

AHRQ Research and Other Activities Relevant to American Indians and Alaska Natives

Agency for Healthcare Research and Quality

AHRQ's mission is to improve the quality, safety, efficiency, and effectiveness of health care by:

- Using evidence to improve health care.
- Improving health care outcomes through research.
- Transforming research into practice.

American Indian and Alaska Native (AI/AN) people continue to have disproportionately higher rates of illness and higher mortality rates when compared with other Americans. AI/ANs die at higher rates than other Americans from tuberculosis (500 percent higher), alcoholism (550 percent higher), diabetes (200 percent higher), unintentional injuries (150 percent higher), homicide (100 percent higher), and suicide (70 percent higher). This group is also burdened with high infant mortality rates and high rates of obesity and diabetes among children.

The Agency for Healthcare Research and Quality (AHRQ) is committed to improving the quality, safety, effectiveness, and efficiency of health care for all Americans. AHRQ provides grants to enhance the health services research knowledge base; develops tools and talent that foster the health services research infrastructure; and builds relationships with tribal and other AI/AN organizations, the Indian Health Service (IHS), and other Federal agencies to advance excellence in health care for AI/ANs.

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This program brief provides a summary, arranged by topic, of ongoing and recently completed AHRQ activities that specifically address the health of the AI/AN people.

Arthritis

Rheumatoid arthritis (RA), a major cause of disability among the general U.S. population, has a higher prevalence among some AI/AN subgroups.

- **Study examines rheumatoid arthritis quality of care in Alaska Natives**

This pilot study assessed the level of adherence to 27 quality indicators among an Alaska Native subpopulation living in the Anchorage Service Unit. The study team gathered data on patient and provider characteristics that influence quality of care and used IHS information to generate hypotheses for further investigation. Long-term goals include identifying deficiencies in arthritis care and developing quality initiatives for implementation statewide to improve care for Alaska Natives with rheumatoid arthritis. (Principal Investigator: Elizabeth Ferucci, Alaska Native Tribal Health Consortium; Grant HS15625, 9/30/05-9/29/07).

- **Quality of arthritis care for Alaska Natives varies significantly by quality measure**

This study provides an initial evaluation of quality of care for RA in an Alaska Native population receiving care in an integrated health care system. The researchers assessed the providers' level of adherence to eight quality-of-care indicators among 106 Alaska Natives living in the Anchorage Service Unit. The highest performance scores were for folic acid prescription while on methotrexate (93.6 percent) and disease-modifying antirheumatic drug prescription (90.6 percent). The areas in need of greatest improvement were

related to radiographs of both hands and feet and laboratory measures to monitor RA. Having at least one visit to a rheumatologist increased the likelihood of high performance on many, but not all, quality indicators. Ferucci ED, Donnithorne KJ, Koller KR, et al. Performance on rheumatoid arthritis quality indicators in an Alaska Native healthcare system. *Qual Saf Health Care*. 2010 Jul 23. [Epub ahead of print]. (Grant HS15625).

Asthma

Asthma is a chronic lung disease that affects 14 to 15 million people in the United States. People with asthma have almost half a million hospitalizations annually, and 5,000 die each year of the disease. When only race is considered, AI/ANs and blacks have a 25 percent higher prevalence than whites.

- **Asthma education conference held for tribal health officers**

The main goal of this 2006 regional conference on asthma education was to inform Northern Plains tribal health agencies about the current state of knowledge, research, and treatment of asthma, its potential environmental health triggers, prevention strategies, and environmental improvement measures. Topics covered included exposures to everyday types of indoor and outdoor contaminants, such as environmental tobacco smoke, allergens, endotoxins, molds, insects, dust mites, pesticides, formaldehyde, exhaust from wood-burning stoves, motor vehicle exhaust, and other biological and chemical contaminants. Conference participants included tribal health representatives and directors, IHS staff, emergency medical workers, nurses, and pediatricians working with 18 tribes in a four-State region served by the Northern Plains Tribal Epidemiology Center. (Principal Investigator: David Osterberg, University of Iowa; Grant

HS16435, 6/01/06-5/31/07).

Cardiovascular Disease

Although mortality rates from cardiovascular disease (CVD) in the United States continue to decrease, CVD is the leading cause of death in American Indians beginning at age 45, compared with age 65 for the general U.S. population. AI/ANs are 1.2 times as likely as white adults to have heart disease, 1.6 times as likely to be obese, and 1.3 times as likely to have high blood pressure.

- **Risk factors for developing cardiovascular disease increase as older American Indians age**

As older American Indians age, more of them than the general population develop hypertension, diabetes, and low levels of high-density lipoprotein cholesterol (HDL-C), all risk factors for developing CVD, according to this study. Researchers examined the development of major CVD risk factors among a rural group of 4,549 American Indians aged 45 to 74 during initial examination from 1989 to 1991 and 8 years later. This aging group had decreased prevalence of smoking and no consistent changes in adverse HDL-C and low-density lipoprotein-cholesterol profiles. However, the group had substantial increases in the prevalence of hypertension and diabetes, two of the most important CVD risk factors. Rhoades DA, Welty TK, Wang W, et al. Aging and the prevalence of CVD risk factors in older American Indians: The strong heart study. *J Am Geriatric Society*. 2007 Jan; 55:87-94. (Grant HS10854).

- **Posttraumatic stress disorder linked to cardiovascular disease**

Researchers interviewed 1,414 Northern Plains American Indians aged 18–57 years to examine the association with lifetime posttraumatic stress disorder

(PTSD) and lifetime major depression on CVD among Northern Plains American Indians. Fifteen percent of respondents had PTSD, and 8 percent had major depression. CVD was more commonly reported by participants with PTSD than by those without PTSD (12 percent vs. 5 percent). More participants with major depression reported having CVD than their nondepressed counterparts (14 percent vs. 6 percent). The authors suggest rising CVD rates in this population may be better understood if PTSD is considered along with other traditional risk factors. Sawchuk CN, Roy-Byrne P, Goldberg J, et al. The relationship between post-traumatic stress disorder, depression, and CVD in an American Indian tribe. *Psychol Med*. 2005 Dec; 35(12):1785-94. (Grant HS10854).

- **Cardiovascular disease death rates higher among AI/ANs than other U.S. groups**

National vital events data published by the IHS prior to the early 1990s suggested that CVD mortality rates (for example, for heart attack and stroke) were lower for AI/ANs than the U.S. general population. Given that American Indians have for years had some of the Nation's highest rates of major CVD risk factors, such as smoking, diabetes, and obesity, the author adjusted for racial misclassification in the IHS data and concluded the opposite. She found that AI/ANs have higher CVD mortality rates than the rest of the U.S. population, and these rates may have been higher for more than a decade. Further, CVD mortality is increasing among AI/ANs but decreasing in the general population, widening a previously unrecognized disparity. After adjusting for age and racial misclassification, by 1996-1998 the number of CVD deaths per 100,000

among AI/ANs was 195.9 compared with 166.1 and 159.1 for all races and whites, respectively. The most striking and widening disparities were found for middle-aged AI/ANs; CVD mortality among elderly AI/ANs was lower than in the other groups. Rhoades DA. Racial misclassification and disparities in CVD among American Indians and Alaska Natives. *Circulation*. 2005 Mar 15; 111:1250-6. (Grant HS10854).

