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INTRODUCTION

The Eighth Annual Health Research Report, produced by the American Indian/Alaska Native Health Research Advisory Council (HRAC or the Council), represents a compilation of select findings related to important health research topics supported by the U.S. Department of Health and Human Services (HHS) in American Indian and Alaska Native (AI/AN) communities. This report may be used as a resource to share research topics, findings, and available federal programs with tribes and interested stakeholders. The project descriptions provided are from the Office of the Assistant Secretary for Planning and Evaluation (ASPE); Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR); National Institutes of Health (NIH); and the Native American Research Centers for Health (NARCH) program.

HRAC BACKGROUND AND INFORMATION

First convened in May 2006, the HRAC was established as a mechanism to support collaborative approaches between federal and tribal partners to reduce health disparities that affect AI/AN communities. Comprised of elected tribal officials—one delegate and one alternate from each of the 12 Indian Health Service (IHS) areas—and four national at-large members, the HRAC had its charter developed and ratified in June 2008. Federal partners participate in Council activities by providing input and support, and linkages with HHS’s Operating Divisions/Staff Divisions. These federal partners include the Administration for Children and Families; Agency for Healthcare Research and Quality (AHRQ); Office of the Assistant Secretary for Planning and Evaluation; CDC; Health Resources and Services Administration; Office of Intergovernmental and External Affairs; IHS; NIH; Substance Abuse and Mental Health Services Administration (SAMHSA); and Office of Minority Health (OMH). The latter, OMH, coordinates the activities of the HRAC (e.g., meetings, community forums, and research roundtables) as well as supports the development of various written documents and reports.

Through its communication and consultation with tribal leaders on health research concerns and needs of AI/AN populations, the HRAC sets priorities and makes recommendations to HHS leadership that inform effective Native health programs and policies. The Council’s recommendations focus on addressing health challenges and diseases that perpetually plague Indian Country. HRAC delegates are also tasked with communicating critical information about research findings and health policy activities back to their communities.
OFFICE OF MINORITY HEALTH (OMH)

The Office of Minority Health is committed to improving the health of racial and ethnic minority populations, including American Indian/Alaska Natives (AI/AN), through the development of health policies and programs that eliminate health disparities. OMH was created in 1986 as one of the most significant outcomes of the landmark report, the Secretary's Task Force Report on Black and Minority Health (Heckler Report). The OMH supports collaborative partnerships to develop, implement, and evaluate innovative and evidence-based programs that heighten public awareness, education, prevention, and service delivery that are aimed at reducing health and health care disparities, while advancing health equity.

Research Projects and Findings:

American Indian/Alaska Native (AI/AN) Health Disparities Partnerships Program

Description: OMH funds the American Indian/Alaska Native (AI/AN) Health Disparities Partnerships Program to strengthen the capacity of Tribal Epidemiology Centers (TECs) and Urban Indian Health Programs (UIHPs). Under the AI/AN Health Disparities Program, AI/AN grantees collect, manage, and disseminate health data to increase awareness of health disparities impacting Native American populations in designated tribal regions. Examples include conducting an analysis and dissemination of crash and motor vehicle safety data for tribal communities in Arizona, to reduce injuries and deaths from motor vehicle accidents; and working to increase child immunization rates. Additionally, grantees’ results have been published so that others may replicate their programs, such as Native Generations: A Campaign Addressing Infant Mortality among Urban American Indians/Alaska Natives from the Seattle Indian Board, published by the AI/AN Mental Health Journal in its August/September 2016 issue. Grantees have also improved coordination and utilization of research and outcome evaluations in programs addressing health disparities by improving data collection on AI/AN populations. For example, through linking and proper coding of existing cancer data, the Northwest Portland Area Indian Health Board identified misclassified data that resulted in a 2.7 percent increase in the number of AI/AN records in the Northwest Tribal Registry.

OFFICE OF ADOLESCENT HEALTH (OAH)

OAH is dedicated to improving the health and well-being of adolescents to enable them to become healthy, productive adults. First funded in 2010, OAH supports and evaluates evidence-based teen pregnancy prevention programs and implements the Pregnancy Assistance Fund (PAF); coordinates the U.S. Department of Health and Human Services’ (HHS) efforts related to adolescent health promotion and disease prevention; and communicates adolescent health information to health professionals and groups, those who serve youth, parents, grantees, and the general public.
**Research Projects and Findings:**

**Positive Adolescent Future Study**

*Description:* The Positive Adolescent Future Study is testing the effectiveness of programs designed to delay subsequent pregnancies, improve contraception use, and promote school attachment and completion for expectant and parenting teens in three sites (California, Texas, and Washington DC). Additionally, the Positive Adolescent Futures Evaluation will include in-depth implementation data collection and analyses for all three sites as well as a follow-up cross-grantee implementation study for the 17 PAF grantees. Reporting will begin in 2017 and continue through 2019. For the 2013-2017 cohort some results from 2013-2015 include over 24,000 expectant and parenting teens and their families being served, services being offered through 24 distinct programs, most of which combined multiple components to address participants’ varying needs. These programs were implemented by 123 provider organizations, including three tribal grantee agencies and 120 other organizations that had received sub-awards from the 14 state grantees. Nearly 50% of the youth served by the program are White, 30% are African American, and 10% are American Indian /Alaska Native. Over 50% of all youth served by the PAF program are Hispanic/Latino.

**Office of the Assistant Secretary for Planning and Evaluation (ASPE)**

The Assistant Secretary for Planning and Evaluation advises the HHS Secretary on policy development in health, disability, human services, data, and science; and the ASPE provides advice and analysis on economic policy. The ASPE also leads special initiatives; coordinates the Department's evaluation, research, and demonstration activities; and manages cross-Department planning activities such as strategic planning, legislative planning, and review of regulations. Integral to this role, the ASPE conducts research and evaluation studies, develops policy analyses, and estimates the cost and benefits of policy alternatives under consideration by the Department or Congress.

ASPE’s work spans health issues across age, biological, and sociocultural contexts. The ASPE Office of Human Services Policy focuses on poverty, human service delivery, and policies affecting children, adolescents, and low-income families. The ASPE Office of Disability, Aging and Long-Term Care Policy is charged with developing, analyzing, evaluating, and coordinating HHS policies and programs that support the independence, productivity, health, and long-term care needs of individuals with disabilities, as well as the needs of aging individuals. The ASPE Office of Health Policy supports health-related policy development affecting various populations, including AI/ANs. The ASPE Office of Science and Data Policy leads coordination of department-wide public health science policy and data policy activities and issues, and carries out policy research, analysis, evaluation, and data development.
Research Projects and Findings:

Addressing Trauma in American Indian and Alaska Native Youth (Behavioral/Mental Health)

Description: ASPE funded a study to identify practices and programs addressing trauma and related behavioral health needs among AI/AN youth. The study involved conducting an environmental scan and a literature review, and the findings were summarized in a report that includes descriptions of trauma-informed and trauma-specific interventions, common elements of behavioral health programs designed for AI/AN youth, issues concerning evidence-based and community-based interventions in tribal communities, and potential strategies to build the evidence base for effective interventions.

Publication/Reference:

Improving Data Capacity for American Indian/Alaska Native Populations in Population-Based Health Surveys (Miscellaneous)

Description: Health and mortality status assessments for AI/AN populations are often hindered by a lack of complete and accurate data on race and ethnicity in health data collections. Racial classification is an important concern in the data collection and analysis for AI/ANs. Many AI/ANs are multiracial or have Hispanic/Latino ethnicity. The current classification approaches used by population-based surveys may classify such individuals as mixed-race or Hispanic/Latino only, rather than AI/AN as their coded race. This project seeks to identify the race and ethnicity coding practices of select HHS population-based surveys and how the practices may affect the produced estimates for the AI/AN population. AI/ANs represent a small sample in most population-based health surveys, and this project will explore coding practices as a strategy that may potentially increase the sample available for analysis for this population.

As of February 2017, this study was still underway, and findings were not available.

Centers for Disease Control and Prevention (CDC) /Agency for Toxic Substances and Disease Registry

CDC works 24/7 to protect America from health, safety, and security threats, both foreign and domestic. CDC fights disease and supports communities and citizens to do the same. As the nation’s health protection agency, CDC saves lives and protects people from health threats. To accomplish its mission, CDC conducts critical science and provides health information that protects our nation against expensive and dangerous health threats, and responds when these arise.

CDC shares its focus on health protection with ATSDR, its sister agency. ATSDR serves the public through responsive public health actions to promote healthy and safe environments and
prevent exposures to harmful substances. ATSDR does this by investigating the relationship between environmental factors and health, developing guidance, and building partnerships to support health decision making.

**Research Projects and Findings:**

**Ascertaining Risk for Cancer in Family Members of Navajo Uranium Miners and Processors (Cancer)**

*Description:* CDC partnered with the IHS to understand whether Navajo family members of former uranium miners and processors are at greater risk for cancer compared to those with no family history of uranium mining or processing. Researchers will collect and compare information about a patient’s medical, family, occupational, and environmental history from the IHS-sponsored Community Uranium Exposure—Journey to Healing (CUE-JTH) program and other records (such as IHS electronic health records, cancer registry data, or other medical records) to determine the best source of information and method to answer the study questions.

Anticipated outcomes include: 1) developing both community-targeted and population-based recommendations to help prevent, identify, and address cancer in family members of uranium miners and processors based upon the risk and protective factors identified in the study; 2) publishing reports on project findings and recommendations for community stakeholders; 3) communicating study findings through publication of at least one peer-reviewed journal article; and 4) developing recommendations on ways to improve the quality and accuracy of CUE-JTH information based on the results of the comparison to other databases.

*Publications/References:*


**Evaluation of Maternal Immunization and Development of Interventions to Increase Vaccine Uptake Among Expectant American Indian Women (Infant/Child Health)**

*Description:* CDC collaborated with Johns Hopkins Center for American Indian Health to evaluate interventions to increase maternal immunization among American Indian women. Maternal vaccination is an effective strategy for protecting both pregnant women and infants too young to be vaccinated against certain infectious diseases. The Advisory Committee on Immunization Practices recommends a pertussis vaccination during every pregnancy and an influenza vaccination to women who are or will be pregnant during influenza season.
uptake of these vaccines is suboptimal, and pregnant women and their infants remain at risk. The AI/AN population is at high risk for pertussis- and influenza-related morbidity and mortality, and experiences an increased risk of disease and death from influenza and pneumonia compared with the general U.S. population. Understanding pathways to promote maternal influenza and pertussis vaccination will protect more women and infants from vaccine-preventable diseases and reduce the differential disease burden suffered by AI/AN infants and mothers. Strengthening the platform for maternal vaccination is important for those diseases for which there are licensed vaccines and sets the stage for near-term future maternal vaccines (e.g., respiratory syncytial virus vaccine and group B Streptococcus vaccine) that could offer substantial additional benefit.

