



**AMERICAN INDIAN/ALASKA NATIVE
HEALTH RESEARCH ADVISORY COUNCIL (HRAC)**

**FIFTH ANNUAL HEALTH RESEARCH REPORT
FISCAL YEAR 2013**

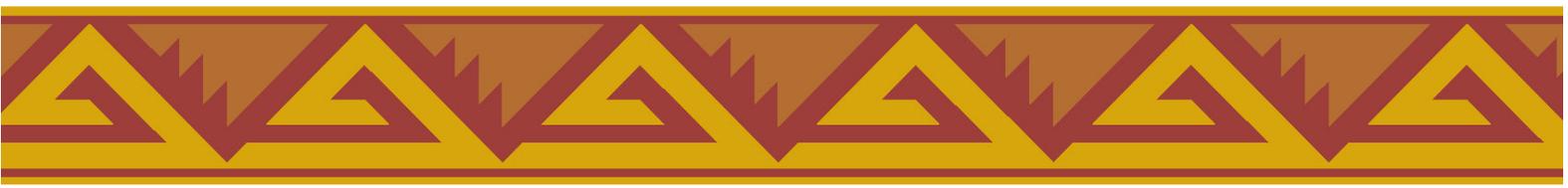


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Introduction

The *Fifth Annual Health Research Report* 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. The AI/AN Health Research Advisory Council (HRAC) produced this report as a resource to share research topics, findings, and available federal programs with tribes. Submissions were provided from the Administration for Children and Families (ACF)/Office of Planning, Research and Evaluation (OPRE); Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR); National Institutes of Health (NIH); Office of the Assistant Secretary for Health (OASH)/Office on Women's Health (OWH); and Office of Minority Health (OMH). Each research study in the report is identified by a specific health/disease area, and an index is included at the end of the report.

HRAC Background

The HRAC was established to provide the U.S. Department of Health and Human Services (HHS) a vehicle for consulting with tribes about health research priorities and needs in AI/AN communities, and collaborative approaches in addressing these issues and needs. The HRAC is 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. Federal partners participate in Council activities by providing input and support, and linkages with HHS's OpDivs/StaffDivs. These federal partners include ACF; Agency for Healthcare Research and Quality (AHRQ); Office of the Assistant Secretary for Planning and Evaluation (ASPE); CDC; Health Resources and Services Administration (HRSA); Office of Intergovernmental and External Affairs (IEA); IHS; NIH, Office of Minority Health (OMH); and Substance Abuse and Mental Health Services Administration (SAMHSA).

The HRAC serves three primary functions:

- 1) Obtaining input from tribal leaders on health research priorities and needs for their communities;
- 2) Providing a forum through which HHS OpDivs/StaffDivs can better communicate and coordinate AI/AN health research activities; and
- 3) Providing a conduit for disseminating information to tribes about research findings from studies focusing on the health of AI/AN populations.

Administration for Children and Families/Office of Planning, Research and Evaluation (ACF/OPRE)

ACF/OPRE serves as principal advisor to the Assistant Secretary for Children and Families on increasing the effectiveness and efficiency of programs designed to improve the economic and social well-being of children and families. In collaboration with ACF program offices and others, OPRE is responsible for ACF performance management; for conducting research and policy analyses; and for developing and overseeing research and evaluation projects to assess program performance and inform policy and practice. The following projects with AI/AN communities are among those that OPRE oversees in collaboration with program offices. OPRE's approach emphasizes working in partnership with tribal communities across diverse contexts, engaging tribal community members in the research, and respecting tribal sovereignty.

Research Projects & Findings

Research and Development

A Descriptive Study of Tribal Temporary Assistance for Needy Families (TANF) Programs (Workforce Development)

Description: This study examined the characteristics, implementation, and promising practices of four diverse Tribal TANF programs. This study provides important information on the differing cultural traditions of AI/AN people and other populations in the U.S., the different economic conditions on Indian reservations, and the special relationship between tribes and the federal government.

Findings: The study found that tribes use the flexibility of Tribal TANF to create diverse programs that reflect their unique circumstances, opportunities, and cultures. Elements of tribal culture were evident in the program design, in the way program staff and clients interacted, and in the types of activities in which clients were engaged. The Tribal TANF programs in the study generally focus on the broad goal of self-sufficiency, beyond the narrower goal of employment. In nearly all of the programs, staff highlighted the current leader's vision and creativity as key assets of the program, even as each leader had taken his or her program in a somewhat different direction.