Children's Health

AI/AN children face serious health issues. AI/AN infants die at a rate of 8.3 per every 1,000 live births, compared with 6.7 per 1,000 for the entire U.S. population (2006 rate). The prevalence of overweight and obesity among AI/AN children has grown dramatically in the last 30 years, and type 2 diabetes is increasingly prevalent. On a positive note, as of 2008, the immunization rate for AI/AN children is similar to that for non-Hispanic whites.

- **International meeting held on indigenous child health**

This collaborative conference, held in Montreal on April 20-22, 2007, focused on innovative clinical care models and community-based public health approaches for children and youth in First Nations, Inuit, Metis, American Indian, and Alaska Native communities. The conference was planned and jointly sponsored by a number of U.S. and Canadian organizations and agencies. While the health care systems in the U.S. and Canada differ, there are many similarities in terms of providing culturally effective care to indigenous children and youth. This conference brought exposure to successful models of care and unique research implemented at the community level, and offered opportunities for providers to gain valuable skills in areas of health disparities among indigenous children.

Additional information is available at www.aap.org/nach/2InternationalMeeting.htm. (Principal Investigator: Sunnah Kim, American Academy of Pediatrics; Grant HS16753, 12/01/06-11/30/07).

Diabetes

AI/ANs have the highest rates of type 2 diabetes in the United States. Diabetes is traditionally a disease of older people, but diabetes is being diagnosed at young ages in American Indian communities. American Indian youths (15-19 years old) have the highest prevalence (4.5 per 1,000) of type 2 diabetes among all ethnic groups. Of AI/ANs aged 18 years and older, about 17.2 percent have diabetes. Diabetes is least common among Alaska Natives (8.1 percent) and most common among American Indians in the southern U.S. and southern Arizona (26.7 percent and 27.6 percent respectively). The Pima Indians of Arizona have one of the highest diabetes rates in the world.

- **More comprehensive diabetes education programs are linked to better diabetes care**

Researchers found that few diabetes education programs for AI/ANs met national standards in 2001. They also found that more comprehensive programs were associated with better quality diabetes care. All 88 IHS-funded diabetes care programs in 2001 completed a checklist of criteria from the IHS Integrated Diabetes Education Recognition Program (IDERP) on how well programs implemented each of the 10 national standards for diabetes self-management education. Programs were then categorized as Level 1 (developmental), Level 2 (educational), or Level 3 (integrated). Patients receiving care from Level 2 and Level 3 programs had higher completion rates of all 15 diabetes quality-of-care indicators compared with those in programs at or below Level 1. Yet, only

9 of the 86 programs had fulfilled enough criteria to qualify for at least Level 2 IDERP recognition. The remaining 77 programs qualified at Level 1 or less. Programs were often understaffed and unable to complete the extensive documentation process required by the IDERP, according to the authors. Since the study, with additional IHS funding toward staff and training, the number of IDERP-recognized programs grew to 37 in 2009. Roubideaux Y, Noonan C, Goldberg JH, et al. Relation between the level of American Indian and Alaska Native diabetes education program services and quality-of-care indicators. *Am J of Pub Health*. 2008 Nov; 98(11):2079-84. (Grant HS10854).

- **Robeson County Primary Care Research Network studies prevalence of diabetes in local American Indians**

This project brings together 54 providers, 21 of which are American Indian, with the goal of creating a research network of primary care providers who largely serve American Indian patients in Robeson County, North Carolina, a rural county that is home to most of the State's more than 50,000 members of the Lumbee Tribe. In addition to creating the network of primary care practices where disease- and tribe-specific data can be collected, researchers will estimate diabetes prevalence in adults and children as well as collect pilot data on the care processes for diabetes. The creation of the network, measurement of diabetes prevalence, and results of the pilot study will be used to direct further work for improving the identification and care for diabetes in the community. (Principal Investigator: Bonnie Yankaskas, University of North Carolina at Chapel Hill; Grant HS15989, 8/01/06-7/31/08).

- **AI/AN patients in urban areas more likely than rural patients to receive diabetes education**

The authors of this study reviewed medical record data as part of the IHS Diabetes Care and Outcomes Audit in 2002. They compared Indian health facilities' adherence to diabetes care guidelines when treating all 710 AI/AN patients with diabetes at 17 urban Indian health clinics and a random sample of 1,420 AI/AN patients from 225 rural Indian health facilities. Urban patients were more likely than rural patients to have received formal diabetes education in the past 12 months (76 vs. 62 percent). After adjusting for other factors affecting outcomes, blood-glucose levels, blood pressure, and cholesterol levels were similar for urban and rural patients. Overall, rates of adherence to nationally recommended care guidelines for AI/AN health programs were comparable to or surpassed rates described for the general population. Moore K, Roubideaux Y, Noonan C, et al. Measuring the quality of diabetes care in urban and rural Indian health programs. *Ethnicity & Disease*. 2006 Autumn; 16:772-7. (Grant HS10854).

- **Structural change is needed to stem diabetes crisis**

Native American communities in the United States have experienced an upswing of community participation in health programming, especially for diabetes. The author suggests that because knowledge of the disease, its risk factors, and the behavioral elements that assist in its spread and prevalence are known, a structural change is needed in tribal health care. A holistic approach is required that recognizes how genetic, cultural, environmental, and political-economic factors work simultaneously to produce the current crisis in diabetes. Smith-Morris CM. Community participation in tribal diabetes

programs. *Am Indian Culture and Research J.* 2006; 30(2):85–110. (Grant HS10802).

- **Pregnancy may be best time to curb diabetes in the Pima**

The author delves into the spectrum of causes, perspectives, and conditions that underlie the occurrence of diabetes in the Pima community. Using narratives of pregnant Pima women and nearly 10 years of research in this community, the volume provides the Pimas' perspective of type 2 and gestational diabetes and their experience, including their core values of motherhood, foodways, ethnic identity, exercise, attitude toward health care, and willingness to seek care. The author asserts that the prenatal period may offer the most hope for curbing the epidemic. Smith-Morris CM. *Diabetes among the Pima: Stories of survival.* Tucson: University of Arizona Press. 2006. (Grant HS10802).

- **Pima women place high value on own and others' experiences with gestational diabetes**

Because it is mostly symptomless, gestational diabetes can be a mysterious disease. Medical information that contradicts family and friends' information on diabetes can contribute to Pima women's not undergoing testing during pregnancy. Though Pima women do listen to health professionals, they also rely on their family and friends as sources of medical information. Smith-Morris C. Prenatal mysteries of symptomless diabetes in the Gila River Indian community. In: Ferreira ML, Lang GC, Eds. *Indigenous peoples and diabetes.* Durham: Carolina Academic Press, 2006:187-202. (Grant HS10802).

- **Providers and patients have similar concerns about preventing diabetes**

When pregnant women develop gestational diabetes, they and their

children are at risk for developing type 2 diabetes. Pima women have been targeted for diabetes prevention because of the disease's prevalence in the community. Both health care professionals and the Pima raise the same set of questions about diabetes prevention and surveillance during pregnancy. Smith-Morris C. Diagnostic controversy: Gestational diabetes and the meaning of risk for Pima Indian women. *Med Anthropol.* 2005 Apr-Jun; 24(2):145-77. (Grant HS10802).

Disparities

Improvements in preventive services, care for chronic conditions, and access to care have led to a reduction and in some cases elimination of disparities in access to and receipt of care for AI/AN populations; however, disparities in care continue to be a problem for some conditions.