American Indian and Alaska Native Health Analyses Collaborations (Infectious Disease)

*Description:* CDC funded these ongoing epidemiologic/analytical projects involving IHS, Alaska Native Tribal Health Consortium (ANTHC), and CDC’s Arctic Investigations Program (AIP). The projects were designed to detect and describe disease burden and health disparities for overall and specific infectious diseases among the AI/AN population. Analyses provided information for developing prevention strategies and vaccination policies, and reducing health disparities related to infectious diseases. Findings increase awareness of specific infectious diseases and highlight disease, population, and geographic target areas for further investigating health disparities. For example, the identification of disparities in lower respiratory tract infections among Alaska Native children led to more in-depth respiratory studies and educational efforts to reduce disease among young children in Alaska.

Arctic Investigations Program (Infectious Disease, Miscellaneous, Oral Health)

*Description:* The AIP’s mission is the prevention of infectious disease in people of the Arctic and Subarctic, with particular emphasis on Indigenous people’s health. AIP coordinates disease surveillance and operates one of only two Laboratory Response Network labs in Alaska. With support from CDC, AIP achieved the following in FY 2016:

1) **Sanitation services and infectious disease risk assessment in rural Alaska (Infectious Disease)**

AIP assessed increased infectious disease risk due to lack of in-home sanitation services. These assessments have been used to advocate for increased funding for water and sanitation services in Alaska. AIP co-sponsored an international conference on water and sanitation attended by 200 Arctic residents, engineers, scientists, and policymakers in September 2016. Called Water Innovations for Healthy Arctic Homes (www.wihah2016.com), the meeting helped introduce new technologies and approaches to meet the water/sewer needs of rural AN people. New findings in FY 2016 were published in a report on health improvements in four rural AN villages after they received running water and sewer service. Decreases in clinic visits for respiratory, skin, and diarrheal diseases were seen across the age spectrum, and community members reported improvements in quality of life and health.
2) **Response to emergence of replacement pneumococcal disease in Alaska Native infants (Infectious Disease)**
AIP continues to monitor the impact of the pneumococcal conjugate vaccine (PCV), PCV 13, in Alaska. Vaccine uptake has been excellent; 96 percent of AN infants, 19–35 months old, have received the recommended four doses. Since 2010, rates of serious pneumococcal infections have decreased by 60 percent in AN children under age 5 years, and the disparity between AN and non-Native children has been greatly reduced.

3) **Hospitalization for respiratory infections in Alaska Native children (Infectious Disease)**
Since 1994, surveillance for respiratory infection hospitalizations has been conducted among AN infants and children living in the Yukon Kuskokwim Region. This region has the highest rates of infant pneumonia hospitalization in the U.S. This surveillance has helped monitor the introduction of new treatments and vaccines and provides data used by Alaska Medicaid to determine when to begin authorization for use of palivizumab preventive treatments for children at high risk for respiratory syncytial virus infections.

4) **High rates of pediatric dental caries in Alaska Native children (Oral Health)**
Dental caries among AN children represent a substantial and long-standing health disparity. Results of an AIP investigation concluded that pediatric dental caries are approximately five times more common in the region than for the general U.S. childhood population. AIP, along with two AN tribal health organizations, published a cost-effectiveness study of caries prevention strategies and found use of community water fluoridation, fluoride varnish, dental sealants, and other proven strategies would both reduce caries and save money for tribal health organizations. AIP also has developed methods to use electronic dental records to measure dental caries, in collaboration with a tribal health organization in southwest Alaska.

5) **Support for AN health research (Miscellaneous)**
AIP promotes research activities by tribal health organizations and supports AI/AN health researchers through in-kind efforts and technical assistance. AIP staff are planning the fifth Alaska Native Health Conference for September 2017 to highlight how research can improve health care and health.

*Publications/References:*


Hueffer, K., Parkinson, A. J., et al. (2013). Zoonotic infections in Alaska: Disease prevalence, potential impact of climate change and recommended actions for earlier disease detection, research, prevention and control. *Int J Circumpolar Health*, 72. doi: 10.3402/ijch.v72i0.19562 [Epub 2013, Feb 7].


HIV Care and Treatment of AI/ANs (Infectious Disease)

*Description:* CDC partnered with the Department of Public Health at North Dakota State University for this analysis. The analysis’s objective was to measure linkage to care, retention in care, and suppressed viral load among AI/ANs aged ≥13 years with diagnosed HIV infection. National HIV case surveillance data were used to measure linkage to care during 2013, retention in care during 2012, and suppressed viral load during 2012. Results indicate that in 2013, 74.1 percent of AI/ANs in the analysis were linked to care. At year-end 2012, 46.9 percent were retained in care, and 45.1 percent were virally suppressed. A lower percentage of females (41.3%) compared with males (46.5%) were virally suppressed. By age group, the lowest percentage of virally suppressed AI/ANs (37.5%) were aged 13–34 years. Investigators concluded that to improve individual health and to prevent HIV among AI/ANs, outcomes must improve, particularly for female AI/ANs and for AI/ANs aged 13–34 years. Screening for HIV infection in accordance with CDC’s testing recommendations can lead to improvements along the continuum of HIV care.


Natural History and Prevention of Viral Hepatitis Among Alaska Natives (Infectious Disease)

*Description:* Because Alaska was one of the first areas in the world to implement large-scale hepatitis A and B vaccine programs, CDC and ANTHC are collaborating to assess the long-term immunity from these vaccines and to determine whether booster doses are needed to maintain immunity. CDC continued to collaborate with ANTHC in a multi-year study that aims to improve efforts to prevent hepatitis A and B through vaccination and study interventions to reduce mortality and morbidity from chronic hepatitis B and C. Key efforts completed in FY 2016 included: 1) following for more than 30 years a cohort of persons vaccinated for hepatitis B in the early 1980s, including conducting a substudy that involves looking at cellular immunity to hepatitis B among vaccinated persons; 2) continued follow-up of persons vaccinated for hepatitis A as infants and children to determine duration of long-term immunity; 3) performing a retrospective review of acute hepatitis A cases and acute hepatitis B cases for vaccine history to estimate vaccine efficacy at various time periods after vaccination; and 4) treating patients from the hepatitis C and B cohorts and monitoring their response.


**Rocky Mountain Spotted Fever Prevention on Tribal Lands (Infectious Disease)**

*Description:* An ongoing epidemic of Rocky Mountain Spotted Fever (RMSF) affects tribal lands in Arizona, with nearly 350 cases and 21 deaths since 2003—a case-fatality rate 15 times that of the national rate. In 2012, CDC collaborated with the San Carlos Apache Tribe on an integrated RMSF prevention project, the RMSF Rodeo. This project demonstrated that placing long-acting tick collars on dogs reduces the number of ticks not only on dogs but also in the environment, which results in fewer cases of RMSF. Today, Arizona tribes are at various stages of implementing RMSF prevention programs modeled on the RMSF Rodeo. Since the epidemic’s peak in 2011, Arizona has experienced a nearly 80 percent reduction in the number of RMSF cases. While this successful intervention has generated considerable momentum, permanent resources have not yet been identified to support long-term tick control efforts. Some tribes have solicited IHS for one-time emergency funds as an interim solution; however, these funds cannot provide a sustainable solution to establish permanent change. The death of a 6-year-old child earlier this year is a strong reminder that RMSF is a persistent risk to Arizona tribal residents and requires continued and comprehensive control measures.

During FY 2016, CDC sent staff to provide technical assistance for RMSF prevention campaigns, conduct clinical education seminars at tribal and tertiary care facilities, and participate in an annual statewide meeting with state, tribal, and federal partners. To facilitate communication of RMSF prevention best practices, CDC regularly participates in monthly RMSF coalition calls with the Hopi, White Mountain Apache, and San Carlos Apache tribes, and in 2016 participated in the U.S. Environmental Protection Agency (EPA) Region 9 Tribal Operations Committee workshop on vector-borne diseases with HHS and tribal partners. CDC continues to provide funding through Epidemiology and Laboratory Capacity (ELC) grants to the Arizona Department of Health Services (ADHS). ADHS received approximately $110,000 in ELC funds to support RMSF prevention activities that included work with the tribes, plus an additional $10,000 in end-of-year program funds for field response and educational materials. Lastly, CDC provided more than $40,000 in supplies and additional educational materials directly to the White Mountain Apache Tribe, San Carlos Apache Tribe, Hopi Tribe, and Tohono O’odham Nation in FY 2016.

*Publications/References:*


**NATIONAL INSTITUTES OF HEALTH (NIH)**

The mission of NIH is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, to lengthen life, and to reduce illness and disability. The prevention, diagnosis, and treatment of diseases and conditions that disproportionately affect AI/AN communities remain an NIH priority. NIH continues to support activities aimed at conducting research relevant to health concerns within AI/AN populations, increasing representation of AI/AN individuals in the biomedical and behavioral research workforce, building capacity for biomedical research within AI/AN communities, developing tools to disseminate health information, and strengthening community-based participatory research (CBPR) approaches to develop culturally relevant and community-based interventions. This report provides selected highlights of AI/AN research accomplishments and activities at NIH during FY 2016.

**Research Projects and Findings:**

**Cherokee Nation and Cancer Center Collaboration on Cancer Disparities (Cancer)**

*Description:* American Indian tribal communities suffer disproportionately from both cancer and educational disparities. Smoking is a pressing public health concern for AI individuals and a major contributor to cancer disparities. The use of electronic cigarettes is evolving but has not been examined in AI smokers. The collaborative partnership between the Cherokee Nation and the Stephenson Cancer Center is working to increase research capacity to address tobacco-related cancer disparities, including investigating the effects of electronic cigarettes, in the Cherokee
The partnership includes support for pilot research studies and a training and education program for new investigators and students. In FY 2016, the partnership supported development of collaborative leadership and worked to add faculty from surrounding research-intensive universities. The collaborative leadership also began developing pilot research projects and supported a training program for undergraduate students.

**Tools to Address Prostate Cancer Disparities in Minority Men (Cancer)**

*Description*: Prostate cancer disproportionately affects African American and AI/AN men, and, once diagnosed, these groups are less likely to receive patient-centered prostate cancer care than non-Hispanic White men. This randomized clinical trial is testing two tools to help men make decisions about prostate cancer treatments. Prostate Choice is a tablet-based tool to help men tailor treatment choices based on disease risk, life expectancy, and current sexual and urinary function. Knowing Your Options is a website with comprehensive educational materials designed for use prior to visits with specialists. Each tool is being tested alone and in combination, and compared to usual care in improving men's knowledge of treatment options and cancer-related quality of life in White, African American, and AI/AN men.

**Developing an Advanced Care Planning Intervention for Alaska Natives and American Indians (Traditional Healing)**

*Description*: American Indian/Alaska Native communities are rarely involved in palliative care research, and AI/ANs rarely receive palliative care early in treatment when it could maximize benefits. This new project in FY 2016 is working to improve communication with AI/AN patients about palliative care using a culturally congruent, patient-centered strategy developed to improve advanced care planning communication in primary care settings.