Publication/Reference: Hahn H, Healy O, Hillabrant W, Narducci C. *A Descriptive Study of Tribal Temporary Assistance for Needy Families (TANF) Programs*. (2013). OPRE Report # 2013–34, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

http://www.acf.hhs.gov/sites/default/files/opre/tribal_tanf_final_report_for_submission.pdf

Study of Coordination of Tribal TANF and Child Welfare Services Grants (Workforce Development and Infant/Child Health)

Description: This project is studying the approaches utilized by tribal organizations awarded grants for coordination of Tribal TANF and child welfare services to inform the field of practice as well as policymakers and funders at various levels. The purpose of these grants, as prescribed by statute, is to examine the effectiveness of tribal governments or tribal consortia in coordinating child welfare services and services under Tribal TANF programs. The study focuses on 14 tribes and tribal organizations that are implementing grant-funded demonstration projects with the overarching goal to increase coordination of Tribal TANF and child welfare services and enhance service delivery to address child abuse and neglect. Ten of the grantees are continuing or expanding coordination efforts that began under previous grants, and four are new to these coordination efforts.

Publication/Reference: <http://www.acf.hhs.gov/programs/opre/research/project/study-of-coordination-of-tribal-tanf-and-child-welfare-services>

Understanding Urban Indians' Interactions with ACF Programs and Services (Workforce Development and Infant/Child Health)

Description: This exploratory research study will inform ACF's understanding of the challenges and context for barriers to accessing ACF services among low-income AI/ANs in urban areas. The primary aims of this study are to develop a better understanding of how Urban Indian Centers (UICs) are working to meet the needs of this population, to assess the unmet service needs among low-income urban AI/ANs, and to explore how ACF services might be able to better meet these needs. Data are being obtained via in-depth interviews with directors of UICs from around the country and a set of employees from local government social service agencies. Interviewees are asked to identify the range of social service needs of the population, e.g., barriers to accessing ACF services, what role the UICs play in meeting urban American Indians' needs, and any promising or effective practices that they believed would improve services to the urban Indian population.

Publication/Reference: <http://www.acf.hhs.gov/programs/opre/research/project/understanding-urban-indians-interactions-with-acf-programs-and-services>

Home Visiting Evidence of Effectiveness (HomVEE) Tribal Report (Infant/Child Health)

Description: The HomVEE systematic review identified a limited body of research and few rigorous studies of tribal home visiting programs. Given the lack of models that have evidence of effectiveness with tribal populations, the HomVEE team sought to identify lessons learned from the existing literature. HomVEE extracted descriptive information from each relevant study about the participant outcomes that were evaluated to gain a better understanding of the targeted domains that have and have not been studied. Finally, the team summarized lessons learned across studies on three topics: (1) the adaptation of existing models and the development of new models culturally relevant to AI/AN families and children; (2) the implementation challenges programs faced and their strategies for overcoming them; and (3) the challenges evaluators faced conducting studies of the program models.

Publications/References: http://homvee.acf.hhs.gov/HomVEE_Tribal_Report_2013.pdf

Del Grosso P, Kleinman R, Mraz Esposito A, Sama-Miller E, Paulsell D. *Assessing the Evidence of Effectiveness of Home Visiting Program Models Implemented in Tribal Communities*. (2014). Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Washington, DC.

Head Start Health Managers Survey (Infant/Child Health)

Description: The goals of the Head Start Health Manager Descriptive Survey include (1) to describe the characteristics of Health Managers and related staff in Head Start and Early Head Start programs; (2) to identify the current landscape of health programs and services being offered to these children and families; (3) to determine how health initiatives are prioritized, implemented, and sustained; and (4) to identify the programmatic features and policy levers that exist to support health services including staffing, environment, and community collaboration.

These objectives were accomplished through an online survey of all Head Start/Early Head Start Health Managers, including AI/AN and Migrant and Seasonal Head Start programs, which focused on:

- The demographic characteristics and professional background of the Health Managers and related staff;
- The health assessments, services, and community linkages offered to children and families by the HS/EHS program;
- The interactions between the Health Managers, other Head Start/Early Head Start staff, and the Health Services Advisory Committee;
- Opportunities for professional development and capacity building of Head Start/Early Head Start health staff;
- The ways in which Health Managers prioritize, implement, monitor, evaluate, and sustain health initiatives; and
- The community and policy context within which they operate.

The survey responses are further informed by semi-structured interviews conducted with a subsample of Health Managers, teachers, and family services workers. In addition to primary data collection, the study built a geo-coded database with measures of health and the determinants of health to provide context for the analyses of the quantitative and qualitative data. The project is informed by a technical work group that provides input on the study design, implementation, analysis, and final products. Additionally, a tribal expert work group has been created to help guide analysis, interpretation of results, and dissemination of information specific to AI/AN communities.

