhD Lancer Stephens, PhD	Adolescent mental health; community education

*Note.* PI = principal investigator; T1D = Type 1 diabetes; T2D = Type 2 diabetes; SF-36 = Short-Form 36-item.

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*Certain life experiences make diabetes self-care more difficult with the result of worsened health status.*

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operate in the usual ways related to promoting and monitoring progress and will not be further described.)

### Research Core

As stated elsewhere, diabetes in Oklahoma AI populations has reached unacceptable levels, with a prevalence rate of approximately 14.5%. AI and Alaska Native people with diabetes are four times more likely than their White counterparts to experience an amputation as a consequence of diabetes. They are six times more likely to experience kidney failure. In Oklahoma's 37 federally recognized tribes, 24% of AI with diabetes experience diabetic retinopathy as a complication of their disease (American Diabetes Association, 2002; Roubideaux & Acton, 2001). Diabetes is a leading cause of heart attacks, strokes, amputations, blindness, kidney failure, and fetal mortality. In preventing and controlling diabetes, there is prevention and control of cardiovascular disease in susceptible persons.

Each research proposal addresses the essential theme of the problematic multiplicative effects common to biologically and socioculturally derived insults and disruptions to diabetes management among AI people. The logic train is that if common events that disrupt optimal diabetes management are eliminated or blunted by reducing their impact, improved diabetes management naturally results and leads to improved health status and ultimately, the closing of the disparity gap.

In these research projects, the common and high-frequency life disruptions that are investigated for improved health outcomes and diabetes health disparity reduction are the following:

1. Discovering the nature of parental distress in caring for youth with T1D and T2D in the context of contemporary Choctaw life
2. Incentivizing youth to physical activity
3. Differential risk of preeclampsia in pregnancy across AI, Whites, and Hispanics

These research projects are secondary prevention strategies aimed at more proximate factors to reduce diabetes health disparities. Because the illness experience of diabetes is often

reported as all-consuming and inherently difficult to balance with the exigencies of ordinary life, immediate help is needed. Consequently, the importance of secondary prevention strategies in chronic disease is that solutions and treatment can be more quickly delivered than the long-term effects of primary prevention. Moreover, certain life experiences make diabetes self-care more difficult with the result of worsened health status.

### Research Training/Education Core

The AIDPC Research Training and Education Core will oversee the main initiatives of the Center regarding health disparities research training and education in the professional sector and in the Oklahoma and New Mexico AI communities. Proposals submitted as a part of this core emphasized the interdisciplinary nature of the Center and include initiatives that involve professional, community, and individual training and education. The Research Training and Education Core consists of four distinct projects:

1. Stories of parents and children battling diabetes: Six families of children with T1D and T2D will be recruited to participate in a workshop in which they create digital stories and personalized accounts of familial diabetes experience that underscore the medical and emotional issues surrounding diabetes.
2. Community education to improve participation in health disparities research: Identify and implement educational strategies that address cultural barriers and improve individual and community participation in health disparities research, including the implementation of activities with local health care providers that promote AI participation in health disparities research.
3. Interdisciplinary collaborative initiative: On a monthly basis, AIDPC researchers and staff will participate in a workshop regarding principles and concepts of interdisciplinary collaboration.
4. Health disparities in public health course curriculum: Formulate and submit for graduate college approval course curriculum that meets the objectives of health disparities training as specified in the American Schools of Public Health (ASPH) competencies.

### Community Engagement/Outreach Core

The Community Engagement/Outreach Core is dedicated to primary and secondary prevention of diabetes with a focus on

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*Health disparity elimination is a noble and democratic intention.*

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children and adolescents of AI communities. The Community Engagement/Outreach Core involves the following project to address health disparities from diabetes: The American Indian Youth Asset Project. This project focuses on primary prevention strategies that build youth assets necessary to prevent diabetes risk behaviors. Parental involvement is an integral part of this project.

## CHALLENGES

### Health Disparity Reduction, Not Elimination

Health disparity *elimination* is a noble and democratic intention. However, as all would agree, it is a very difficult reality to even imagine, much less achieve. All those good folks nationwide, slogging along the trail in efforts to eliminate health disparities may have to take a frustrating but real look at health disparity elimination as a soteriological fantasy (cf. Henderson, 2003). *Soteria* is the condition of over-expecting an outcome that is actually impossible to attain, yet for which desperation creates an unstoppable yearn. As Gordon Deckert, former chairperson of the Department of Psychiatry at the University of Oklahoma, College of Medicine, has oft repeated, people have a hard time accepting that “the fantasy is never the fact” (G. Deckert, personal communication, February 11, 2008). Still, that is no reason to stop the quest because “no action guarantees no action.”

Root causes of health disparity are known to include intractable socioeconomic conditions such as poverty, racism, violence, economic domination, political domination, and other sources of power differentials (Farmer, Kleinman, Kim, & Basilio, 2013). However, public health approaches to these root problems have proven impotent. The “Causation Continuum” (Coreil et al., 2001) shows that health problems can have their origins at places far removed from where they tangibly manifest. Root causes of sickness are often very distal to where the “pain” is felt. For example, poverty can set the foundational conditions for many sicknesses but emanate from circumstances so deeply entrenched in the political-economic fabric as to defy amendment.