**Native Voices: Native Peoples’ Concepts of Health and Illness Traveling Exhibition (Traditional Healing)**

*Description*: In FY 2016, NIH completed the first year of the “Native Voices: Native Concepts of Health and Illness” traveling exhibition at 104 sites around the U.S., including approximately 20 AI venues. The “Native Voices” traveling exhibition includes six interactive iPads with stands and six informative banners on the themes of Native healing, culture, community, tradition, and the provision of both traditional and western medical modalities to Native peoples. The iPads include several hundred video interview segments with AI, AN, and Native Hawaiian (NH) health practitioners and leaders; photos of Native healing and ceremonial objects and practices; and a timeline of key events and milestones in the history of Native peoples and their health and healing activities. During FY 2016, the traveling exhibition visited sites including: Leech Lake Tribal College, Fort Peck Community College, Comanche Nation College, Sac and Fox Nation, and Mid-America All-Indian Center. Exhibition venues were encouraged to reach out to Native students and communities to advertise the exhibit. One university conducted outreach by providing a mini-exhibition of a single “Native Voices” iPad and poster to each of the four tribal college libraries in New Mexico: Institute of American Indian Arts, Diné Navajo Tribal College, Navajo Technical University, and Southwestern Indian Polytechnic Institute. Online at: [https://www.nlm.nih.gov/nativevoices/](https://www.nlm.nih.gov/nativevoices/).
Workshop on the Value of Tribal Ecological Knowledge for Environmental Health and Biomedical Research (Traditional Healing and Environmental Health)

*Description:* In FY 2016, NIH led a workshop that was organized by representatives of seven tribal communities in coordination with NIH, IHS, the Smithsonian, and CDC. The goals of the workshop were to explore ways to improve trust in academic-tribal research; to identify methods for incorporating community-acquired data and local tribal ecological knowledge (TEK) into environmental health and biomedical research studies; to consider ethical approaches for tribal specific data collection; and to build capacity to respond to long-term and immediate disaster events. Tribal affiliations of speakers included Mohawk, Blackfeet, Cherokee, Chippewa, Confederated Salish and Kootenai, Cree, Crow, Gros Ventre, Hidatsa, Inupiaq, Mandan, Navajo, Pembina, St. Lawrence Island Yupik, Swinomish, and Taíno. Outcomes from this workshop included a presentation of the TEK workshop recommendations to the NIH Tribal Advisory Committee in February 2016 and an invited commentary submitted to Environmental Health Perspectives in July 2016. In FY 2017, a review article is expected, as well as planning for future workshops in 2017, to explore the impact of climate change on tribal elderly and other health disparate populations. Online at: [https://www.niehs.nih.gov/about/events/pastmtg/2015/tek_workshop/index.cfm](https://www.niehs.nih.gov/about/events/pastmtg/2015/tek_workshop/index.cfm).

Forum on Heart, Lung, and Sleep Disorders in AI/AN/NH Youth (Cardiovascular Disease)

*Description:* In August 2016, NIH and the IHS held a forum in Bethesda, Maryland, on heart, lung, and sleep (HLS) disorders in AI/AN/NH youth. AI/AN/NH communities are disproportionately exposed to and affected by health risk factors that contribute to mortality and morbidity due to cardiovascular, pulmonary, and sleep diseases. While evidence of epidemiological risk for HLS disorders exists for AI/AN/NH adults, little is known about these risks in AI/AN/NH youth. The forum examined HLS disorders in Native youth and developed recommendations for reducing HLS morbidity and mortality. The forum facilitated discussion of research gaps and identification of culturally appropriate interventions to improve health outcomes. Half of the expert speakers included in the forum were Native researchers and community members. The forum can be viewed at [https://videocast.nih.gov/](https://videocast.nih.gov/).

Multigenerational Household Intervention to Reduce Stroke and Cardiovascular Disease (Cardiovascular Disease)

*Description:* This project is determining the effectiveness of a household-based motivational counseling intervention to reduce stroke risk in 360 households of Strong Heart Family Study participants. The Strong Heart Family Study is a population-based cohort of 4,549 AI individuals from 12 tribes in Arizona, Oklahoma, North Dakota, and South Dakota. The intervention is examining household-level improvements in stroke risk score for adults over 45 years old, as well as changes in modifiable risk factors like smoking, physical activity, diet, and blood pressure for all participants. In FY 2016, recruitment was completed at two of the study’s three sites, and recruitment at the third site is expected in early FY 2017.
**Strong Heart Study (Cardiovascular Disease)**

*Description:* The Strong Heart Study is the largest multicenter longitudinal study of cardiovascular disease (CVD) among AI individuals. The goal of the study is to improve health in the areas of CVD and diabetes, with the use of genetics as one of the approaches. The partners in this study include 12 AI tribes and communities in three geographic areas: an area near Phoenix, Arizona; the southwestern area of Oklahoma; and western and central North and South Dakota. The initial data collection in this study has been completed and, in FY 2016, the study continues to monitor the morbidity and mortality of the original cohort (4,549 participants) and the family cohort (3,776 participants) over time. Participants who consented are now also being followed for the study of cancer, liver disease, and inflammation. Online at: [http://strongheart.ouhsc.edu/](http://strongheart.ouhsc.edu/).

*Publications/References:*


**Technology Innovations for Supporting Health in Alaska Native People (Cardiovascular Disease)**

*Description:* This study is evaluating the efficacy of two culturally tailored, technology-mediated, disease prevention interventions for supporting change in multiple risk behaviors in rural AN men and women. These interventions are informed by the research team's fieldwork over the past 6 years in rural Alaska and built on continued community partnerships with tribes. The interventions are tailored to ANs’ health needs and values to target five of the American Heart Association's seven Strategic Impact Goals for 2020. One intervention focuses on tobacco use and physical activity; the other focuses on hypertension and hypercholesterolemia. During FY 2016, the research team developed collaborative relationships with local clinic staff and many community groups. The project also identified best practices for recruitment in various communities and began recruitment for both interventions.

**Arsenic, Epigenetics, and Cardiovascular Disease in American Indians (Genome)**

*Description:* Arsenic exposure appears to play a role in cardiovascular disease development, and AI communities may be at particular risk. This research project is evaluating whether changes to genes that occur during a person’s lifetime (epigenetic modifications) can mediate the association of arsenic with cardiovascular disease in AI communities. This study may provide data to inform recommendations for arsenic levels in drinking water and food. In FY 2016, 3,574 DNA samples from AI individuals participating in the Strong Heart Study were identified for analysis.

*Publications/References:*


NIH Intensive Course in Genomics for Teachers (Genome)

Description: In August 2016, NIH held its annual Short Course in Genomics in Bethesda, Maryland. This 3-day course offered middle and high school teachers, community college faculty, and tribal college faculty the opportunity to hear lectures and receive teaching resources from leading NIH researchers, clinicians, and staff. Participants also discussed ways to incorporate genomics content into the classroom and participated in tours of NIH facilities. Topics included undiagnosed and rare diseases, cancer genomics, ethical issues in genomics research, and health disparities, among others. This year, seven tribal college faculty participated in the course. Following the 3-day course, a meeting was held with the tribal college faculty to discuss the possibility of an internship program for AI/AN students.

Caring Texts: A Strength-Based, Suicide Prevention Trial in Four Native Communities (Behavioral/Mental Health)

Description: Caring Texts is a strength-based suicide prevention study that responds to urgent AI/AN community suicide prevention needs. Caring Texts makes cultural adaptations to the evidence-based Caring Letters/Texts intervention for at-risk individuals in Native communities. In FY 2016, this project refined messages to increase relevance to local communities and identified local suicide prevention resources. The formal launch of the study will be held in FY 2017. This is the first randomized controlled trial of a suicide prevention program for AI/AN youth and young adults, addressing a major gap in the suicide prevention arena.

Chronic Pain Management Experiences and the Acceptability of Cognitive Behavioral Strategies Among American Indians and Alaska Natives (Behavioral/Mental Health)

Description: This research project is investigating chronic pain among AI/ANs. In FY 2016, focus groups were held with AI/AN individuals in the Southwest and Pacific Northwest U.S. The participants reported healthcare insufficiencies and a need for individually tailored, culturally appropriate approaches to chronic pain management. Participants also reported a need for better standard pain management, including the availability of appropriate allopathic pain management therapies, and complementary and alternative pain management strategies such as cognitive behavioral approaches. Similarities exist between some of these strategies and traditional AI/AN pain management techniques. This research forms an important foundation to better understand chronic pain experiences among AI/AN individuals and develop more effective chronic pain management strategies through cognitive behavioral health approaches.

Publications/References:


Clinical Trials Network American Indian and Alaska Native Interest Group (Behavioral/Mental Health)

Description: NIH conducts ongoing monthly meetings with a group of substance abuse treatment researchers focused on AI/AN populations. FY 2016 activities included a focus on further development of the AI/AN research portfolios related to substance abuse at NIH and strategies to assist AI/AN investigators to develop competitive grant applications.

Developing Effective Proximal Care to Prevent Rural Alaska Native Youth Suicide (Behavioral/Mental Health)

Description: The annual rate of death by suicide among AI/AN youth is significantly higher than that of other young Americans. The Promoting Community Conversations About Research to End Suicide (PC-CARES) study is working to reduce barriers for mental health help-seeking, and promote early interactions between providers and community members to better meet the needs of Native youth. This project takes a public health approach, aiming to shift from crisis intervention to selective outreach and community-integrated care of youth at risk for suicide. Native village counselors and non-Native clinicians are being trained to facilitate community outreach sessions that will bring together cultural and local knowledge and clinical expertise. This approach will promote knowledge exchange and relationship building among providers and community members. An ongoing regional suicide surveillance system will assess changes in the severity of risk and level of collaboration when youth are referred to services for suicidal behavior, before and after implementing PC-CARES, to measure the impact of this project.
Impact of Culturally Specific Danger Assessment on Safety, Mental Health, and Empowerment (Behavioral/Mental Health)

*Description:* Intimate partner violence (IPV) and homicides disproportionately affect immigrant, refugee, and Indigenous women. The Danger Assessment (DA) instrument was originally developed to assess risk of homicide, near lethality, and potentially lethal injury by an intimate partner. This study is developing and validating clinically useful, culturally specific versions of the DA to assess risk for severe IPV among immigrant, refugee, and Indigenous women. The study is also evaluating the impact of administering the culturally specific DAs with safety planning/referral tailored to the level of danger, women's preferences, and culture in promoting women's empowerment, safety, and mental health. In FY 2016, this project received Institutional Review Board (IRB) approval, developed qualitative interviews and focus group protocols, partnered with community organizations like the National Indigenous Women’s Resource Center to develop recruitment plans, developed resource documents for study participants, and began analyzing data from interviews and focus groups.

Indigenous Pathways of Substance Use and Mental Health Through Early Adulthood (Behavioral/Mental Health)

*Description:* This study addresses how early life patterns affect outcomes for alcohol and substance abuse disorders and mental health disorders among AI/AN young adults. Evidence from diverse tribal groups demonstrates early onset, high-frequency substance use with substantial rates of co-occurring mental disorders among Indigenous youth during adolescence. Cultural norms and contexts may translate into potentially unique developmental pathways, risks, and protective factors for substance use and mental health outcomes. The project links data from a panel study of Indigenous adolescents with 3 years of new data in early adulthood. In addition to exploring trajectories of these individuals, this study is working to examine culturally appropriate definitions of well-being in early adulthood and document the prevalence and predictors of these positive outcomes. The results of this project may inform the timing of interventions and the risk/protective factors targeted by prevention programs in Indigenous communities.