Publication/Reference: <http://www.acf.hhs.gov/programs/opre/research/project/head-start-health-managers-descriptive-study>

Evaluation

Evaluation of the Tribal Health Profession Opportunity Grants (HPOG) (Workforce Development)

Description: Authorized by the Affordable Care Act (ACA), the HPOG Program provides education and training to TANF recipients and other low-income individuals for occupations in the healthcare field that pay well and are expected to either experience labor shortages or be in high demand. In 2010, the Office of Family Assistance (OFA) awarded grants to 32 entities located across 23 states. Five of the grant awards were made to tribal organizations and colleges.

A comprehensive process and outcome evaluation is being conducted of the Tribal HPOG grantees. The goal of the evaluation is to provide documentation and lessons learned about diverse programmatic approaches to health professions training serving the tribal population. Interview and program operations data are being collected to provide an in-depth, systematic analysis of program implementation, operations, outputs, and outcomes in all tribal sites.

Findings: In FY 2013, the evaluation team developed practice briefs to share preliminary findings around program implementation and the provision of supportive services. According to staff and students across Tribal HPOG programs, several program elements have facilitated program implementation and student retention including: (1) dedicated staff/strong leadership; (2) application and screening process for program acceptance; (3) thorough assessment of student needs for program success; (4) social supports to help retain students in their programs; and (5) ways to instill pride and a sense of accomplishment among students. Tribal HPOG grantees also identified areas to enhance as they continue to support their students' successful transition to healthcare professionals, such as work experience opportunities and relationships with employers. The Tribal HPOG programs use grant funds and leverage non-grant resources such as community partners to provide an array of supportive services to participants. Across the five tribal grantees, a variety of services is provided to assist students with typical educational needs, such as paying for tuition, textbooks, and other training costs; offering mentorship, tutoring, and study groups; and arranging enrollment in prerequisite courses. Similarly, social support services are offered to participants and their families to provide assistance for rent and food, securing reliable transportation, and arranging childcare. Supportive relationships with program staff and leveraging existing infrastructure were reported to have been particularly helpful in the grantees' early implementation of supportive services.

Publications/References: Meit M, Levintow S, Langerman H, Meyer K, Gilbert T, Hafford C, Knudson A, Hernandez A, Carino T, Allis P. *Overview of Tribal Health Profession Opportunity Grants (HPOG) Supportive Services*. (2013). OPRE Report # 2013–23, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Meit M, Levintow S, Langerman H, Meyer K, Gilbert T, Hafford C, Knudson A, Hernandez A, Carino T, Allis P. *Tribal Health Profession Opportunity Grants (HPOG) Program Implementation & Evolution*. (2013). OPRE Report # 2013–55, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

<http://www.acf.hhs.gov/programs/opre/research/project/evaluation-of-tribal-health-profession-opportunity-grants-ethpog>

Technical Assistance and Capacity Building

The Tribal Home Visiting Evaluation Institute (TEI) (Infant/Child Health)

Description: The TEI provides technical assistance, leadership, and support to promote excellence in community-based research and evaluation of the federal home visiting program, Maternal Infant and Early Childhood Home Visiting Program (MIECHV), initiatives that serve AI/AN children and families through the Tribal MIECHV program. Examples of focal areas include developing and implementing a rigorous evaluation of home visiting; selecting, adapting, and developing culturally appropriate data collection tools and measures; tracking and measuring benchmarks; developing and modifying existing data systems; continuous quality improvement; data protection and privacy; and ethical dissemination and translation of evaluation findings derived from research with AI/AN to external audiences.

Publication/Reference: <https://www.acf.hhs.gov/programs/opre/resource/tribal-home-visiting-evaluation-institute-overview>

Community-Based Participatory Research

The Tribal Early Childhood Research Center (TRC) (Infant/Child Health)

Description: The TRC seeks to address gaps in early childhood research with AI/ANs through partnerships with Tribal Head Start, Early Head Start, child care, and home visiting programs. The goals of the TRC are to engage in a participatory research process and build capacity for researchers to work effectively with early childhood programs in AI/AN communities. Research and measurement activities currently being undertaken by the TRC are happening within the context of Communities of Learning (CoL). CoL are forums for tribal home visiting, Head Start, child care, and early childhood program leaders, researchers, and others with diverse perspectives and backgrounds to communicate through conference calls, email, and in-person. The objectives are to explore shared interests related to early childhood development in tribal communities and to accomplish tasks related to defining research priorities and to assisting in the interpretation and dissemination of research findings.