AHRQ is supporting efforts to identify and address disparities in health and health care among AI/ANs.

- **Higher education among American Indian elders increases their likelihood of engaging in physical activity**

AI/ANs report lower levels of leisure-time physical activity than majority populations. This lack of exercise puts them at risk for obesity, hypertension, type 2 diabetes, and cardiovascular disease, which are becoming more prevalent in many AI/AN communities. However, as with many other groups, more educated AI/AN elders have higher levels of physical activity than their less educated counterparts, finds a new study. Researchers correlated education with physical activity level among 125 sedentary AI/AN elders (age 50 to 74 years) enrolled in a 6-week trial comparing 2 approaches to physical activity monitoring. After controlling for relevant demographic and health

factors, they found that groups at different educational levels (less than high school, completed high school, General Education Degree or some vocational education, and college education) did differ significantly in caloric expenditure due to moderate to vigorous exercise, with the differences increasing significantly with higher levels of educational attainment. Sawchuk C, Bogart A, Charles S, et al. Education is associated with physical activity among American Indian elders. *American Indian Alaska Native Mental Health Research.* 2008; 15(1); 1-17. (Grant HS10854).

- **Distance to cancer care facilities hinders access for American Indians**

For specialized services such as cancer care that are not widely distributed geographically, access may be fundamentally limited by distance, which can be measured in travel time. Using census data, researchers estimated travel times to National Cancer Institute (NCI)-designated Cancer Centers, academic medical centers, and oncologists by various demographic characteristics, including race/ethnicity and region. AI/ANs, nonurban dwellers, and residents in the South had the longest travel times to a NCI Cancer Center. Travel burdens also persisted for AI/ANs and nonurban populations for cancer treatment by academic medical centers and oncologists. These disparities in access merit further examination if corrective policies are to be designed and implemented. Onega T, Duell EJ, Shi X, et al. Geographic access to cancer care in the U.S. *Cancer.* 2008; 112:909-918. (Grant T32HS00070).

- **AHRQ cosponsors conference on racial/ethnic disparities**

AHRQ was a participating cosponsor of the Department of Health and Human Services' Office of Minority Health

National Leadership Summit on Eliminating Racial and Ethnic Disparities in Health held in January 2006. A list of presentations relevant to minority communities, including AI/AN subpopulations, can be found on the summit Web site at www.omhsummit2006.org/PresentationsCommunity.htm.

- **Researcher examines native elder health disparities**

At one of AHRQ's Excellence Centers to Eliminate Ethnic/Racial Disparities, a team headed by an American Indian researcher examined the health care of elderly AI/ANs for diabetes, heart disease, cancer, and respiratory diseases, such as influenza, tuberculosis, and pneumonia—chronic conditions for which the AI/AN population is at an increased risk. Individual projects included improving the quality of diabetes care; increasing participation in clinical preventive services, such as immunization and cancer detection/management; smoking cessation; as well as identifying both the barriers and facilitators to improved health status and functioning of older AI/ANs. (Principal Investigator: Spero Manson, University of Colorado; Grant HS10854, 9/30/00-9/29/06).

- **Survey measures disparities between American Indians and U.S. population**

The authors looked at the usefulness of a 36-item health survey for comparing the health of American Indians to an age- and gender-matched sample of the U.S. general population. The survey's scales include physical functioning, pain, general health, vitality, social functioning, mental health, and physical and emotional roles. They found that the 36-Item Short Form Health Survey is an important tool for studying cultural equivalence and health disparities increases. Beals J, Welty TK,

Mitchell CM, et al. Different factor loadings for SF36: The Strong Heart Study and the National Survey of Functional Health Status. *J Clin Epidemiol.* 2006 Feb; 59(2):208-15. (Grant HS10854).

- **Several projects address health disparities in Montana and Wyoming**

The authors report on the progress of studies undertaken as part of a collaborative consortium formed to address health disparities (for example, lower life expectancy) affecting Montana and Wyoming tribal nations. Funded until 2011, six studies address topics such as seatbelt use, eye disease, suicide prevention, emergency medical services, and physical and mental health care access improvement. Andersen SR, Belcourt GM, Langwell KM. Building healthy tribal nations in Montana and Wyoming through collaborative research and development. *Am J Public Health.* 2005 May; 95(5):784-9. (Grant HS14034).

Managed Care for Medicaid

Managed care has brought many changes to health care delivery and financing in the United States. While this has created many benefits, it has also complicated the health care industry. When New Mexico introduced Medicaid managed care for physical and mental health services in 1997, it spawned many unintended consequences.

- **Managed care for Medicaid may not be beneficial in rural areas**

New Mexico's Medicaid managed care program led to administrative burdens, payment problems, and high turnover among providers. The restrictions the program instituted on inpatient and residential treatment aggravated access issues for Medicaid recipients and caused the Federal Government to

terminate the State's program, though it later reversed that decision. The authors suggest that the advantages of managed care for cost control, access, and quality assurance may be diminished in rural, medically underserved states. Willging C, Waitzkin H, Wagner W. Medicaid managed care for mental health services in a rural state. *J Health Care Poor Underserved.* 2005 Aug; 16(3):497-514. (Grant HS09703).

Mental Health

For AI/ANs, alcoholism rates are more than seven times the national average, suicide rates are almost double, and homicide rates are one-and-a-half times the national average for all races. Although some AI/ANs have access to care through IHS, barriers such as access to care and questionable quality and comprehensiveness of care may impede those who need help.

- **Childhood experiences influence war-related PTSD**

The authors looked at the relationship between childhood conduct disorders, levels of war zone stress, and war-related PTSD symptoms in 591 male participants from the American Indian Vietnam Veterans Project. Childhood conduct disorder, which involves risk taking, was associated with war-related PTSD symptoms, independent of how much stress was encountered in the war zone. Symptoms of conduct disorder may be important for care providers to consider when they treat American Indian Vietnam veterans with PTSD and may be important for the military in assessing American Indians for combat readiness. Dillard D, Jacobsen C, Ramsey S, and Manson S. Conduct disorder, war zone stress, and war-related posttraumatic stress disorder symptoms in American Indian Vietnam veterans. *J Traumatic Stress.* 2007 Feb; 20(1):53-62. (Grant HS10854).

- **Posttraumatic stress disorder linked to pain in Plains Indians study**

The authors examined the relationship between PTSD and pain in 3,084 American Indians from the Northern and Southwestern Plains areas. Nineteen percent of women and 10 percent of men experienced lifetime PTSD, and women in both areas were nearly twice as likely as men to have lifetime PTSD. The authors found a strong association of PTSD and physical pain and suggest that more research is needed among American Indians and other minorities to examine if and how the pain experience varies by tribe or culture. Buchwald D, Goldberg J, Noonan C, et al. Relationship between post-traumatic stress disorder and pain in two American Indian tribes. *Pain Med.* 2005 Jan-Feb; 6(1):72-9. (Grant HS10854).

Perceptions of Care

To gauge AI/ANs' satisfaction with the quality of their health care, researchers use surveys, focus groups, and other assessment tools.