Preventing HIV Among American Indians Through the Treatment of PTSD and Substance Use (Behavioral/Mental Health)

*Description:* Untreated post-traumatic stress disorder (PTSD) elevates risk of alcohol and drug dependence, which in turn elevates risk of HIV sexual-risk behavior. Few HIV prevention interventions address risk factors such as trauma exposure, mental health, or substance use disorders. AI communities are at disproportionate risk for untreated PTSD, substance use disorder, and HIV risk. Building on an 8-year CBPR partnership in collaboration with a tribal Nation, this study is implementing a randomized comparative effectiveness trial to evaluate prevention of HIV sexual-risk behavior by directly addressing PTSD and/or substance use. Beginning in FY 2016, this research examines whether a PTSD-focused intervention or substance-use-focused intervention is most effective to prevent HIV sexual-risk behavior. Identifying evidence-based interventions that can be delivered in a time-efficient manner in resource-limited areas could significantly impact health in AI communities.
Reducing the Incidence of Suicide in Indigenous Groups – Strengths United Through Networks (RISING SUN) (Behavioral/Mental Health)

*Description:* The Reducing the Incidence of Suicide in Indigenous Groups – Strengths United Through Networks (RISING SUN) initiative is working to create a toolkit with outcomes and measures to help evaluate suicide prevention interventions among Indigenous communities across the Circumpolar North. The project is overseen by the Sustainable Development Working Group of the Arctic Council, an intergovernmental forum of the eight Arctic countries and six international organizations that represent Arctic Indigenous peoples. During the 2015–2017 United States Chairmanship of the Arctic Council, NIH serves as the technical lead on this project, in partnership with SAMHSA, CDC, and U.S. Department of State. The shared knowledge generated from RISING SUN is anticipated to aid health workers in better serving communities, and help policymakers measure progress, evaluate interventions, and identify challenges to implementation. During the chairmanship of the Arctic Council, the RISING SUN initiative has convened two regional workshops in which diverse stakeholders (including Alaska Native youth and tribal elders, advocates, clinicians, local community members, researchers, survivors, and federal and regional government officials) met to discuss approaches for improving mental well-being and reducing suicide in the Arctic. An NIH team has also led a consensus-building and priority-setting activity to identify high priority outcomes for suicide prevention efforts among Arctic Indigenous communities. Final reporting is expected to be completed by January 2017. Online at: https://www.nimh.nih.gov/about/organization/gmh/risingsun/index.shtml

Native Elder Research Center’s AI/AN Alzheimer’s Disease Research Network (Elder Health)

*Description:* The Resource Centers for Minority Aging Research (RCMAR) program is a national initiative to improve the health of minority Americans through scholarship, better public health interventions, and by fostering and mentoring the next generation of minority scholars. The Native Elder Research Center (NERC) is a RCMAR organization devoted to Native elder health. The NERC focuses on health and aging in older AI/AN populations and provides training for the next generation of diverse scholars through a variety of activities. Recently, NIH provided new funding to the NERC to support an Alzheimer’s Disease Research Network. This project unites NERC leadership with investigators studying dementia in the Strong Heart Study and affiliated Alzheimer’s disease centers. It also brings in investigators and data from research funded by AHRQ and the Patient-Centered Outcomes Research Institute, which is creating infrastructure to coordinate patient-level health data from tribal and IHS care settings. The Alzheimer’s Disease Research Network will recruit junior AI/AN investigators to develop Alzheimer’s disease-relevant research questions that can be pursued using this database and will support workgroups to guide subsequent analyses and resulting publications.

Forecasting Pneumococcal Serotype Frequencies to Develop Adult-Specific Vaccines (Infectious Disease)

*Description:* This research is working to develop a prediction model that identifies which pneumococcal serotypes will most likely emerge and to understand how these emerging
serotypes will impact disease rates in adults. Specimens from active surveillance for invasive pneumococcal disease in two different populations, the Navajo Nation and Denmark, are being utilized for validation of the prediction model and to compare post-vaccine serotype emergence patterns between two different populations with markedly different underlying risk factors for diseases and underlying pneumococcal disease and colonization dynamics.

*Publication/Reference:*

**Indigenous HIV/AIDS Research Training Program (Infectious Disease)**

*Description:* The Indigenous HIV/AIDS Research Training (IHART2) program brings together Native scholars capable of serving as principal investigators on NIH-funded, HIV/AIDS-related prevention and disparities research with Native populations. The program is based on the success of the Indigenous HIV/AIDS Research Training (IHART) program, the only Native-specific HIV/AIDS research training and mentorship program in the U.S. IHART2 extends the reach of the original IHART program from a sole focus on AI/AN to include NHs and Samoans.

**Centers of Excellence on Environmental Health Disparities Research (Environmental Health)**

*Description:* Two NIH/EPA-funded Centers of Excellence are focused on environmental health disparities among local tribal communities. The Arizona Center for Indigenous Environmental Health Research partners with tribal communities on environmental exposure research and builds Native community capacity to address environmental health inequities. In FY 2016, research at the center worked to characterize the extent of contamination in mutton, a culturally significant food, and plants and soils in the Navajo communities of Leupp and Cameron, Arizona. The center’s infrastructure is supporting pilot projects and the career development of young Native investigators and, in addition, provides research infrastructure for a time-sensitive Gold King Mine spill project. The New Mexico Center for Native American Environmental Health Equity Research examines and compares mechanisms of toxicity in mining waste metal mixtures across three tribal populations (Navajo, Hopi, and Sioux) exposed to contaminants from over 4,000 abandoned uranium mines. In FY 2016, the New Mexico Center strengthened partnerships between researchers and community groups and developed a lecture series and summer research training program on environmental health disparities.

*Publications/References:*

Environmental Health Information Partnership (Environmental Health)

Description: The Environmental Health Information Partnership (EnHIP) is a capacity-building collaboration of minority-serving academic institutions, including three tribal colleges and universities (TCUs), to reduce health disparities through the access, use, and delivery of environmental health information on campuses and in communities. The representatives of the 21 EnHIP schools held their annual meeting at Haskell Indian Nations University in Lawrence, Kansas, in March 2016; the theme was “Environmental Health Disparities: Challenges and Opportunities.” NIH funds annual information outreach projects proposed by member EnHIP schools. In FY 2016, NIH funded the University of Alaska, Anchorage’s project, Food Justice in the Arctic: Community Action to Raise Awareness About and Mitigate Food Waste in Anchorage Households by Empowering Elementary School Children. With the U.S. Department of Agriculture’s current Food Waste Innovation Zone initiative as the backdrop, this project partnered university seniors with five elementary school classrooms in the Anchorage School District to map household food systems’ sustainability and to better understand local food security. Using NIH’s library resources, students are working to innovatively address food waste at the community level.

Fish Consumption Advisory to Promote Anishinaabe Environmental Health Literacy (Environmental Health)

Description: The Anishinaabe-Ojibwe (Chippewa) have a long tradition of fishing culture. Due to concerns regarding exposure to persistent bioaccumulative toxics (PBTs) in the Upper Laurentian Great Lakes, many individuals have reduced their fish consumption to one-third of the recommended daily intake. The focus of this research is to reduce health risks associated with PBTs while maximizing the nutritional benefits associated with fish consumption. In FY 2016, this project developed interactive educational materials to promote healthy diets. The culturally tailored Smart Fish mobile phone application was developed to allow on-demand calculation of safe fish consumption rates based on the age, sex, and weight of the user. Smart Fish was evaluated by 24 adults, including a culturally embedded facilitator and tribal members, who were recruited by the Inter Tribal Council of Michigan. Outcomes from this focus group showed that most participants would use the application if it included: 1) information specific to Great Lakes fish, environmental contaminants, and environmental quality; and 2) Anishinaabe traditional knowledge and fisheries management. In June 2016, a webinar presentation on “The Complexity of Communicating Risk in the Context of Fish Consumption” was held by NIH, which included a discussion of the community-based research conducted with the Anishinaabe. Online at: http://www.niehs.nih.gov/research/supported/translational/peph/webinars/fish_consumption/.

Asthma Care Implementation Program in Four Corners (Infant/Child Health)

Description: The NIH Asthma Empowerment Program supports investigators planning a clinical trial to evaluate asthma care implementation programs (ACIP) for children at high risk of poor asthma outcomes. In FY 2016, one research project conducted a community needs assessment to ensure the proposed ACIP would meet the needs of Navajo children. This research built on community outreach efforts conducted in 2014, with over 50 healthcare providers and critical
access hospitals in the Four Corners region (including the Southern Ute, Ute Mountain Ute, and Navajo Nation reservations).

Collaborative Research Center for American Indian Health (Infant/Child Health)

Description: The Collaborative Research Center for American Indian Health (CRCAIH) brings together tribal communities and health researchers within South Dakota, North Dakota, and Minnesota. CRCAIH is building tribal research infrastructure and transdisciplinary research teams to improve AI health through examination of social and environmental influences on health. In FY 2016, one CRCAIH project focused on the use of and care provided to AI children in hospital emergency departments (ED). Scant available data suggest that AI children have increased ED usage compared to White children, increased rates of leaving the ED without receiving care, and possible differential care provided within the ED setting. This project is using a multidisciplinary research team to examine patterns of ED use and care for AI children. A survey of care providers at five hospitals measured implicit and explicit bias toward children and caregivers in the ED. This research found that 84 percent of clinicians had an implicit preference for White adults or children. In addition, the greater the number of AI children seen in the ED, the more clinicians saw AI children as “challenging” and caregivers as “less compliant.” Further research will examine how ED clinician biases influence healthcare or outcome disparities and what types of interventions can be created to reduce this disparity. Online at: http://www.crcaih.org/.

Community-Based Partnership Research Initiative in Reducing Infant Mortality in American Indian Activities (Infant/Child Health)

Description: This project is engaging AI communities in the design and implementation of an intervention to reduce the risk for Sudden Infant Death Syndrome (SIDS) and other related infant deaths due to unsafe sleep environments. According to the CDC, AI/AN babies have 1.6 times the infant mortality rate as non-Hispanic Whites and are 1.7 times as likely as non-Hispanic White babies to die from SIDS. An even greater disparity exists among Northern Plains tribes, where the SIDS rate is 6.4 times the overall U.S. SIDS rate. This research is investigating the influence of post-natal factors on infant mortality, including parental knowledge, cultural beliefs, and access to resources that inform decisionmaking on infant sleep environments. In FY 2016, the researchers analyzed data from focus groups involving pregnant adolescents, pregnant women, elder women, and fathers. The project has also established a community advisory board and completed cultural competency training.