Publication/Reference: <http://www.tribalearlychildhood.org>

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

Founded in 1946, CDC is the leading public health agency in the United States. CDC collaborates with stakeholders and partners to develop expertise, information, and tools to promote healthy people and communities through health promotion; prevention of disease, injury, and disability; and preparedness for new and emerging health threats. CDC seeks to accomplish its mission by working with partners to monitor health; detect and investigate health problems; conduct research to enhance prevention; develop and advocate sound public health policies; implement prevention strategies; promote healthy behaviors; foster safe and healthful environments; and provide leadership and training. These functions are the backbone of CDC's mission. Each CDC center, institute, and office (CIO) undertakes these activities to conduct CDC's specific programs. The steps needed to accomplish this mission are based on scientific excellence and require well-trained public health practitioners and leaders dedicated to high standards of quality and ethical practice.

CDC shares its focus on health protection with ATSDR, its sister agency. First organized in 1985, ATSDR was created by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, more commonly known as the Superfund law. In 1986, Congress passed the Superfund Amendments and Reauthorization Act. The agency's mission is to serve the public through responsive public health actions to promote healthy and safe environments and prevent exposures to harmful substances.

CDC/ATSDR policy requires that all agency programs consult with tribal governments when they develop programs and activities that will affect Native populations. CDC is committed to continuing to work with federally recognized tribal governments on a government-to-government basis and strongly supports and respects tribal sovereignty and self-determination for tribal governments in the United States. The CDC/ATSDR Tribal Support Unit (Tribal Support), housed within the Office for State, Tribal, Local and Territorial Support (OSTLTS), is the primary link between CDC, ATSDR, and tribal governments. Tribal Support activities focus on fulfilling CDC's supportive role in ensuring that AI/AN communities receive public health services that keep them safe and healthy.

CDC and ATSDR focus on disease prevention and health promotion through research efforts and disease investigation. While there is still more work to be done to improve the health of AI/AN populations, CIOs across CDC and ATSDR continue to do research; they have reported 12 studies and 23 publications¹ on research efforts in Indian Country. These studies are part of the evidence base used for designing public health programs that improve the health of AI/AN communities. After the studies, public health programming is often the next step to improve the community's health. For further details on any of the projects that follow, please contact the CDC/ATSDR.

¹ Number of publications at the time this document was drafted.

Research Projects & Findings

Research and Development

A Collaboration with the Alaska Native Tribal Health Consortium to Prevent Hepatitis A and B (Infectious Disease) (CDC)

Description: The study is a multi-year collaboration with the Alaska Native Tribal Health Consortium (ANTHC) that aims to improve efforts to prevent hepatitis A and B through vaccination and to study interventions that may reduce mortality and morbidity from chronic hepatitis B and C. Key efforts include:

- Following for over 30 years a cohort of persons vaccinated for hepatitis B in the early 1980s, including conducting a sub-study from this project that involves looking at cellular immunity to hepatitis B among vaccinated persons.
- Continuing follow-up of persons vaccinated for hepatitis A as infants and children to determine duration of long-term immunity.
- Performing a retrospective review of acute hepatitis A cases and of acute hepatitis B cases for vaccine history to estimate vaccine efficacy at various time periods after vaccination.
- Treating patients from the hepatitis C and B cohorts and monitoring their responses.

Publications/References: Racznik GA, Bulkow LR, Bruce, MG, et al. Long-term immunogenicity of hepatitis A virus vaccine in Alaska 17 years after initial childhood series. *J Infect Dis.* 2013 Feb; 207(3):493–496.

Spradling PR, Simons B, Narayanan M, et al. Incidence of diabetes mellitus in a population-based cohort of persons with chronic hepatitis B virus infection. *J Viral Hepat.* 2013 Jul; 20(7):510–513.

Tohme RA, Bulkow L, Homan CE, Negus S, McMahon BJ. Rates and risk factors for hepatitis B reactivation in a cohort of persons in the inactive phase of chronic hepatitis B–Alaska, 2001–2010. *J Clin Virol.* 2013 Oct; 58(2):396–400.

Navajo Birth Cohort Study (Environmental Health) (CDC/ATSDR)

Description: ATSDR awarded a research cooperative agreement to the University of New Mexico Community Environmental Health Program (UNM-CEHP) entitled “A Prospective Birth Cohort Study Involving Environmental Uranium Exposure in the Navajo Nation (U01),” in 2010. Known as the “The Navajo Birth Cohort Study,” the study’s goal is to better understand the relationship between uranium exposures and birth outcomes and early developmental delays on the Navajo Nation. The study prospectively follows Navajo mothers and assesses their uranium exposure at key developmental milestones, and then evaluates their children post-birth to determine any associations with birth defects or developmental delays. Exposures will be evaluated through biomonitoring, home assessments, and surveys. The study will also provide broad public health benefits for Navajo communities through outreach and education on the importance of seeking prenatal care early in pregnancy.