- **Collaboration between Choctaw Nation, AHRQ, and IHS yields the American Indian Survey, an adaptation of CAHPS®**

The Consumer Assessment of Healthcare Providers and Systems (CAHPS®) surveys measure patients' experiences with ambulatory and facility-level care. Since these surveys are not adapted for ethnic and linguistic minority populations, the Choctaw Nation Health Service (CNHS) Program and AHRQ agreed to explore developing a survey to collect patient experience-of-care data to evaluate care received by patients at different CNHS clinics. AHRQ and the CAHPS® consortium, together with the IHS, worked with CNHS to develop a

CAHPS® American Indian Survey. They conducted a mail survey of the Choctaw population that yielded 696 surveys (a 58 percent response rate). This collaboration and community-based participatory research helped to produce a useful survey tool that can be used by other American Indian tribes and by the IHS. Weidmer-Ocampo B, Johansson P, Dalpoas, D, et al. Adapting CAHPS® for an American Indian population. *J Health Care for the Poor Underserved.* 2009; 20:695-712.

- **Older American Indians often have a poorer view of their health than their doctors**

Investigators surveyed 115 patients 50 years and older who sought care at a Cherokee Nation clinic and their seven health care providers. In 40 percent of medical visits, providers and patients rated the patient's health differently. In 68 percent of the cases, providers rated patients healthier than the patients rated themselves. Differing perceptions between providers and patients about the patient's health are associated with inadequate and unnecessary treatment, poor adherence to treatment advice, dissatisfaction with care, diminished symptom resolution, and mismatching of care services to needs. Misaligned perceptions of health status pose special concerns for chronically ill patients, who must carefully follow providers' advice to maintain their health, and for older patients, who are often unassertive with providers and unlikely to challenge their perceptions. Garrouette EM, Sarkisian N, Arguelles L, et al. Cultural identities and perceptions of health among health care providers and older American Indians. *J General Internal Med.* 2006 Feb; 21:111-6. (Grant HS10854).

- **AI/ANs most likely to report discrimination in health care**

This study found that the AI/AN racial group were most likely to report

discrimination in health care. AI/ANs who identified as both AI/AN and white were twice as likely to perceive discrimination as whites. A telephone survey of adults in the 2001 California Health Interview Survey found that 7.1 percent of the AI/AN group, 8.8 percent of the AI/AN plus white group, 5.6 percent of blacks, 4.3 percent of whites, and 2.6 percent of Asian Americans felt discriminated against at some point during the past year of care. More than 20 percent of AI/AN, black, and Asian American respondents reporting discrimination cited race as the sole reason compared with less than 10 percent of AI/AN plus white and white respondents. Johansson P, Jacobsen C, and Buchwald D. Perceived discrimination in health care among American Indians/Alaska Natives. *Ethnicity & Disease.* 2006 Autumn; 16:766-71. (Grant HS10854).

- **Survey of patients' experiences completed**

Researchers completed standardized surveys of patients' experiences with the Billings Area Office of the IHS in 2003 to develop new performance initiatives and learn why eligible patients with other insurance coverage choose non-IHS providers. Gaining this information is particularly important because the IHS can receive reimbursement from public and private insurers when services are provided to covered patients. The research team used AHRQ's CAHPS® program, a multiyear initiative of AHRQ that assesses the patient-centeredness of care, compares and reports on performance, and improves the quality of care. Researchers, through a cooperative agreement, used survey results to develop a performance improvement plan in spring 2007 that identified cost-effective, feasible strategies for improving care. Follow-on work will include deploying interventions at one

hospital and three ambulatory clinics to give researchers an opportunity to refine tools and interventions for use in culturally diverse populations served by underfunded health care providers. Principal Investigator: Gordon Belcourt, Montana/Wyoming Tribal Leaders Council. (Grant HS14034 9/30/03 - 9/29/11).

Preventive Care

The main health challenges currently faced by AI/AN people are the health conditions and chronic diseases related to lifestyle issues such as obesity, physical inactivity, poor diet, substance abuse, and injuries. Preventive health initiatives for AI/AN populations have been undertaken to create healthier communities, improve quality of life, decrease health care utilization, control disability, and improve productivity. Initiatives include developing, coordinating, implementing, and disseminating effective health promotion and chronic disease prevention programs through collaboration with key stakeholders and by building on individual, family, and community strengths and assets.

- **Simple, effective methods to promote increased physical activity yield positive results**

Studies of geographically diverse American Indian tribes consistently show low levels of leisure-time physical activity, less frequent exercise, and a higher proportion of sedentary persons. Researchers found that physical activity among American Indian elders (aged 50-74) can be promoted in a brief, inexpensive manner in primary care. The study randomly divided 125 American Indians into 2 groups, with the first group receiving basic instruction in daily physical activity monitoring and the second group receiving instruction in daily physical

activity monitoring augmented with a pedometer to track and record their total daily step counts. At the end of the 6-week study, participant fitness was measured by performance in a 6-minute walk test. Both groups showed similar results. The researchers suggest that the act of self-monitoring can raise awareness of modifiable health habits, create an external environmental reminder to increase personal responsibility, improve self-efficacy, and provide ongoing feedback on progress. Sawchuk C, Charles S, Wen Y, et al. A randomized trial to increase physical activity among native elders. *Preventive Medicine*. 2008; 47:89-94. (Grant HS10854).

- **Improving preventive services recommendations and reminders**

To improve the quality of preventive services recommendations and reminders, in 2009 AHRQ commissioned a gap analysis to compare its recommendations in the electronic Preventive Services Selector (ePSS) tool, to the preventive health reminders currently in use in the IHS's Resource and Patient Management System (RPMS). The analysis found that the majority of the recommendations in the ePSS tool are not currently contained in the RPMS, and the ones that are have slightly different logic definitions. However, the RPMS does contain sufficient data elements so that the AHRQ recommendations can easily be built into the Best Practice and Health Maintenance sections of the existing RPMS Health Summary. (AHRQ Contract).

- **AHRQ provides support for prevention and care management services**

An interagency agreement has allowed AHRQ to provide funding to the IHS to support the improvement of the delivery of prevention and care

management services through the IHS Chronic Care Initiative (CCI). This agreement uses the CCI's key strategy, the Collaborative Innovations in Planned Care for the Indian Health System (IPC-IHS). The IPC collaborative will focus on the self-management support component of the Chronic Care Model and provide training in the 5 A's model of behavior change (Assess, Advise, Agree, Assist, Arrange) and motivational interviewing for teams. The collaborative also supports primary care practices to improve chronic illness and preventive care for AI/ANs. The 2-year project will help to answer questions about what elements can be integrated into the IHS electronic health record (EHR) to prompt and document self-management support. Another area to be explored is what key measures should be collected from the EHR to drive performance improvement. (AHRQ and IHS Interagency Agreement).

Quality of Care

A primary interest of AHRQ is improving the quality of health care in the United States. Improving quality of care for AI/ANs poses various challenges. Overall, AI/ANs receive worse care than whites for more than 40 percent (9 of 22) of core quality measures and better care for nearly 25 percent (5 of 22) of core quality measures, according to AHRQ's 2009 National Healthcare Quality Report. The Agency has funded several studies aimed at improving care quality for AI/ANs.