Functional Outcomes for AI/AN Children with Traumatic Brain Injury (Infant/Child Health)

Description: American Indian/Alaska Native children have the highest traumatic brain injury (TBI)-related mortality in the U.S. TBI affects about 27.3 per 100,000 in the AI/AN population versus 18.4 per 100,000 for the total U.S. population. However, little is known about the AI/AN children who survive TBI. Through a retrospective national cohort study, researchers analyzed data from 114 AI/AN and 7,267 White children between 6 months to 18 years of age who received inpatient TBI rehabilitation services. At discharge, patients were assessed on overall
dependence or independence in mobility and cognitive ability. This research found that outcomes did not differ between AI/AN children and White children. In one small subgroup (children with loss of consciousness exceeding 24 hours), AI/AN children showed more issues with movement than White children. The findings also suggest that TBI outcomes for AI/AN children may have improved over the course of the study. AI/AN children who participated at the end of the study (2012) scored much higher on the cognitive test than AI/AN children at the beginning of the study (2002). This difference was not seen in White children.

Publication/Reference:

Healthy Native Babies Project (Infant/Child Health)

*Description*: The Healthy Native Babies Project is an extension of NIH’s national Safe to Sleep® public education campaign which is based on recommendations from the American Academy of Pediatrics. AI/AN infants are at increased risk of SIDS and other types of sudden, unexpected infant deaths. To help reduce these health disparities, NIH supports focused outreach in AI/AN communities to educate families, community health leaders, and other caregivers about safe infant sleep practices. In FY 2016, NIH supported trainings and exhibits at national and regional conferences of tribal members and provided free education materials to local community groups serving AI/AN populations. Online at: https://www.nichd.nih.gov/sts/news/videos/healthynative/Pages/default.aspx

Racial/Ethnic and Socioeconomic Differences Impact Disparities in Infant Mortality Rates (Infant/Child Health)

*Description*: This NIH-supported research examined differences in infant mortality rates between White, Black, Mexican, Puerto Rican, Asian, and AI mothers using secondary data analysis. Gaps in infant mortality between most groups were associated with economic factors, including maternal marital status, education, and age. These factors were also strong predictors of income and poverty, according to U.S. Census data. For Black and Puerto Rican infants, low birth weight appeared to impact likelihood of infant mortality. However, the gap between AI and White infants occurred almost exclusively at high birth weights.

*Publications/References:*

Economic Resources and Obesity (Obesity)

*Description*: Obesity is a leading cause of morbidity and mortality, and research has shown a strong correlation between fewer economic resources and increased obesity. This project
examines how the introduction of casino-style gaming to AI tribal lands in California may impact population health by increasing economic resources. By correlating existing geographically linked vital records and school fitness testing records with casino openings, the project is analyzing the impact of economic resources on excessive gestational weight gain, large-for-gestational-age infant birth weights, and child obesity for AI populations. This project may also gather formative, qualitative data to assess how economic resources stemming from casinos may affect weight-related health.

Publications/References:


Fatty Liver Disease Among American Indian Populations (Obesity)

*Description:* Fatty liver disease (FLD), hepatic steatosis, and fibrosis often lead to cirrhosis of the liver and liver cancer. Among AIs, chronic liver disease is the fifth leading cause of death. Risk factors include obesity, insulin resistance, alcohol consumption, and viral hepatitis, but there is little data available on the individual and combined influence of each of these factors on the development of fatty liver and its progression to fibrosis. This new study in FY 2016 is working to identify associations and longitudinal determinants of hepatic steatosis and fibrosis in AI participants of the Strong Heart Study. This research may propose a mechanism that leads to the increased rate of chronic liver disease seen in many AI communities and identify important targets of intervention and prevention in populations with high rates of metabolic disease.

Partnerships to Prevent Childhood Obesity on the Flathead Indian Reservation (Obesity)

*Description:* Approximately 57 percent of the children and adolescents living on five rural Indian reservations in Montana are overweight or obese, and no obesity prevention trial, to date, has been successful in preventing childhood obesity in this high-risk population. This project capitalizes on the dual government and healthcare services systems on the Flathead Indian Reservation to build capacity and develop partnerships aimed at developing and testing culturally appropriate intervention strategies that will achieve sustainable childhood obesity reduction. A shared vision, community outreach, and education are key components of the project. In FY 2016, community readiness interviews were completed in five communities on the Flathead Reservation. The results of this study will provide action steps, partnerships, communication between communities, and evaluation methods for similar projects.

Contingency Management Treatment of Alcohol Abuse in American Indian People (Substance Related Disease: Tobacco, Alcohol, Drug)

*Description:* Alcohol dependence and consequences disproportionately affect AI/ANs, however few evidence-based treatments are available in Native communities. This project is evaluating a culturally acceptable contingency management intervention, a behavioral treatment that is highly effective for substance abuse, in 400 AI/AN participants with alcohol dependence. This sustainable and portable intervention may have considerable public health impact for the many AI/ANs who experience alcohol-related health disparities.

*Publications/References:*

Intertribal Talking Circle for the Prevention of Substance Abuse in Native Youth (Substance Related Disease: Tobacco, Alcohol, Drug)

*Description:* This project evaluates an after-school substance abuse prevention intervention, the Intertribal Talking Circle (ITC), aimed at 6th-grade AI youth in three AI communities:
Ojibwe/Chippewa in Minnesota, Choctaw in Oklahoma, and Lumbee in North Carolina. A CBPR approach was used to culturally and technologically adapt the ITC. The project is evaluating how effective the ITC is in increasing AI youth self-reliance while decreasing AI youth substance use. In FY 2016, 110 AI students participated in the program and surveys of students were collected at 6 and 12 months. An adult training program will also train tribal personnel from the three regional tribes on how to implement the ITC intervention as a tribal program to support sustainability of this intervention.

**Motivational Interviewing and Culture for Urban American Indian Youth (Substance Related Disease: Tobacco, Alcohol, Drug)**

*Description:* This project is developing a new alcohol and other drug (AOD) intervention that operates at both the individual and community levels to reduce substance use among urban AI/AN youth. At the individual level, tradition-based healing is integrated with motivational interviewing. The intervention at the community level integrates discussion of AOD use and AOD prevention among AI/AN youth into existing community wellness gatherings. During FY 2016, the project surveyed youth in Northern and Southern California and held bimonthly community wellness gatherings. These gatherings were open to the entire AI/AN community.

*Publications/References:*


**Qungasvik (Toolbox): Prevention of Alcohol/Suicide Risk in Alaska Native Youth (Substance Related Disease: Tobacco, Alcohol, Drug)**

*Description:* Alcohol use disorder and suicide are interrelated public health issues among AN youth. The overarching goal of this project is to test the effectiveness of the Qungasvik (a Yup'ik word meaning “toolbox”) intervention, aimed at reducing the incidence of alcohol use disorder and suicide in Yup'ik youth. To date, key outcomes include implementation of community and tribal leadership consultative models, an ethics decision on assessments of suicidal ideation in the aftermath of a cluster of youth suicides, development of social network measures, completion of a digital Qungasvik intervention model, and production of several videos for dissemination of the Qungasvik model. The Qungasvik intervention enhances protective factors through activities grounded in Yup’ik cultural practices and values, and helps communities identify effective prevention strategies for suicide and alcohol use disorder risk among youth.

*Publications/References:*


**Strategies for Preventing Underage Drinking and Other Substance Use in American Indian Tribal Communities (Substance Related Disease: Tobacco, Alcohol, Drug)**

*Description:* The project consists of individually and community-based interventions designed to address underage alcohol and other drug use and abuse among AI youth residing in and nearby the nine contiguous Indian reservations in rural San Diego County. This community-based environmental prevention program is focused on reducing underage access to alcohol and tobacco through a reward and reminder program for off-premise retail clerks and tailoring, implementing, and evaluating a community mobilization and awareness intervention aimed at reducing the social availability of alcohol and other drugs from adults, including family members. The individual level component is a culturally tailored MI brief intervention to reduce demand for alcohol and other drugs among AI youth 13–20 years of age.

*Publications/References:*


**Substance Abuse Prevention Campaign for American Indian Youth (Substance Related Disease: Tobacco, Alcohol, Drug)**

*Description:* This study is adapting an existing substance abuse prevention campaign, Be Under Your Own Influence, to incorporate campaign messages that are culturally acceptable with AI populations. In FY 2016, significant input has been gathered from tribal members, including youth, teachers, parents, elders, and other community members through community advisory meetings and youth focus groups. When this project is complete, the goal is to provide a complete toolkit that can be shared with other reservation-based AI youth and schools. This toolkit will include components that can incorporate flexibility and creativity in their delivery in each new setting.
Tribal Colleges and Universities Behavior Wellness Study (Substance Related Disease: Tobacco, Alcohol, Drug)

Description: The TCU-BeWell project has developed and is implementing a culturally contextualized version of an alcohol prevention intervention at TCUs. This research is examining whether a culturally contextualized adaptation of the screening and brief intervention, developed in conjunction with TCU partners, will have better results in reducing hazardous or harmful drinking and alcohol-related negative consequences, as well as improve academic outcomes. It is anticipated that the intervention will have a significantly greater effect at TCUs that also receive a policy intervention to move them from a zero-tolerance to harm-reduction stances and improve capacity to integrate services for improved referral and treatment for high-risk TCU students. This project has surveyed 3,175 participants, providing epidemiological data on the largest sample of Native college-aged individuals to date. In FY 2016, longitudinal surveys at 3 and 6 months were administered and campus exhibits were introduced at three sites.

Dental Care Delivery System Intervention in Alaska Native Communities (Oral Health)

Description: This multilevel intervention study is incorporating evidence-based dental treatments into routine care delivered by a dental team to the AN population served by the Southeast Alaska Regional Health Consortium. The long-term goal is to design, implement, and evaluate a series of dental care delivery system changes to improve oral health while reducing costs.

Oral Health Status in Native Head Start Children (Oral Health)

Description: Results from a clinical trial being conducted by the NIH-supported Center for Native Oral Health Research show that poor oral health remains a major problem for AI/AN children—in particular, severe dental decay called early childhood caries. This clinical trial used community oral health specialists from a Southwest American Indian reservation to deliver health promotion and dental disease prevention services to children up to age 5 enrolled at the tribal Head Start programs. During enrollment in the trial, more than 85 percent of the children in the study had decay, and decay was almost universal 3 years later. The trial did not find any benefit for the prevention program, possibly because dental disease was too severe and established by the time the children in the study began attending Head Start.

Publications/References:


Streptococcus Mutans and Dental Caries Among American Indian Children (Oral Health)

Description: American Indian children suffer from the highest levels of severe early childhood caries in the U.S. Children typically acquire the caries-causing bacteria, Streptococcus mutans (S. mutans), from their mothers, and early acquisition is often associated with higher levels of tooth decay. This NIH-funded study followed babies from birth to 5 years of age and examined in detail how S. mutans is transmitted from mother to child in a Northern Plains tribal community. Results from three studies demonstrated that S. mutans colonization occurred by 16 months of age in 58 percent of the children and was associated with more severe caries. The data also showed that AI children’s primary teeth erupt earlier than children in other health disparities populations. By 36 months of age, 80 percent of the children had dental decay that needed to be treated. The study identified several significant risk factors for dental decay in these children, including consuming beverages with added sugar, younger maternal age, greater number of people in the household, and higher maternal level of dental disease. Early tooth eruption may contribute to the higher caries rates of children in the study and suggests the need for early interventions to prevent severe early childhood caries.