In order to carry out the study, ATSDR and UNM-CEHP are collaborating with the Navajo Area Indian Health Service (NAIHS) and the Navajo Nation Division of Health (NNDOH). Through an interagency agreement with ATSDR, NAIHS hired project coordinators, which are called Cohort Clinical Liaisons (CCLs) at each of the study clinics. The CCLs are responsible for conducting medical record abstractions, recruiting participants, and shipping biological samples. Through a sole-source contract with ATSDR, NNDOH Community Health and Environmental Research Specialists provide survey administration, community education, recruitment, training, and outreach for the study. UNM is also collaborating with Navajo Nation Environmental Protection Agency, the Growing in Beauty Program, U.S. Environmental Protection Agency (EPA) Region 9, and Navajo culture and language specialists to carry out the study. Current study clinics include Northern Navajo Medical Center, Chinle Comprehensive Health Care Facility, Gallup Indian Medical Center, Tuba City Regional Health-Care Corporation, Tséhootsooí Medical Center, and Kayenta Health Center.

Doxycycline Tooth Staining (Infectious Disease) (CDC)

Description: Tetracyclines are the most effective class of antibiotics to treat rickettsial infections, including Rocky Mountain Spotted Fever (RMSF), ehrlichiosis, and anaplasmosis. Other antibiotics are significantly less effective and are more likely to result in a fatal outcome. In 1970, the Food and Drug Administration (FDA) placed a warning label on all tetracycline-class antibiotics marketed in the U.S. for pregnant women and children under the age of 8 years due to evidence of permanent dental staining and enamel hypoplasia from tetracycline-class antibiotics. Although older tetracyclines showed evidence of dental staining, doxycycline has not been shown to cause staining of developing permanent teeth and yet retains the same warning label, possibly leading to a delay in initiation or failure to prescribe doxycycline in children of this age group. RMSF has been a significant public health issue on American Indian reservations in Arizona since 2003, and suspected RMSF patients are routinely treated with doxycycline, in patients of all ages. In 2013, children on an American Indian reservation who received at least one dose of doxycycline before the age of 8 were enrolled as cases in a retrospective cohort study, while children of the same age who reside on the same Arizona reservation but did not receive doxycycline served as the control group.

Findings: The findings showed no evidence of subjective tetracycline-like staining, no significant differences in hypoplasia fluorosis, and no significant difference in tooth shade compared to the children who had not received doxycycline. This study provides the largest sample size and best evidence to date that short courses of doxycycline do not cause dental staining in pediatric populations. Results from this study will be published in the peer-reviewed literature and will provide information that is vital in educating healthcare providers on the safety of using doxycycline in children under the age of 8 years.

Influenza Hospitalizations among American Indian/Alaska Native People and in the United States General Population (Infectious Disease) (CDC)

Description: Historically, AI/AN people have experienced a disproportionate burden of infectious disease morbidity compared with the general U.S. population. Using IHS hospital discharge data (2001–2011) and 13 State Inpatient Databases (2001–2008), the study found that AI/AN persons had higher influenza-specific hospitalization rates than the comparison U.S. population. The influenza-specific and influenza-associated hospitalization rates suggest that

AI/AN people might suffer disproportionately from influenza illness compared with the general U.S. population.

Severe Acute Respiratory Infections Caused by 2009 Pandemic Influenza A (H1N1) among American Indians – Southwestern United States, May 1–July 21, 2009 (Infectious Disease) (CDC)

Description: The study describes rates and risk factors for H1N1pdm09 infection among American Indians in four isolated southwestern U.S. communities served by IHS. A review of clinical and demographic information from medical records of AIs hospitalized during May 1–July 21, 2009, with severe acute respiratory infection revealed that H1N1pdm09 hospitalization rates among this isolated American Indian population were higher than those reported for other U.S. populations. Prevention strategies for future pandemics should prioritize American Indians, particularly in isolated rural areas.

Publication/Reference: Suryaprasad A, Redd JT, Hancock K, Branch A, Steward-Clark E, Katz JM, Fry AM, Cheek JE; Influenza Serology Working Group; American Indian and Alaska Native Pandemic Influenza A (H1N1) Investigation Team. Severe acute respiratory infections caused by 2009 pandemic influenza A (H1N1) among American Indians–southwestern United States, May 1–July 21, u2009. *Influenza Other Respir Viruses*. 2013; 7(6):1361–1369. doi: 10.1111/irv.12123. Epub 2013 May 30.