- **Project seeks ways to improve CAHPS® and enhance its impact**

The Yale CAHPS® team is conducting a Quality Indicators (QI) project with the Eastern Shoshone and Northern Arapaho Tribes of the Wind River Indian Reservation in Wyoming and

with the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation in Montana. The Yale team has worked with the Tribal Health Directors at Wind River and the IHS leadership team to develop a modified version of the CAHPS® 3.0 instrument. This instrument is being used to collect data to identify specific areas for targeted QI interventions. Baseline data has been collected and reported to the Tribal-IHS Working Group. This team is now developing a detailed plan for the QI initiative which will be presented to the Tribal Health Directors and IHS for review. At the Fort Peck Indian Reservation, the Tribal Health Director is interested in conducting QI interventions at the tribally operated dialysis unit. The team, with input from the Tribal Health Director, has developed a modified version of the CAHPS® In-Center Hemodialysis Survey that will be used to collect baseline data through which to identify the specific QI initiative to be implemented. It is anticipated that a QI project will also be conducted with the Fort Peck IHS Service Unit. (Principal Investigator: Paul D. Cleary, Yale University; Grant HS16978, 9/01/07-8/31/12).

- **Project to improve race and health status data for Pacific Northwest States**

The Improving Data and Enhancing Access-Northwest Project seeks to more accurately characterize health status and clinical outcomes data for Northwest tribal people, while working to minimize and eventually eliminate racial misclassification errors in State surveillance data systems. To identify and correct racial misclassification, the project will conduct record linkages with an array of health-related data systems in a three-State region. Ultimately, it will disseminate results and develop concrete methods by which

other States and Tribal Epidemiology Centers may implement similar programs. AHRQ is providing support for this project through funding received from the American Recovery and Reinvestment Act of 2009. (Principal Investigator: Victoria Warren-Mears, Northwest Portland Area Indian Health Board; Grant HS19972, 9/30/10-9/29/13).

- **Medical home model for Alaska Natives to be assessed for impact on patient care delivery**

The Southcentral Foundation (SCF), a tribally owned organization, implemented a patient-centered medical home (PCMH) in 1999 and 2000 in Anchorage, Alaska. The SCF PCMH has three key characteristics: patient-selected family match to a primary care team, patient-driven care, and advanced access. In this project, the University of Alaska and the SCF are partnering to determine the impact of the PCMH transformation on the characteristics and quality of patient care delivery, and to assess changes in health care delivery, such as quality and safety efforts, efforts to bring evidence to the point of care, use of information systems, and costs. This PCMH model could have national implications for improving the health of the AI/AN population and may also be relevant to other practices serving diverse populations with multiple health disparities. (Principal Investigator: David L. Driscoll, University of Alaska at Anchorage; Grant HS19154, 7/01/10-6/30/12).

- **Electronic clinical data to assist in assessing comparative effectiveness of quality improvement efforts**

Over the past decade, the IHS has developed a national information technology infrastructure that allows for the routine, reproducible measurement of ambulatory quality of care across a spectrum of conditions for AI/AN

communities. This infrastructure represents a model for evaluating the use of a nationally integrated health information system to conduct comparative effectiveness research (CER) and ultimately identify the most capable quality improvement activities. This project will use electronic clinical data from the IHS national health information systems to create a longitudinal database linking quality of care measures for diabetes, cardiovascular disease, and cancer screening over a 9-year period. A second objective will be to conduct two comparative analyses to determine the effectiveness of delivery system interventions, such as the use of an advanced EHR, and a chronic care model (Improving Patient Care) to assess health care quality and outcomes for diabetes, cardiovascular care, and cancer screening. AHRQ is providing staff support to IHS in this project with funding received from the American Recovery and Reinvestment Act of 2009.

- **Study links funding levels of tribal health programs to outcomes**

Tribally Operated Health Programs (TOHPs) provide care nationally to more than one-third of the 1.8 million AI/ANs who obtain services from the IHS. Many unnecessary hospitalizations can be prevented with access to comprehensive effective ambulatory care. This study found that higher IHS funding levels for TOHPs in California were associated with lower rates of hospitalization for ambulatory care-sensitive conditions (HASCs) by the AI/ANs who used them. On average, IHS funding pays for less than 49 percent of the medical care provided by TOHPs in California. For TOHPs with funding less than 60 percent of what the Federal government pays for Federal employee medical care (benchmark), the

HASC rate dropped 12 percent for every 10 percent increase in funding. Even when adjusted for confounding characteristics, the funding effect was between 9 and 11 percent. The authors concluded that additional funding of tribal program health care is likely to improve outcomes of care for the AI/AN population. Korenbrot C, Kao C, Crouch JA. Funding of tribal health programs linked to lower rates of hospitalization for conditions sensitive to ambulatory care. *Medical Care*. 2009 Jan; 47(1):88-96.

- **Collaboration creates community health information exchange network**

This project includes a collaborative partnership among 12 agencies, including a rural acute care hospital, a large American Indian tribal entity, an IHS hospital, a community health center, a health department, and a community consortium. The total patient population is 250,000 in 14 counties in rural northeastern Oklahoma. The project includes three components for improving quality of care. The first, Healthfinder, is an electronic and telephone resource to assist consumers in locating health providers and social services. It also assists providers in meeting community needs. Healthfinder (www.okhealthfinder.com) includes a special section to assist AI/ANs in finding tribal and IHS resources. The second component implements an integrated community health information exchange network to facilitate provider coordination and transfer of critical patient information. The network is using Hastings Indian Medical Center, an IHS facility, and the Cherokee tribe, the second largest tribe in the country, as initial connections with the goal of allowing all IHS and Native American tribes to connect quickly and inexpensively through the

network. The last component explores areas for the most cost-effective prevention strategies and adopts common objectives for prevention interventions and outcome measurement. This project builds on an earlier 1-year planning grant (HS15364) by the same investigator. (Principal Investigator: Mark Jones, Tahlequah City Hospital; Grant HS16131, 9/30/05-9/29/08).

- **Study seeks strategies to improve performance based on priority issues**

In addition to supporting the development of a sustainable research infrastructure for the Montana/Wyoming Tribal Leaders Council, Black Hill State University, and the Black Hills Center for American Indian Health, this project funded a study aimed at designing, implementing, and evaluating the effectiveness of a structured process in which tribal members and IHS providers jointly developed strategies to improve performance based on priority issues identified through a consumer survey. Investigators developed a targeted research agenda that addressed tribally identified priority issues, such as hepatitis C, West Nile virus, and methamphetamine use. (Principal Investigator: Gordon Belcourt, Montana/Wyoming Tribal Leaders Council; Grant HS14034).

- **Database developed to assist in health care planning**

This grant enabled the development of a shared resource database for tribes to use in health care program planning and application development. It includes area- and tribal-specific data, “best practices” papers, and links to resources on health topics of interest to the tribes. It is currently being maintained by the Rocky Mountain Tribal Epi-Center. Principal Investigator: Gordon Belcourt,

Montana/Wyoming Tribal Leaders Council. (Grant HS14034).

Research Considerations

When researchers study AI/AN people, they need to be able to understand, appreciate, and use culturally appropriate strategies. For example, they need to understand AI/AN cultural values and language barriers that alter perceptions of informed consent to research participation. By demonstrating cultural competence, researchers can avoid stereotypes and biases that can undermine their efforts. It also promotes a focus on the positive characteristics of a particular group. Cultural competence acknowledges and incorporates at all levels the importance of culture, the assessment of cross-cultural relations, vigilance toward the dynamics that result from cultural differences, the expansion of cultural knowledge, and the adaptation of services to meet culturally unique needs.