Publications/References:

Center for American Indian and Alaska Native Diabetes Translational Research (Diabetes)

Description: American Indian/Alaska Native individuals are at greater risk of becoming diabetic than any other segment of the U.S. population, suffer high rates of serious complications due to diabetes, and die prematurely as a consequence. The Center for American Indian and Alaska Native Diabetes Translational Research (CAIANDTR) is working to increase scientific
knowledge about the types of diabetes prevention and management interventions that have been proven effective in both clinical and community settings, with the goal of improving the diabetes-related health of AI/AN individuals. In FY 2016, CAIANDTR successfully re-competed for funding. Recent center-supported findings include the development of a risk-scoring tool to predict the likelihood that participants will continue in a diabetes lifestyle intervention and the study of psychosocial predictors of weight loss among AI/AN participants in a diabetes prevention project. Online at: http://www.ucdenver.edu/academics/colleges/PublicHealth/research/centers/CAIANH/cdtr/Pages/CAIANDTR.aspx

Publications/References:


Family Study on Arsenic Exposure, Genetic Determinants, and Diabetes Risk (Diabetes)

Description: This project is investigating the role of arsenic exposure and metabolism, and the interaction with genes in the development of diabetes in AI communities. In FY 2016, data gathered suggest that rural Native communities may be disproportionately exposed to metals through drinking water and food. These findings highlight the importance of preventing metal exposure in drinking water in Native communities, which often rely on private wells that are not required to comply with arsenic standards set forth by the EPA.

Publications/References:
Olmedo, P., Grau-Perez, M., et al. (2017 Feb). Dietary determinants of cadmium exposure in the...


Genetic Trait in Pima Indians Linked to Increased Birth Weight and Elevated Risk for Type 2 Diabetes (Diabetes)

Description: A genetic analysis in Pima Indians has identified a rare mutation linked to elevated birth weight that is later associated with higher risk of type 2 diabetes. Pima Indians have among the highest rates of diabetes in the world. To understand the unique genetic risk factors among the Pima and to find ways to help alleviate this health disparity, NIH researchers examined the DNA sequences in and around a pair of genes thought to be involved in type 2 diabetes pathogenesis in 7,710 Pima study volunteers. They found that 3.3 percent of the participants had a previously uncharacterized variation in the gene ABCC8, which encodes a protein with a key role in regulating insulin secretion. The resulting genetic change, designated R1420H, was similar to known mutations that inactivate ABCC8 and lead to a decline in insulin production, typically followed by type 2 diabetes.

Publication/Reference:

Washington University Center for Diabetes Translation Research (Diabetes)

Description: This center emphasizes transdisciplinary collaborations, catalyzes new ideas, and supports investigators through research cores, including the Research Partnerships with American Indian/Alaska Native Communities Core through the National Congress of American Indians (NCAI), which increases the capacity of researchers to engage in translational research with AI/AN communities. In FY 2016, the center successfully re-competed for funding. Recent center-supported research found that successful treatment with a diabetes drug (HbA1c less than 6.3 percent) was sufficient to predict whether blood glucose would remain in good control for at least 48 months in a young person with type 2 diabetes. This clinical trial included a significant number of AI/AN participants and may help to inform treatment options for AI/AN youth with type 2 diabetes. Online at: http://cdtr.wustl.edu/index.html.
Enhancing the Diversity of the NIH-Funded Workforce (Workforce Development)

Description: The NIH awarded nearly $46 million in FY 2016 to invest in innovative approaches to training and mentoring researchers, including those from backgrounds underrepresented in biomedical sciences. These awards are part of a 5-year program to support more than 50 awardees and partnering institutions in establishing a national consortium to develop, implement, and evaluate approaches to encourage individuals to pursue and persist in biomedical research careers. Collectively, these awards aim to enhance representation of people from diverse groups, including AI/ANs, in the NIH-funded workforce. Online at: http://commonfund.nih.gov/diversity/overview.

This consortium is composed of three integrated initiatives:

- **Building Infrastructure Leading to Diversity** – Building Infrastructure Leading to Diversity (BUILD) is a grant system incorporating interventions in research training at the student, faculty, and institutional levels. Through a set of 10 experimental training awards, BUILD programs prepare students to become future contributors to the NIH-funded research enterprise. Institutions are encouraged to incorporate additional innovative methods to engage and prepare students for success, including those who might otherwise not choose biomedical research careers. The BUILD awardees work with multiple partnering institutions to provide robust research training and mentorship experiences for students and faculty. Overall, BUILD sites and their partner institutions include 2 TCUs and 12 American Indian Alaska Native Serving Institutions.

- **National Research Mentoring Network** – The National Research Mentoring Network (NRMN) has developed a nationwide network of mentors and mentees spanning all biomedical disciplines, and will continue developing best practices for mentoring, mentor training, and professional development opportunities for mentees and mentors. The NRMN has partnerships with organizations that serve AI/AN populations, including: the Society for the Advancement of Chicanos and Native Americans in Science, American Indian Science and Engineering Society, Association of American Indian Physicians, Northern Arizona University Center for American Indian Resiliency, Washington State University Behavioral Health Collaborative in Rural American Indian Communities, and the University of Washington Regional Native American Community Networks Program.

- **Coordination and Evaluation Center** – The Coordination and Evaluation Center (CEC) coordinates consortium-wide activities and assesses the efficacy of the training and mentoring approaches developed by the BUILD and NRMN awardees. Given the wide range of geographical, racial, ethnic, linguistic, and cultural diversity represented by the BUILD and NRMN awardees and their partners, the CEC allows for the rigorous analysis of which interventions are most effective in different contexts and for which populations. These findings will have implications for recruiting, training, and mentoring of diverse groups nationwide, including AI/ANs.
Increasing AI/AN Research Engagement Through a Culturally Adapted Ethics Training (Workforce Development)

Description: Many Native communities do not participate in the design, implementation, and dissemination of federally funded research as much as other racial and ethnic groups. This project is working to address a significant barrier to community engaged research in AI/AN communities—the absence of culturally appropriate human subject research ethics education for community partners. By developing an ethics training curriculum for Indian Country, this project aims to help remove barriers to the participation of AI/AN communities in biomedical research. In FY 2016, the research team adapted a pre-existing training curriculum to include input from an expert panel; completed a beta test to assess the curriculum, knowledge questions, and outcome measures; revised materials based on feedback and psychometric analyses; and obtained IRB approval for a national randomized controlled trial.

Institutional Development Award (Workforce Development)

Description: The Institutional Development Award (IDeA) program broadens the geographic distribution of NIH funding for biomedical research. The program fosters health-related research and enhances the competitiveness of investigators at institutions located in states in which the aggregate success rate for applications to NIH has historically been low. The program also serves unique populations, such as rural and medically underserved communities in these states. The IDeA program consists of IDeA Networks of Biomedical Research Excellence (INBRE), IDeA Program Infrastructure for Clinical and Translational Research (IDeA-CTR), and Centers of Biomedical Research Excellence. Grants supported by the IDeA program work with tribal nations and colleges on a variety of projects. For example, INBRE grants in Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, and South Dakota work with 16 different TCUs on building research capacity and infrastructure for projects ranging from building STEM (science, technology, engineering, and math) education programs at the TCU to research on West Nile virus infection frequencies. The IDeA program also supports a Center of Biomedical Research Excellence in Montana focused on building research capacity and conducting research in Montana AI and rural communities. In FY 2016, the IDeA program supported two new IDeA-CTRs with partnerships with tribes and tribal organizations including the Cherokee Nation, Chickasaw Nation, Choctaw Nation, Central Oklahoma American Indian Health Council, Oklahoma Inner-City Tribal Health Board, Blackfeet Community College, Alaska Native Tribal Health Consortium, and Southcentral Foundation.

Native American Research Centers for Health Principal Investigator Meeting (Workforce Development)

Description: The NIH, in collaboration with IHS, held the annual NARCH Program Principal Investigator (PI) meeting in October 2016 in Long Beach, California. The purpose of the meeting was to provide updates on the NARCH-funded research projects, and student and faculty development projects with a secondary goal of creating collaborative efforts across NARCH programs. The NARCH PIs were also provided information on current NIH funding opportunities applicable to the AI/AN communities, changes in NARCH administration oversight, and NIH intramural research opportunities for students and young investigators.
NIH Visit Week (Workforce Development)

*Description:* The NIH Visit Week exposes AI/AN students to biomedical research and health career opportunities. The 2016 NIH Visit Week program took place during the week of July 11, with 10 students attending from tribal colleges, undergraduate institutions, and research-intensive universities. The students participated in science career workshops, hands-on laboratory activities, as well as networking seminars and events. Students were able to network with and be mentored by NIH staff, including program administration staff, scientific researchers, and clinical research staff. The students also took part in a 1-day NIH graduate student event, where they were given the opportunity to talk with over 200 different colleges and universities regarding graduate and professional schools. Visit Week included lunch with members of the NIH chapter of the Society for Advancement of Chicanos and Native Americans in Science as well as the Trans-NIH AI/AN Research special interest group.

Science Education Partnership Award (Workforce Development)

*Description:* The Science Education Partnership Award (SEPA) program was established in 1991 to encourage underrepresented minorities and students from rural communities, including AI/ANs, to consider careers in basic or clinical research. SEPA programs are also designed to improve life science literacy across the U.S. SEPA supports the development of STEM resources for pre-K to grade 12 students and teachers. Many SEPA-funded projects target health disparities. A SEPA project in Nebraska provides comics, games, and activities about the world of viruses and the biology of humans to K-8 students in 10 tribal schools as well as online (http://worldofviruses.unl.edu). Salish Kootenai College in Montana has received SEPA funding to provide professional development training to teachers, enhancing the science education that students receive with the intention of increasing the number of AI/AN students interested in pursuing careers in biomedical research.

Short-Term Research Experience Program for Underrepresented Persons (Workforce Development)

*Description:* The Short-Term Research Experience Program for Underrepresented Persons (STEP-UP) program provides high school and undergraduate students with the opportunity to participate in cutting-edge research, in both biomedical and social science, over the summer. At the end of the summer, students travel to the campus of NIH to present their research findings. A key component of the program is that the students participate in research projects near where they live, so there is still an active connection between the student, the community, and research community. AI/AN individuals are underrepresented in the biomedical research workforce. To address this issue, the STEP-UP program actively recruits AI/AN students to participate in summer research, with a focus on diabetes, digestive, and kidney disease areas. STEP-UP funds a coordinating center in the southwestern U.S. that is focused on recruitment, outreach, and forging connections with tribes throughout the country. In FY 2016, 11 AI/AN students participated in the summer research program. For example, one student examined the impact of food practices on health in the Menominee Indian Nation. Additionally, several of the research project abstracts were recently published on an online journal, *Health Disparities Research and*
Practice, providing an opportunity for the students to highlight their work on a national level. Online at: http://digitalscholarship.unlv.edu/jhdrp/.