<http://www.ncbi.nlm.nih.gov/pubmed/23721100>

Arctic Investigations Program (AIP), AI/AN Research Efforts (Infectious Disease) (CDC)²

Description: AIP's program 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. AIP is located on the Alaska Native Medical Center Campus in Anchorage. The AIP has performed several key studies relevant to AI/AN research:

- **Sanitation Services and Infectious Disease Risk in Rural Alaska (Infectious Disease):** AIP assessed increased infectious disease risk due to lack of in-home sanitation services. These studies help to educate stakeholders on the need for increased water and sanitation services in Alaska.
- **Response to Emergence of Replacement Pneumococcal Disease in AN Infants (Infant/Child Health):** AIP supported the introduction of a new pneumococcal vaccine, PCV 13, in southwest Alaska. Usage results clarified that it provides protection for up to 75 percent of serious pneumococcal illnesses.
- **High Rates of Pediatric Dental Caries in AN Children (Infant/Child Health):** 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. In 2012, AIP, along with two AN tribal health organizations, undertook a cost-effectiveness study of caries prevention strategies.
- **Responding to Pandemic H1N1 Influenza in AI/AN Populations (Infectious Disease):** AIP has been addressing the increased influenza mortality among AI/AN people by leading a five-state investigation (Alaska, Arizona, New Mexico,

² FY 2012 data are cited since FY 2013 data were not available at the time of this publication.

Wyoming, Oklahoma) into risk factors for death. The study data have been collected and are undergoing analysis.

Publications/References: Bruce MG, Zulz T, DeByle C, et al. Haemophilus influenza serotype A invasive disease, Alaska, USA, 1983–2011. *Emerg Infect Dis.* 2013 Jun; 19:932–937.

Hueffer K, Parkinson AJ, Gerlach R, Berner J. 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.* 2013; 72. doi: 10.3402/ijch.v72i0.19562. Epub 2013 Feb 7.

Keck JW, Redd JT, Cheek JE, et al. Influenza surveillance using electronic health records in the American Indian and Alaska Native population. *J Am Med Inform Assoc.* 2013 Jun 6. [Epub ahead of print]. doi: 10.1136/amiajnl-2012-001591.

Kowalec K, Minuk GY, Børresen ML, et al. Genetic diversity of hepatitis B virus genotypes B6, D, and F among circumpolar indigenous individuals. *J Viral Hepat.* 2013 Feb; 20:122–130. doi: 10.1111/j.1365-2893.2012.01632.x. Epub 2012 Jul 3.

Miernyk K, Bruden D, Zanis C, et al. The effect of Helicobacter pylori infection on iron stores and iron deficiency in urban Alaska Native adults. *Helicobacter.* Jan 2013. doi: 10.1111/hel.12036 [Epub ahead of print].

Nair H, Simões EA, Rudan I, et al. Global and regional burden of hospital admissions for severe acute lower respiratory infections in young children in 2010: A systematic analysis. *Lancet.* 2013 Apr; 381:1380–1390. doi: 10.1016/S0140-6736(12)61901-1. Epub 2013 Jan 29.

Parkinson AJ, Hennessy T, Bulkow L, Smith HS, and the Alaska Area Specimen Bank Working Group. The Alaska Area Specimen Bank: A tribal-federal partnership to maintain and manage a resource for health research. *Int J Circumpolar Health.* 2013 Apr 16; 72:20607. doi: 10.3402/ijch.v72i0.20607. Print 2013.

Raczniak GA, Bulkow LR, Bruce MG, et al. Long-term immunogenicity of hepatitis A virus vaccine in Alaska 17 years after initial childhood series. *J Infect Dis.* 2013 Feb 1; 207:493–496. doi: 10.1093/infdis/jis710. Epub 2012 Nov 29.

Raczniak GA, Thomas TK, Bulkow LR, et al. Duration of protection against hepatitis A for the current two-dose vaccine compared to a three-dose vaccine schedule in children. *Vaccine.* 2013 Apr 19; 31:2152–2155. doi: 10.1016/j.vaccine.2013.02.048. Epub 2013 Mar 5.

Singleton R, Wenger J, Klejka JA., et al. The 13-valent pneumococcal conjugate vaccine for invasive pneumococcal disease in Alaska Native children: Results of a clinical trial. *Pediatr Infect Dis J.* 2013 Mar; 32:257–263. doi: 10.1097/INF.0b013e3182748ada.

Singleton RJ, Valery PC, Morris P, et al. Indigenous children from three countries with non-cystic fibrosis chronic suppurative lung disease/bronchiectasis. *Pediatr Pulmonol.* 2013 Feb 8. doi: 10.1002/ppul.22763. [Epub ahead of print].