- **Project to improve the quality of race and ethnicity data in hospital discharge and emergency department databases in New Mexico**

New Mexico’s Improving the Quality of Race and Ethnicity Data Project will contribute to reducing racial and ethnic health and health care disparities by improving the reliability of race, ethnicity, and tribal affiliation hospital data in the State. Guided by a State advisory committee, between 5 and 10 pilot hospitals will field test training materials that will be developed for the project. These will include hospital procedure, data collection, patient education, and train-the-trainer materials. Hospital discharge records will be linked with birth certificate records and IHS records to track improvements. New Mexico expects to establish a model for the collection,

reporting, and appropriate dissemination of tribal identifier data which will be informally disseminated to other States and through a published manuscript. AHRQ is providing support for this project through funding received from the American Recovery and Reinvestment Act of 2009.

(Principal Investigator: Michael Landen, New Mexico State Department of Health; Grant HS20033, 9/30/10-9/29/13).

- **Coding problems inhibit ability to study American Indian acute inpatient hospital data**

Reliable coding of race and ethnicity by hospitals represents a critical step toward assessing and addressing racial and ethnic disparities in acute inpatient care. The authors examined the reliability of race and ethnicity classifications by different hospitals who admitted the same patients in a large, diverse State. The rates of coding agreement for American Indians were very low (19 percent), compared with whites (91 percent) and blacks (88 percent). There was a similar pattern for hospital data and death certificates with agreement of only 27 percent for American Indians. The authors concluded that coding agreement is too low for American Indians (as well as persons born in American Indian and selected Hispanic subgroups) for these groups to be studied using this data. Fiscella K. and Meldrum S. Race and ethnicity coding agreement between hospitals and between hospital and death data. *Med Sci Monit.* 2008; 14(3):SR9-SR13. (Grant HS10910).

- **Individual consent in research can clash with community values**

Reflecting on a decade of research among American Indians in the Southwest, the author studied the biomedical ethics of individual autonomy, which can be incompatible

with the culture mores of strong family, community, and group decisionmaking. The author suggests that alternative approaches to informed consent and ethics are called for. Smith-Morris CM. Autonomous individuals or self-determined communities: The changing ethics of research in Indian country. *Human Organization.* 2007 Fall; 66(3); 327-336. (Grant HS10802).

- **AI/ANs difficult to reach by mail**

The researchers sent a calendar with preventive health information to one group and no health information to the control group via first class mail to 5,633 patients who had been seen at a clinic during the past 2 years. Based on initial mailings and in-person location efforts, an estimated 61 percent of patients received the calendars. The mail verification process was significantly less likely to identify addresses for patients who were AI/AN and those who were seen more than 3 months before the study. In fact, AI/ANs were about half as likely as non-AI/ANs to have accurate addresses. The results suggest that it is difficult, but possible, to use the U.S. Postal Service to reach patients seen at an urban Indian health facility. Duffy D, Goldberg J, Buchwald D. Using mail to reach patients seen at an urban health care facility. *J Health Care Poor Underserved.* 2006 Aug; 17:522-31. (Grant HS10854).

- **Nearly half of urban AI/ANs travel back to their reservation yearly**

Of the more than two million AI/ANs living in the United States today, only 25 percent reside on reservations, while 60 percent live in cities. Those who live in cities often travel to reservations, yet little is known how this travel may be related to health. Researchers surveyed more than 500 AI/AN adults at a primary care clinic in Seattle about time spent visiting a reservation during the



past year, and the person's sociodemographic, cultural, and clinical characteristics. Thirty-four percent of respondents had spent up to 30 days traveling, 14 percent had spent more than 30 days traveling, and 52 percent had not traveled to reservations. Strong Native American cultural identification, presence of lung disease, absence of thyroid or mental problems, and greater dissatisfaction with care were independently associated with more travel to reservations. Reservation visits were not consistently linked to self-reported health outcomes, nor could the researchers determine how often respondents traveled to the reservation for health care. The findings underscore the importance of considering the role of culture as well as residence and patterns of travel in both research and clinical care involving AI/ANs. Rhoades DA, Manson SM, Noonan C, Buchwald D. Characteristics associated with reservation travel among urban Native American outpatients. *J Health Care Poor Underserved*. 2005 Aug; 16(3):464-74. (Grant HS10854).

- **Strictly translated informed consent documents promote mistrust**

Interpreters and a Navajo language consultant developed a translation in Navajo of a standard consent form for participating in a study. After using the form for 4 months, the researchers learned that the formal consent process often led to confusion and mistrust of the research. The researchers stress that cross-cultural communications and translations increase effectiveness. McCabe M, Morgan F, Curley H, et al. The informed consent process in a cross-cultural setting: Is the process achieving the intended result? *Ethn Dis*. 2005 Spring; 15(2):300-4. (Grant HS10637).

Research Infrastructure Development

A major AHRQ goal is to build research infrastructure and enhance opportunities for AI/AN investigators in health services research.

- **Partnerships formed to foster research and research training**

In addition to building the research capacity for the Native American Research Center for Health (NARCH), this multiyear project aimed to identify which health care characteristics of tribal health program service systems are associated with preventable hospitalizations. AHRQ became a partner in the NARCH program in 2005, supporting the California Rural Indian Health Board's NARCH grant. This program—which aimed to develop opportunities for conducting research and research training that respond to the needs of AI/AN communities—was predominantly funded by the National Institutes of Health and managed by the IHS. The centers created partnerships between AI/AN organizations and research-intensive institutions. Further information on the NARCH grants can be found at <http://www.ihs.gov/MedicalPrograms/Research/narch.cfm>.

- **Project studies comparative effectiveness of disease management by IHS advanced practice pharmacists**

This project seeks to create an IHS database/data infrastructure that will support the conduct of CER and to conduct a comparative effectiveness study of a health system delivery strategy designed to improve health outcomes among AI/ANs with diabetes and CVD. The data infrastructure will help identify interventions designed to improve health outcomes and reduce documented disparities. It will be based upon 3 consecutive years of data from

four IHS data sources and will include health status measures, group codes (provider, clinic, drug, pharmacy), and cost measures. Data will be included from each of the 12 IHS regions ($\approx 650,000$ patients). The CER study will compare disease management by advance practice pharmacists with other health care providers within the IHS. Pharmaceutical care and the expanded role of pharmacists have been associated with many positive diabetes-related outcomes, including improved clinical measures, improved patient and provider satisfaction, and improved cost management. Within the IHS, 22 percent of pharmacists are advance practice pharmacists who are nationally credentialed and locally privileged to provide prescriptive pharmacy care and clinical monitoring for acute and chronic disease management. AHRQ is providing staff support to IHS in this project with funding received from the American Recovery and Reinvestment Act of 2009.

- **Conceptual model of academic persistence aids in training of young AI/AN professionals**

Various programs have emerged to recruit junior investigators to the social, behavioral, and health sciences. Drawing on Tinto's general theory of academic persistence focusing on the undergraduate education and IHS experience with the Native Investigator Development Program, the author presents a conceptual model that applies to individuals early in the postdoctoral or postresidency experience. This model is exemplified in the Native Investigator Development Program at the University of Colorado, Denver. All trainees in this program are either American Indian or Alaska Native. The author describes program and institutional characteristics as well as trainee processes. He concludes by describing the various benefits of the model, such as providing

a common language for discussing elements of the training process and serving as a guide for assessing trainee needs. Manson SM. Professional journeys, professional paths: Persistence in navigating the crossroads of a research career. *Am J of Pub Health*. 2009 Apr; 99 suppl 1:S20-S25. (Grant HS10854).