Publications/References:


**Summer Program in the Neurological Sciences (Workforce Development)**

*Description*: The annual National Institute of Neurological Disorders and Stroke (NINDS) Summer Program in the Neurological Sciences provides academically talented and diverse high school, undergraduate, graduate, and medical students with a stimulating and rewarding research experience and encourages the pursuit of advanced education and future careers in neurological science research. This program targets students from diverse backgrounds and has achieved substantial success recruiting AI/AN students by developing relationships with schools and tribal councils, and through extended outreach and visits to areas densely populated by Native students. The director of the program has established relationships with Red Cloud High School on the Pine Ridge Reservation in South Dakota and St. Michael Indian High School, a school serving the Navajo population in Arizona and New Mexico. The institute hosted 16 Native students during the 2016 program, including eight Oglala Sioux, two Rosebud Sioux Lakota, four Yakama, one student from the Cedarville Band of Piscataway, and one student from the Pauma Band of Luiseno. Students from the class of 2016 were also involved in activities with the NIH Native Scholars group, who provided cultural support, research poster workshops, and weekly tutoring in college math and chemistry. In addition, the students were invited to participate in the 2016 National UNITY Conference. Two students met with Secretary Burwell to discuss issues and challenges related to outreach to Native communities. Since 2007, NIH has supported 46 awards for AI/AN students (some students have gone through the program twice), and 14 students have gone on to present their data at scientific meetings. Most of the AI/AN participants have been tracked; of those, all but five remain in scientific fields. NIH plans to continue this program and the associated outreach with AI/AN communities. In addition, NIH continues efforts to maintain relationships with the alumni in order to facilitate their potential

Trans-NIH Conference for Native Youth Interested in Biomedical Research Careers (Workforce Development)

Description: On July 7–8, 2016, NIH hosted a conference for the National Native American Youth Initiative in Biomedical Research on the NIH campus in Bethesda, Maryland, in partnership with OMH. The conference serves as an opportunity to showcase and introduce biomedical research to high school students who come from communities that are most likely to be underrepresented in biomedical careers, such as those from AI/AN communities. NIH partnered with the Association of American Indian Physicians for this initiative to identify 25 students between the ages of 16–18 from across the U.S. who have an interest in pursuing a career in health care. Among other activities, students took a tour of NIH’s Vaccine Research Center and attended a lecture on the NIH response to the Zika virus outbreak.

Worker Training Program (Workforce Development)

Description: The Worker Training Program (WTP) funds a national network of over 100 nonprofit safety and health training organizations to provide training to workers who handle hazardous materials, hazardous waste, or are involved in emergency response to hazardous materials incidents. Through its awardees, the WTP has trained over 1,500 AI individuals, including tribal employees of natural resource, law enforcement, emergency medical, fire service, and public works agencies. In FY 2016, the Alabama Fire College (AFC) Workplace Safety Training Program along with Native American Fish and Wildlife Society and the United South and Eastern Tribes (USET) worked to promote training to tribal emergency response personnel. During this period, AFC trained approximately 464 AIs from 31 tribes through direct and peer training activities in hazmat operations and responder training, clandestine lab awareness, and incident command. NIH also funded the Western Region Universities Consortium (WRUC). WRUC provided training and technical assistance, in conjunction with the EPA Region 10 Tribal Office, on emergency response, hazardous materials operations, transport, and hazard communication. One example of this collaboration is training provided in remote Alaskan villages on topics such as general construction safety, confined space entry and rescue, and several levels of hazardous waste operations. Approximately 500 workers from the Navajo Nation, Hopi Nation, White Mountain Apache Tribe, Lummi Nation, Kerawak Native Corporation, Native Village of White Mountain, Native Village of Elim, Native Village of St. Michaels, Tribal Solid Waste Advisory Network, Tribes in Washington (Skokomish, Colville), Oregon (Confederated Tribes of Warm Springs), and Idaho (Nez Perce) received training. Additional information about the NIEHS WTP is available online at: http://www.niehs.nih.gov/careers/hazmat/index.cfm.

American Indian, Alaska Native, and Native Hawaiian 2016 Health Planners (Outreach)

Description: As part of an NIH National Multicultural Outreach Initiative (http://www.niams.nih.gov/multicultural/), a set of 2016 health planners was developed and distributed, including a planner tailored for AI/AN populations and NHs. NIH partnered with the
IHS, the Administration on Aging/Administration for Community Living, other HHS agencies, and tribal partners to distribute these culturally tailored planners to Native communities nationwide.

**American Indian Mid-Atlantic Powwow Outreach Program (Outreach)**

*Description:* In FY 2016, NIH completed its fifteenth year of outreach to AI powwows in the Mid-Atlantic region. The powwow program provides free NIH health information to tribal communities sponsoring or attending powwows, primarily in the states of Maryland, Virginia, Pennsylvania, New Jersey, Delaware, and North Carolina. Exhibits at powwows allow NIH to interact with the community and demonstrate how to use and access the National Library of Medicine’s free resources for AI/AN individuals. Part of the mission of the powwow program is to share resources and information to live a healthier lifestyle. NIH staff review the full calendar of powwows scheduled for each powwow season and select a balanced geographic mix of about a dozen powwows. The FY 2016 powwows included: Healing of All Nations Powwow; Baltimore Indian Center Annual Powwow; Haliwa-Saponi Powwow; Ontelaunee Park Annual Intertribal Powwow; Lumbee Indian Annual Spring Powwow; Howard County American Indian Powwow; Nanticoke Lenni-Lenape Tribal Powwow; Annual Roasting Ears of Corn Festival; Kipona Native American Festival; Nanticoke Indian Powwow; Lawilowan American Indian Muddy Run Powwow; and Chickahominy Tribe Fall Powwow. More information about the powwow program can be found online at: [https://infocus.nlm.nih.gov/2016/10/27/experiencing-nlm-outreach-powwows-2/](https://infocus.nlm.nih.gov/2016/10/27/experiencing-nlm-outreach-powwows-2/)

**Chickasaw Health Information Center (Outreach)**

*Description:* The Chickasaw Nation, ComputerCraft, Inc., and NIH have collaborated to develop the Chickasaw Health Information Center (CHIC). This information center is designed to provide convenient and quality health information to members of its community as one way to help patients learn to improve their overall health and well-being. Another important objective of CHIC is to increase the awareness of NIH health information resources among the Chickasaw community. The CHIC website is hosted and managed by ComputerCraft, a company owned by members of the Chickasaw Nation. CHIC information kiosks were introduced in the Chickasaw Nation health clinics in Ardmore and Tishomingo in FY 2016. These resources are free to use and can help individuals find reliable answers to their health questions online while they wait at the Chickasaw Nation Medical Center or clinics, or in the privacy of their own homes. CHIC is located in the Town Hall of the Chickasaw Nation Medical Center in Ada, Oklahoma. Online at: [www.chicresources.net](http://www.chicresources.net).

**Digital Storytelling Workshop (Outreach)**

*Description:* In FY 2016, NIH supported a digital storytelling workshop conducted by nDigiDreams, a Native-owned organization, in partnership with the American Indian Community House in New York, New York. The 4-day workshop taught urban Native community members and staff of the Community House to visually and orally document their “lived experience.” These health and wellness stories will be shared with the community during a digital storytelling festival in FY 2017.
Trans-NIH American Indian and Alaska Native Health Communications and Information Work Group (Outreach)

*Description*: The Trans-NIH AI/AN Health Communications and Information Work Group, in partnership with IHS and the Administration on Aging/Administration for Community Living (ACL), produced an electronic newsletter, *Honoring Health: Resources for American Indians and Alaska Natives*, to increase awareness of health information and resources from NIH and other federal agencies. The e-newsletter aims to reach IHS community health workers and ACL Title VI grantees, as well as AI/AN communities, and it is publicly available online. Each issue features a different health topic of interest to Native communities. The work group issued three newsletters in FY 2016 on diabetes, mental health, and dental health. Online at: https://www.niams.nih.gov/News_and_Events/AIAN_Honoring_Health/.

United South and Eastern Tribes Women’s Health Project (Outreach)

*Description*: In FY 2016, NIH continued its partnership with the Tribal Epidemiology Center, USET. USET is a strategic partner with NIH in increasing the awareness and utilization NIH health resources and addressing long-term goals of improving health literacy, informing citizens, and reducing health disparities among vulnerable populations. NIH funded an information dissemination and health literacy outreach project targeting women as the main information gatherer and health decision influencer in the family. The Indian Peer-to-Peer Family Curriculum project incorporates traditional parenting methods to improve pre-and post-natal care and strengthen the maternal role in the tribal community. The Florida State University Home Visiting Curriculum, a nationally recognized, research-based, practice-informed curriculum, was adapted to support traditional AI/AN parenting styles. USET worked with NIH to develop training materials, online search strategies, and demonstrations of NIH online resources. Support groups plan to incorporate use of NIH online training materials to teach mothers and other family members how to access important information such as drug interactions, medication side effects, and various drug categories to ensure safe medication use while pregnant, nursing, and/or lactating.

Food Resource Equity and Sustainability for Health (Miscellaneous)

*Description*: American Indian individuals in Oklahoma are more likely to be food-insecure than their non-Hispanic White counterparts and have a higher prevalence of obesity, cardiovascular disease, and diabetes. Many existing diet- and obesity-related health promotion interventions with AI/AN populations have emphasized behavioral change. Less work has emphasized structural changes to the local food environment. This project is evaluating the efficacy of a community gardening intervention on fruit and vegetable consumption, food insecurity, and health outcomes of body mass index and blood pressure in families living on the Osage Nation reservation in Oklahoma. The study is guided by the principles of CBPR and the Indigenous food sovereignty movement, which seeks to revitalize seasonal growing and gathering practices and reverse unhealthy eating caused by the historical loss of tribal lands.
Native American Research Centers for Health (Miscellaneous)

Description: The NARCH program is a trans-NIH collaboration with the IHS that supports collaborations between federally recognized AI/AN tribes or tribal organizations and research-intensive academic institutions that support health research projects prioritized by tribal communities. The new NARCH funding opportunity announcement was issued in May 2016 and encourages competitive research linked to the health priorities of AI/AN organizations and health disparities; increasing the capacity of both AI/AN organizations and research-intensive institutions to reduce distrust by AI/AN communities and people toward research; and developing a cadre of AI/AN scientists and health professionals engaged in biomedical, clinical, behavioral, and health services research who will be competitive in securing NIH funding. In FY 2016, NIH and IHS supported 56 NARCH projects totaling $10.2 million dollars. NARCH projects range from STEM education to research on diabetes protocols, alcohol abstinence, childhood trauma, and effects of environmental exposures. Online at: https://www.nigms.nih.gov/Research/CRCB/NARCH/Pages/default.aspx.