Spradling PR, Simons B, Narayanan M, et al. Incidence of diabetes mellitus in a population-based cohort of persons with chronic hepatitis B virus infection. *J Viral Hepat.* 2013 Jul; 20:510–513. doi: 10.1111/jvh.12071. Epub 2013 Mar 25.

Zulz T, Wenger JD, Rudolph K, et al. Molecular characterization of *Streptococcus pneumoniae* serotype 12F isolates associated with rural community outbreaks in Alaska. *J Clin Microbiol.* 2013; 51:1402–1407. doi: 10.1128/JCM.02880–12. Epub 2013 Feb 13.

AI/AN Infectious Diseases Analyses (Infectious Disease) (CDC)³

Description: Ongoing epidemiologic/analytical collaborative projects with the IHS, ANTHC, AIP, other agencies, and CDC divisions to detect and describe disease burden and health disparities for overall and specific infectious diseases among the AI/AN population. Analyses provide information for developing prevention strategies, vaccination policies, and reducing health disparities related to infectious diseases. Findings increase awareness of specific infectious diseases, and highlight disease, person, and geographic target areas to further investigate health disparities. Some of the research analysis projects include:

- **Infectious Diseases (Infectious Disease):** Analysis of the occurrence of overall and specific infectious disease hospitalizations among the AN population using IHS data. This analysis provides recent infectious disease hospitalization rates, high-risk diseases, and high-risk areas to focus further study and prevention measures for the reduction of infectious diseases in AN communities.
- **Molluscum Contagiosum (Infectious Disease):** Case/control study was analyzed to describe the epidemiology and risk factors that contribute to the high incidence of molluscum contagiosum among children in two specific AI/AN communities. This work will help target outreach and education activities with the long-term goal of reducing disease incidence in these communities.
- **Prion Disease (Miscellaneous):** Ongoing analysis of mortality data for AI/ANs with prion disease as a cause of death. Current available data are used to determine the occurrence of the disease among this population, including in chronic wasting disease endemic areas.
- **IHS/National Death Index Linkage Project (Miscellaneous):** Studies analyze deaths among AI/AN infants and infectious diseases among all AI/AN deaths. Design and analysis is proceeding for both studies. These studies use a newly created death dataset with IHS AI/AN race-corrected data, which allow for more accurate calculation of death rates among AI/ANs. Health disparities will be examined by comparing death rates for AI/ANs with those for non-Hispanic whites.
- **Lymphocytic Choriomeningitis Virus (Infectious Disease):** Medical chart review was conducted on a subset of IHS patients diagnosed with lymphocytic choriomeningitis virus (LCMV) to verify diagnosis and estimate incidence of this rodent-borne disease. The medical chart review found that LCMV was diagnosed very rarely and is thought to occur infrequently in AI/AN populations.
- **Dog Bite Injuries (Miscellaneous):** This research analyzed AI/AN hospitalizations and outpatient visits for dog bite injuries with a focus on affect related to tick-borne diseases and rabies. Dog bites were found to be a significant public health threat among AI/AN children living in the Alaska, Southwest, and Northern Plains West regions, which indicate that enhanced animal control and education efforts should reduce dog bite injuries and emerging infectious diseases.

³ FY 2012 data are cited, because FY 2013 data were not available at the time of this publication.

- **Tick-borne Diseases (Infectious Disease):** This research involved analysis of RMSF among AI/ANs using IHS inpatient and outpatient visit data. The incidence and high-risk areas for RMSF were determined. Research also analyzed ehrlichiosis among AI/ANs, using IHS inpatient and outpatient visit data. In this first analysis of ehrlichiosis among AI/ANs, incidence was estimated to describe trends and high-risk areas.
- **Neurologic Diseases (Miscellaneous):** This study involved analysis of Parkinson disease-associated data from IHS inpatients and outpatients to describe prevalence among the AI/AN population. Also, amyotrophic lateral sclerosis (ALS)-associated data were analyzed from IHS inpatient and outpatient patient-based data to describe the occurrence of ALS among AI/ANs.
- **Respiratory diseases (Infant/Child Health):** This study collaborated on an analysis of lower respiratory tract infection hospitalizations among AI/AN children to describe risk factors. The study also assisted in the analysis of bronchiectasis outpatient visits among AN children.
- **Gastroenteritis (Infectious Disease):** This study culminated in a published analysis of the occurrence of gastroenteritis hospitalizations among AI/ANs prior to and after the introduction of the rotavirus vaccine to describe the effect of the vaccine on hospitalizations. The findings underscored the importance of the rotavirus vaccine among this population.

Publications/References: Bjork A, Holman RC, Callinan LS, Hennessy TW, Cheek JE, McQuiston JH. Dog bite injuries among American Indian and Alaska Native children. *J Pediatr.* 2013; 162:1270–1275. doi: 10.1016/j.jpeds.2012.11.087. Epub 2013 Jan 16.