- **Project focuses on healthy weight and cancer outcomes for women**

This continuation grant builds upon its earlier capacity-building success during which the Montana-Wyoming Tribal Leaders Council developed a shared data resource and research infrastructure for participatory research among a majority of the 10 tribes it serves. The continuation project will further build capacity for health care research on the priority health issues identified by the tribes and continue to support culturally appropriate health programs. Three new research studies are planned: evaluation of interventions to promote healthy weight among women, examination of factors that contribute to breast and cervical cancer outcomes, and design and implementation of a “healthy reservations” model program for system-wide health improvement on reservations. (Principal Investigator: Gordon Belcourt, Montana-Wyoming Tribal Leaders Council; Grant HS14034).

Technology (Health Information Technology, Telehealth)

Health care is information-intensive and increasingly dependent on technology to ensure that appropriate information is available whenever and wherever it is needed. AHRQ is assisting the IHS in enhancing its health information systems to improve quality of care and patient safety. For example, AHRQ:

- Supported a collaborative, multimillion-dollar effort by the IHS to develop and deploy an EHR and population health management system and to investigate the effect of the system on the quality and safety of health care delivery in IHS facilities. The Resource Patient Management System’s EHR permits direct provider order entry and documentation, thus increasing data quality and patient safety. It also includes elements of electronic decision support. The result of this work was the deployment of an EHR to more than 120 sites. Products the IHS developed are in the public domain and have been adopted by Federal and State agencies and community-based organizations.
 - Is maximizing functionality of the Resource Patient Management System software component, the Population Management graphical user interface, called iCare. This software application is designed to integrate multiple perspectives on clinical and community care in a single software application. Users can define their own population of patients based on primary provider, case manager, as well as a host of additional characteristics such as gender, age, diagnosis, community, or other documented data elements.
 - Provided partial funding and technical assistance for an evaluation of the deployment and impact of the Resource Patient Management System’s EHR. AHRQ assisted the evaluation team at the Urban Indian Health Institute (part of the Seattle Area Epidemiology Center) and Harvard University with evaluation methodology, design, and analysis.
 - Assisted the IHS in improving outcomes in chronic illness care and preventive services through:
 - contributing to the building of an infrastructure for quality improvement and collaborative learning.
 - adapting and implementing the Chronic Care Model in Federal, tribal, and urban facilities.
- **Project seeks to improve care for minority stroke survivors**
- This mentored clinical scientist development award will assist a minority researcher in helping to achieve the aims of the Stroke Telemedicine Access Recovery (STAR) Project. STAR’s long-term goal is to implement an innovative, multi-disciplinary, specialty-care intervention for stroke survivors that targets early introduction to rehabilitation and assists with transitions between levels of care. The project is to take place at the Southeastern Regional Medical Center, a rural hospital serving a Lumbee Indian, African American, and white population. The first phase of the project is to observe the current rehabilitation process to be followed by implementing a multi-disciplinary consultation service using telemedicine video-conference technology. The researcher will provide pilot data to improve inpatient management, discharge disposition, and recovery phase care. (Principal Investigator: Patricia C. Gregory, University of North Carolina at Chapel Hill; Grant HS17956, 7/01/09-6/30/14).
- **Family Health History Initiative to strengthen clinical decision support tools**
- AHRQ is providing funding to the IHS to support the Family Health History initiative. At present, there is a paucity of EHR systems capable of capturing family health history data in a structured, standardized, and interoperable format that can be seamlessly integrated with electronic clinical decision support (CDS) tools.

The IHS has taken the lead in developing the technical implementation of a system that is capable of producing a standards-based, machine-readable file that can be consumed by partner organizations across the government and private industry. The agreement outlines the scope, timeline, roles, and responsibilities of the project to be completed by the IHS. (AHRQ and IHS Interagency Agreement).

- **California implements information technology systems for rural Indian clinic health care**

The California Rural Indian Health Board in September 2004 began partnering with three of its rural tribal health programs that implemented electronic health records with clinical decision support systems in an effort to reduce hospitalizations that may be preventable through improved care quality and reduced medical errors. The information technology systems that result will be used in conjunction with local hospitals to support the review of all hospitalizations for their preventability and to track the programs' medical and medication errors as well as their clinical care performance according to standardized performance guidelines. (Principal Investigator: Linda Aranaydo, California Rural Indian Health Board; Grant HS15339, 9/20/04-8/31/07).

- **Telehealth initiative sparks health information campaigns**

The authors examined the Native TeleHealth Outreach and Technical Assistance Program that transfers knowledge of health telecommunication technologies to community health professionals to empower them to use these resources in their communities. The program offered instruction on telehealth for care providers who, in turn, developed culturally relevant

information for recipients on health topics via CDs, videos, Web sites, and brochures. Dick RW, Manson SM, Hansen AL, et al. The native telehealth outreach and technical assistance program: A community-based approach to the development of multimedia-focused health care information. American Indian and Alaska Native Mental Health Research: *J National Center*. 2007; 14(2):49-66. (Grant HS10854).

- **Health collaborative technology assessed in Alaska's Central Kenai Peninsula**

This project assessed the status of technological resources of a federally qualified health center for uninsured and underinsured patients, a mental health clinic, a long-term care provider, and a local acute care hospital serving a population of Alaska Natives, poor patients, and patients with disabilities. The study team prepared a plan for implementing health information technologies to allow for area-wide electronic communications and connectivity with an electronic health record and a Web-based data system for patient support. (Principal Investigator: Susan Caswell, Central Peninsula General Hospital; Grant HS14902, 9/30/04-9/29/06).

- **Patients and clinicians receptive to telepsychiatry services for youth**

To address the shortage of practitioners in child and adolescent psychiatry, the use of real-time interactive teleconferencing to deliver psychiatric services, or telepsychiatry, has been proposed as a way to meet the needs of American Indian youth. The authors reviewed the progress of a twice-monthly telepsychiatry program for children and adolescents undertaken by the University of Colorado School of Medicine's Center for Native American TeleHealth and TeleEducation and the

IHS's Rapid City Hospital. Parents said they preferred the service to the 350-mile drive they would otherwise need to make to get help for their children. Clinicians said teleconsultations helped in diagnosing and managing complicated patients and families. Savin D, Garry M, Zuccaro P, et al. Telepsychiatry for treating rural American Indian youth. *J Am Acad Child Adolesc Psychiatry*. 2006 Apr; 45(4):484-8. (Grant HS10854).

- **Telepsychiatry clinics offer a model to increase care to rural American Indian communities**

The authors describe the rural telepsychiatry clinics run by the American Indian and Alaska Native Programs at the University of Colorado Health Sciences Center through a partnership with the Department of Veterans Affairs, the IHS, and local tribal health services. This service may offer a means to increase access to care for rural American Indian communities. The clinics primarily offer assistance to American Indian veterans with PTSD. Describing the model used for developing the services, the authors trace the program development, discuss challenges in implementing services, and offer solutions. The model can guide the development of telepsychiatry services for American Indians, especially rural populations. Shore JH, Manson SM. A developmental model for rural telepsychiatry. *Psychiatr Serv*. 2005 Aug; 56(8):976-80. (Grant HS10854).

Tobacco Use

Traditional tobacco has a spiritual role in Indian culture and varies from tribe to tribe. By some estimates, American Indians have used the tobacco plant for more than 18,000 years. Traditional tobacco is still used by many tribes for prayer, ceremonies, offerings, gift-giving, or as a healing medicine. Commercial

tobacco use, however, is also significant among AI/ANs. Approximately 32 percent of AI/ANs are smokers. This is the highest rate of tobacco use among every age, ethnic, and gender category in the United States. Between 1983 and 2002, adult smoking rates fell in all racial and ethnic groups except for American Indians and Alaska Natives.