Unfortunately, the Causation Continuum also reveals that most public health efforts are aimed at causation sources nearest the disease or condition and, therefore, typically easier to address. It may be “uncomfortable knowledge” (cf. Stein, 1988) to accept that much of public health’s actions are subverted to repetitive cycles of ritualistic wound-tending with evermore soggy Band-Aids.

## SUMMARY

This project has forged ahead in its efforts to reduce health disparities. Health disparity reduction is a complex problem for which single-model solutions are insufficient. The AIDPC is grounded in the intellectual foundations of a biocultural framework. Biocultural

perspectives promote an intellectual foundation that recognizes the social ecology of sickness. Sickness is seen as an outcome of multiple, interconnected, biocultural factors. However, the biocultural perspective is much more than simple epidemiologic multiple causation. Biocultural models are characterized by strong inclusion of psychological, sociological, and anthropological elements in the social ecology web.

### Special Factors in Tribal Collaborations

The research projects of the AIDPC are done in collaboration and partnership with the Choctaw Nation of Oklahoma and the Chickasaw Nation. The fact of having collaboration with an AI tribe is preceded by communications and the building of trust. Like some other non-majority population segments in the United States, AI people have been the victims of unethical research practices. Consequently, the AI nations have appropriately responded with a series of self-protections including tribal council review of proposed research or by IRB panels modeled after the recommendations of the Belmont committee.

The AIDPC process of developing collaborations with the Choctaw and Chickasaw tribes was one preceded by earlier research projects for which successful collaborations have occurred. However, there is probably a general process to follow by which potential investigators can communicate with the proper authorities and health programs at tribes to open a dialogue regarding mutual interest in health care research. The general approach is one of mutual respect and a fully explicit concept of how the research would be intended to benefit the tribal population and with minimal negative impact.

In the case of the AIDPC, there was a preexisting history of successful collaboration. Furthermore, the principal investigator is a member of the Choctaw Nation of Oklahoma. Although this fact is not singularly responsible for the success of the collaboration, it does explain preexisting knowledge of the organization of the tribe and several of the principal elected and appointed authorities.

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*There is a good-faith approach on all members of the collaboration that there remains the good intention of being helpful and having the ultimate impact of reducing health disparities.*

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However, such pre-knowledge is not necessary to communicate research interests with tribes.

First step to communicate with a tribe for exploring health research collaboration would be to identify the director of the tribe's health program. This can be easily done by using the tribal websites and contact information found there. Next, a phone or e-mail communication can be used to begin the first discussions regarding the interest related to a health research idea. It is most appropriate for the non-Indian research group to approach tribal authorities in a respectful manner and with the sincere concept of collaboration underpinning all discussions.

These first communications described the nature of the research that could be directed toward the topic of health disparities and diabetes among the members of these two tribal nations. These topics were satisfactory to the health directors, and they were very willing to assist with the writing of letters of support to include in the grant proposal. IRB review would only occur if the grant was funded. Fortunately, the funds were granted. All aspects of the research and evaluation projects would occur within the tribal boundaries. Accordingly, tribal IRB appraisal was mandatory. All of these projects were approved, however, with some small amendments.

Part of the collaboration includes specific efforts to hire tribal members as assistants in conducting the research project on-site. Such efforts are very much appreciated by the tribe and, moreover, work very well because those people are working in a context with which they are very familiar. Tribal members hired by the grant are also included in all communications about the entire AIDPC project, attend the monthly center meetings for updates and troubleshooting, and have their names included on the authorship line of publications.

Like University-based IRBs, the tribal IRB requires an annual review process of each research project, to have an opportunity to either agree to renew the IRB permission, or to introduce modifications if such are considered necessary. Throughout the course of the research, there is a good-faith approach by all members of the collaboration that there remains the good intention of being helpful and having the ultimate impact of reducing health disparities.

The overall perspective of working with AI tribes in partnership is that the research team will need to satisfy human subjects' protections for the federal funding agency, need University-based IRB reviews, and, in addition, successfully meet to review all tribes' IRBs. One consequence of these steps is that startup dates for first data collection can be delayed for up to 1 year while the process runs its course. The time window of operating the grant does not stand, so consequently, the amount of work required to conduct research must be done within a compressed window of time.

This research is done with AI people living in rural areas away from the University. The nearest drive times are 3 hours

round-trip, and the furthest, 10 hours round-trip. As with all rural health work, there is a time factor that has to be included in the conduct of many types of research. In one portion of hour, placental tissue and cord blood is brought from the hospitals to the University health sciences center. That process is done by the hired tribal members who bring them here or, in some cases, mail them in specially designed containers to maintain temperature and security of the tissues. In other types of research including interview research field assistance hired by the Center helped with subject recruitment, scheduling, and escorting researchers to leave the University and go into the field to conduct interviews. Most of the time, this requires overnight stays and many hundreds of miles of mileage. Although these factors do have an inconvenience quotient to them, it is simply that which is required to extend benefits of health research to these populations and to those who would benefit from the outcomes.

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**Author's Note.** L. D. Carson, PhD, MPH, BSN, formerly L. Carson Henderson.

Correspondence regarding this article should be directed to J. Neil Henderson, PhD, American Indian Diabetes Prevention Center, College of Public Health, University of Oklahoma Health Sciences Center, 801 NE 13th St., Oklahoma City, OK 73104. E-mail: [neil-henderson@ouhsc.edu](mailto:neil-henderson@ouhsc.edu)