Partnership to Establish Tribally Owned and Operated Biobank (Miscellaneous)

Description: As part of the Stanford Precision Health for Ethnic and Racial Equality (SPHERE) Center, NIH is supporting the development of a tribally owned and operated biobank in the Northern Plains region, in partnership with the Cheyenne River Sioux Tribe. Beginning in FY 2016, this project is working to serve as a conduit for education on the benefits of precision medicine and big data science in the Lakota Sioux community. The SPHERE Center is also supporting research looking for rheumatoid arthritis biomarkers among members of the Lakota Sioux.

Tó Litso, the Water Is Yellow: Investigating Short-Term Exposure and Risk Perception of Navajo Communities to the Gold King Mine Toxic Spill (Miscellaneous)

Description: In FY 2016, NIH supported research on the Gold King Mine toxic spill to investigate the short-term exposure effects of lead and arsenic in the water, in order to understand the potential long-term health risks from the Gold King Mine spill and develop mitigation strategies. This research is also evaluating the risk perception of people in Navajo communities dependent on the San Juan River. On August 5, 2015, three million gallons of acid mine drainage was accidently released from the Gold King Mine, eventually reaching the San Juan River. The environmental contamination from mine spills severely impacts Native communities due to both subsistence livelihoods and spiritual and cultural beliefs connected to the natural environment. This results in unique exposure pathways and may cause greater health risks. In FY 2016, preliminary results were disseminated from analysis of the Gold King Mine data to the Navajo Nation EPA, the U.S. EPA Region 9 staff, and to the Navajo Nation.

Trans-NIH American Indian/Alaska Native/Native Hawaiian Research Interest Group (Miscellaneous)

Description: The Trans-NIH American Indian/Alaska Native/Native Hawaiian Research Interest Group convened on a monthly basis to share current research priorities and innovative ideas for
facilitating CBPR, as well as highlight and discuss challenges with advancing research in Native communities. IHS colleagues regularly participated in the group with NIH members and discussed best practices and lessons learned about outreach activities for providing health care in several AI communities.

Native American Research Centers for Health Program – Funding Cycle VII

The National Institute of General Medical Sciences and several other NIH Institutes and Centers have partnered with the IHS to support the NARCH program. The NARCH initiative supports partnerships between AI/AN tribes or tribally based organizations and institutions that conduct intensive academic-level biomedical research. NARCH provides opportunities for conducting research, research training, and faculty development to meet the needs of AI/AN communities. As a developmental process, tribes and tribal organizations are able to build a research infrastructure, including a core component for capacity building and the possibility of reducing the many health disparities so prevalent in AI/AN communities.

Research Projects and Findings:

Albuquerque Area Indian Health Board, Inc. (Miscellaneous)

Description: In collaboration with NIH, IHS funded the Albuquerque Area Indian Health Board, Inc. The funding is to strengthen partnerships with AI/AN communities’ engagement in health research using a three-prong approach: 1) Administrative Core, 2) Student Development Program, and 3) Tribal Solutions for Native Youth Affected by Adverse Childhood Experiences. Once completed, researchers will gain a better understanding of strength and resiliency factors, strengthening partnerships, solidifying AI/AN community engagement in health research, and supporting and training AI/AN scientists and health research professionals.

American Indian Higher Education Consortium (Behavioral/Mental Health)

Description: IHS, in collaboration with NIH, has funded the American Indian Higher Education Consortium (AIHEC) to establish a network of TCUs to conduct capacity-building research initiatives in behavioral health research and education programs. Five TCUs were selected for sub-awards to create the capacity within tribal communities to identify, develop, pilot, and evaluate intervention strategies and models addressing significant behavioral health issues through one of two aims: 1) establish a base level behavioral health research infrastructure at an initial cohort of five tribal colleges; and 2) initiate a community-based research program at each participating tribal college that focuses on behavioral health issues identified as high priority at each community. AIHEC secured the attendance and participation of students, staff, and faculty from TCUs at three conferences: the Society for the Advancement of Chicanos and Native Americans in Science conference in October 2015; the July 2016 Native Research Network Conference; and the 3rd Annual AIHEC Behavioral Health Institute in May 2016. The conferences focused on defining historical trauma, introducing the Historical Trauma Unresolved Grief Intervention, and teaching the CBPR methodology. AIHEC’s intention is to continue the development of an archive with behavioral-health-related curriculum training materials accessible online to all TCUs.
**Black Hills Center for American Indian Health – NARCH (Miscellaneous)**

*Description:* IHS, in collaboration with NIH, funded the Black Hills Center for American Indian Health–Lakota Center for Health Research to conduct two studies: 1) Effects of Complex Metal Exposure on Immune Status of Tribal Members Living on the Cheyenne River Sioux Reservation and 2) Reducing Secondhand Smoke Exposure in Native Children with Asthma. The first study characterizes the effects of arsenic, mercury, and other metals on Cheyenne River tribal members’ immune systems and then uses that information to build models to better understand the relationships between environmental exposures and health in this population. The second study is developing a culturally appropriate secondhand smoke intervention among AI households in and around Rapid City, where children with asthma/reactive airway disease reside.

*Publications/References:*

**Indian Health Council – California Native American Research Centers for Health (Behavioral/Mental Health)**

*Description:* In collaboration with NIH, IHS has funded the California Native American Research Centers for Health (CA-NARCH) that resulted in an annual Scientific Review Meeting in July 2016. The components of the Indian Health Council CA-NARCH include Administrative Core, Student Development, Reducing Availability and Misuse of Prescription Drugs Within California Reservations, and Development of a Model Resource and Support Network for Fetal Alcohol Spectrum Disorder (FASD) projects. The Student Development project supported a total of 30 Native American students (4 in community college, 7 in PhD programs or medical school, 4 in master’s programs, and 15 at a 4-year university working on a Bachelor of Science degree in health/sciences). In addition, 1 student in a post-bachelor program at NIH was accepted into a PhD program, and 2 students from local tribes were accepted to medical school at Yale and Harvard. These students have also been supported with mentoring and opportunities for participation in national conferences. The Reducing Availability and Misuse of Prescription Drugs on California Reservations project involved qualitative data collection supported by various tribal leaders, and data analysis has begun. Development of a Model Resource and Support Network for a FASD project required IRB approval, which was obtained, and consent and assent forms made available. A baseline community survey was designed and implemented, and now data is being collected.

**Inter Tribal Council of Arizona, Inc. (Workforce Development)**

*Description:* IHS, in collaboration with NIH, has continued to provide funding to the Inter Tribal Council of Arizona, Inc. (ITCA), in partnership with the University of Arizona Native American Research and Training Center (NARTC), to strengthen the American Indian Research Center for
Health (AIRCH). The mission of the ITCA AIRCH is to reduce health disparities among AI/ANs by supporting the Student Research Development Program at NARTC, where AI/AN stakeholders and academic institutions are extensively involved. All continuing AIRCH students are continuing with their education as well as helping in several activities, e.g., managing NARTC’s public health projects as Native American Cancer Prevention interns.

National Congress of American Indians, Inc. (Miscellaneous)

Description: In collaboration with NIH, IHS has funded the NCAI to develop and disseminate a partnership research evaluation toolkit and assess for feasibility through community dissemination for use with AI/AN research partnerships, and to revise a CBPR toolkit. NCAI is a well-established AI/AN organization with extensive collaborative relationships with other agencies in the federal government and tribal governments throughout Indian Country. As a response to the piloting process, three core chapters for the toolkit were revised. This intervention holds promise for reducing disparities in AI/AN communities.

Publication/Reference:

Northwest Portland Area Indian Health Board, Inc. (Workforce Development)

Description: In collaboration with NIH, IHS has funded two nonresearch projects: an administrative core project to improve health research skills for AI/AN students and fellows; and a summer research training institute (SRTI) for AI/AN health professionals. Both projects have targeted multiple predoctoral fellows that are supported, and several NARCH fellows and scholars have graduated. The 2016 SRTI is currently in the planning stages.

Publication/Reference:

Southcentral Foundation Research Center for Alaska Native Health (Behavioral/Mental Health)

Description: In collaboration with NIH, IHS has funded the SCF Research Center for Alaska Native Health to implement a sound methodological approach in the development of a survey instrument to measure public perceptions of alcohol use and misuse among AI/ANs that is supported by academic and tribal partnerships. The foundation of this success includes training on processing manuscripts and meetings to start developing the university-based training modules. Perceptions of Alcohol Use and Sobriety Among Alaska Native Pharmacogenomics Intervention study recruitment began in May 2016, and three manuscripts have been published with four other manuscripts in preparation.
Publications/References:


**United South and Eastern Tribes and Partners (Miscellaneous)**

*Description:* IHS, in collaboration with NIH, has funded the USET to conduct two research projects on mental health and diabetes among older AI/ANs. The first research project’s outcomes are targeted to respond to a request by tribal leaders wanting an investigation of the relationship between mental health and diabetes outcomes among their elders. Through the work of key stakeholders from the Eastern Band of Cherokee Indians (EBCI) and Vanderbilt University, the use of community-based participatory principles paved the way to implement a mixed methods approach that includes linking survey data from the Native Elder Care Study to the study participants’ electronic health records from the EBCI hospital. It is hoped that these tools will reinforce and augment in-person effective diabetes interventions tailored for the EBCI and other AI/AN communities. A manuscript is currently in development. The second research project involves the piloting of in-depth interviews with 4 females and 2 males who are tribal citizens and had a diagnosis of type 2 diabetes that resulted in strengthening and finalizing the interview tool. A total of 28 in-depth interviews were conducted with 16 females and 12 males. The researchers hope to find an association between mental health and diabetes outcomes among elder AI/ANs, [examine] the role of social support, and to capture lay understandings regarding contributors to effective diabetes control that will have a long-term impact for clinical and public health practice.

**White Mountain Apache Tribe and Johns Hopkins University – NARCH (Substance Related Disease, Behavioral/Mental Health, and Workforce Development)**

*Description:* In collaboration with NIH, IHS continues to fund the White Mountain Apache Tribe and Johns Hopkins Center for American Indian Health (WMAT-JHU) on two NARCH components. The first component of the WMAT-JHU NARCH includes Promoting Protective Factors Against Apache Youth Substance Use, which aims at evaluating an entrepreneurship and education promotion intervention targeting strengths and resiliency factors to reduce substance use and suicide risk among Apache youth. A manuscript describing the rationale behind developing the Arrowhead Business Group Apache Youth Entrepreneurship Program and the randomized controlled trial design evaluating its efficacy has been accepted for publication in 2016 by *American Indian Alaska Native Mental Health Research*. An abstract for this paper was also accepted for presentation at the Society for Prevention Research Annual Conference held in San Francisco from May 31 to June 2, 2016. The second component, Student and Faculty Development, aims to advance a cadre of Apache scholars through undergraduate, graduate, and
doctoral-level training in public health, medicine, and nursing at JHU or other accredited universities. The center promotes the training, continuing education, and technical assistance of AI/AN scholars to complete JHU’s Public Health Training Certificate in American Indian Health.

Publication/Reference:
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