- **Northern Plains American Indians smoke more than Southwest Plains Indians**

This study of Southwest and Northern Plains American Indians (ages 15 to 54) found that about half of Northern Plains men and women currently smoked (49 and 51 percent, respectively), while 19 percent of Southwest men and 10 percent of Southwest women smoked. The study did not determine use of tobacco for ceremonial purposes. However, the Northern Plains tribe bases a large part of their spiritual philosophy around the concept of the “sacred pipe,” considerably more so than the Southwest tribe. Thus, the differences in smoking rates could have a cultural basis. Men and younger people were more likely to smoke in the Southwest tribe but not the Northern Plains tribe. This finding is consistent with other studies that suggest cigarette smoking among tribes of the Southwest region is on the rise, especially among younger men. The results underscore the need to consider each tribal group’s unique characteristics when designing and implementing culturally sensitive smoking intervention programs in American Indian communities. Nez Henderson P, Jacobsen C, Beals J. Correlates of cigarette smoking among selected Southwest and Northern plains tribal groups: The AI-SUPERPPF Study. *Am J Public Health*. 2005 May; 95(5):867-72. (Grant HS10854).

Traditional Medicine

Many AI/ANs use traditional practices, such as herbs, to address their health care concerns.

- **Traditional herbs do not affect diabetes medication**

Many AI/ANs integrate traditional herbs with Western medicine, though there is limited data on the herbs’ efficacy. During a randomized clinical trial from 2001-2003 on the Navajo Nation, 30 percent of the participants said they used herbs as medicine. Of the participants with diabetes who used traditional herbs, the study found no measurable adverse interaction with diabetes control medications. McCabe M, Gohdes D, Morgan F, et al. Herbal therapies and diabetes among Navajo Indians. *Diabetes Care*. 2005 Jun; 28(6):1534-5. (Grant HS10637).

Trauma

Injury is a leading cause of death and disability for AI/AN communities. Overall, unintentional injury is the third leading cause of death among AI/ANs, and suicide and homicide are among the top 10 causes of death. Injuries and violence are especially a burden for the young AI/AN population, accounting for 75 percent of all deaths among those ages 1 to 19. Unintentional injury, suicide, and homicide are respectively the top three killers among AI/ANs 1 to 44 years old, accounting for 54 percent of all deaths. Injuries cause more deaths among AI/ANs 1 to 44 years of age than all other causes combined. Unintentional injuries account for more years of potential life lost among AI/AN than heart disease, cancer, and diabetes combined.

- **Trauma linked to alcohol problems in American Indians**

American Indians experience more traumas and alcohol disorders than the general population. Researchers interviewed 432 American Indians

between the ages of 15 and 24, asking participants if they had experienced any of 16 types of traumatic events and about their use of alcohol. Overall, 21 percent had experienced one severe traumatic event, 10 percent had experienced two, and 16 percent had experienced three or more. Young adults (aged 20-24) experienced more traumatic events than adolescents (aged 15-19), as did participants in both age groups who reported that their parents used alcohol while they were growing up. More than one-fourth (26 percent) of those interviewed were diagnosed with alcohol use disorders. The odds for alcohol use disorders increased from nearly twofold for one trauma to somewhat less than fourfold for three or more traumas compared with no trauma. These results held after adjusting for age, gender, and parental alcohol use, suggesting a dose-response effect of trauma on alcohol disorders among American Indians living on or near reservations. Boyd-Ball AJ, Manson SM, Noonan C, et al. Traumatic events and alcohol use disorders among American Indian adolescents and young adults. *J Traumatic Stress*. 2006 Dec; 19(6):937-47. (Grant HS10854).

- **Trauma strikes American Indians more often than the general U.S. population**

Southwest and Northern Plains American Indians more often experience trauma than the general U.S. population, according to this study of trauma exposure among two tribes. Researchers interviewed 3,084 members of two tribes about their exposure to 16 types of trauma. They compared tribal prevalence rates of trauma with a sample of the U.S. general population in the National Comorbidity Survey. Lifetime experience of any trauma was high across both tribes, ranging from 62.4 percent for male Southwest tribe members to 69.8 percent for female

Northern Plains tribe members. This compares to lifetime exposure to any trauma among U.S. men and women at 60.7 percent and 51.2 percent, respectively. The researchers suggest that high rates of trauma exposure may contribute to the increasing prevalence of CVD, the leading cause of death among American Indian men and women. Similarly, trauma is closely linked to pain, which negatively affects compliance with treatment, help-seeking, and the speed of surgical recovery, all of which are often compromised in American Indians. Manson SM, Beals J, Klein SA, et al. Social epidemiology of trauma among 2 American Indian reservation populations. *Am J Public Health*. 2005 May; 95(5):851-9. (Grant HS10854).

Women's Health

AI/AN women have striking health concerns. They give birth to children at younger ages than do women in the general U.S. population. High birthweight births of 4,000 grams or more (vs. low birthweight births) are a relatively greater problem for AI/AN women. These women generally begin prenatal care later than other women in the United States and are more likely to exhibit risky behaviors, such as smoking or consuming alcohol, during pregnancy than their counterparts in the United States.

- **Study looks at breast and cervical cancer screening and followup**

In addition to supporting the development of a sustainable research infrastructure for the Montana/Wyoming Tribal Leaders Council, Black Hills State University, and the Black Hills Center for American Indian Health, this project funded a

study for identifying factors that affect breast and cervical cancer screening and followup of abnormal findings.

Investigators developed a pilot program to increase the proportion of American Indian women who receive screening tests. (Principal Investigator: Gordon Belcourt, Montana/Wyoming Tribal Leaders Council; Grant HS14034, 9/30/03-9/29/06).

- **Extremely obese American Indian and Alaska Native women may have higher bone mineral density than white counterparts**

Researchers compared baseline bone mineral density (BMD) of 139 AI/AN postmenopausal women with 1,431 non-Hispanic white postmenopausal women to determine the variability of BMD, osteoporosis, and hip fractures. The AI/AN women studied were twice as likely to be obese (body mass index of 30-39.9) or extremely obese (BMI of greater than 40) than non-Hispanic white women. The extremely obese AI/AN women had higher hip BMD than extremely obese non-Hispanic white women, but overweight AI/AN women had slightly lower spine and whole body BMD compared to non-Hispanic white postmenopausal women. Wampler NS, Chen Z, Jacobsen C, et al. Bone mineral density of American Indian and Alaska Native women compared with non-Hispanic white women: Results from the Women's Health Initiative Study. *Menopause: J North Am Menopause Society*. 2005 Sep-Oct; 12(5): 536-44. (Grant HS10854).

For More Information

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 Photos courtesy of the IHS.

Key Acronyms

AHRQ	Agency for Healthcare Research and Quality
AI/AN	American Indian/Alaska Native
CAHPS®	Consumer Assessment of Healthcare Providers and Systems
CVD	cardiovascular disease
CER	comparative effectiveness research
EHR	electronic health record
HDL-C	high density lipoprotein cholesterol
HHS	Department of Health and Human Services
IHS	Indian Health Service
PTSD	posttraumatic stress disorder
RA	rheumatoid arthritis



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