Desai R, Haberling D, Holman RC, et al. Rotavirus vaccine impact on gastroenteritis-associated disease burden trends among American Indian and Alaska Native children. *Pediatrics.* 2012; 129:e907–913.

Folkema AM, Holman RC, McQuiston J, Cheek JE. Trends in clinical diagnoses of Rocky Mountain spotted fever among American Indian/Alaska Native people, 2001–2008. *Am J Trop Med Hyg.* 2012; 86:152–158. doi: 10.4269/ajtmh.2012.11-0269.

Gordon PH, Mehal JM, Holman RC, Rowland LP, Rowland AS, Cheek JE. Incidence of amyotrophic lateral sclerosis among American Indians and Alaska Natives. *JAMA Neurol.* 2013; 70:476–480.

Holman RC, Hennessy TW, Haberling DL, et al. Increasing trend in the rate of infectious disease hospitalizations among Alaska Native people, 2001–2009. *Int J Circumpolar Health* (in press).

Knust B, Holman RC, Redd J, et al. Lymphocytic choriomeningitis virus infections among American Indians [letter]. *Emerg Infect Dis.* 2013; 19:328–329. doi: 10.3201/eid1902.120888.

Singleton RJ, Holman RC, Folkema AM, et al. Trends in lower respiratory tract infections among American Indian and Alaska Native and the general U.S. child populations. *J Pediatr.* 2012; 161:296–302.e2. doi: 10.1016/j.jpeds.2012.02.004. Epub 2012 Mar 19.

Singleton RJ, Valery PC, Morris P, et al. Indigenous children from three countries with non-cystic fibrosis chronic suppurative lung disease/bronchiectasis. *Pediatr Pulmonol.* 2013. doi: 10.1002/ppul.22763. [Epub ahead of print].

Evaluation

Disparities in Motor-Vehicle–Related Deaths among Females — United States, 2005–2009 (Miscellaneous) (CDC)

Description: In 2010, almost 11,000 females were killed in motor vehicle crashes, and racial/ethnic minorities were affected disproportionately. To assess disparities in motor-vehicle-related death rates by race/ethnicity among females in the U.S., CDC analyzed 2005–2009 data from the National Vital Statistics System. The study found that AI/AN females had the highest motor-vehicle-related death rates, followed by whites, blacks, Hispanics, and Asian Pacific Islanders. Despite the recent declines in motor-vehicle-related death rates, the need remains for increased use of evidence-based strategies to reduce the burden of motor-vehicle-related deaths among females overall and especially among AI/ANs.

Publication/Reference: West BA, Naumann RB. Disparities in motor vehicle-related deaths among females – United States, 2005–2009. *Journal of Women’s Health*. 2013; 22(6):471–474.

Nicotine Exposure and Metabolism in Alaska Native Adults Research Study (Substance Related Disease) (CDC/ATSDR)

Description: The Division of Laboratory Sciences (DLS) Emergency Response and Air Toxicants Branch provided in-kind laboratory analysis via agreement with the Alaska Native Medical Center/IHS on a cross-sectional study of 400 AN adult tobacco users, 50 male and female smokers, commercial chew users, iq’mik users, and non-tobacco users who received medical services in Dillingham, Alaska. The objective of the study was to generate information on nicotine and carcinogen exposure in underserved ANs. DLS completed chemical analysis of Alaskan iq’mik, a Native smokeless tobacco mixture that combines tobacco and fungus/plant ash, and performed measurements in urine for cotinine (a nicotine byproduct). Select findings were published in Fiscal Year (FY) 2013.

Publications/References: Benowitz NL, Renner CC, Lanier A, Tyndale RF, Hatsukami DK, Lindgren B, Stepanov I, Watson CH, Sosnoff CS, Jacob P. Exposure to nicotine and carcinogens among southwestern Alaskan Native cigarette smokers and smokeless tobacco users. *Cancer Epidemiology Biomarkers & Prevention*. 2012 Jun; 2(6): 934–942.

Hearn BA, Renner CC, Ding YS, Vaughan-Watson C, Stanfill SB, Zhang L, Polzin GM, Ashley DL, Watson CH. Chemical analysis of Alaskan iq’mik smokeless tobacco. *Nicotine Tob Res*. 2013 Jul; 15(7):1283–1288.

Zhu AZ, Binnington MJ, Renner CC, Lanier AP, Hatsukami DK, Stepanov I, Watson CH, Sosnoff CS, Benowitz NL, Tyndale RF. Alaska Native smokers and smokeless tobacco users with slower CYP2A6 activity have lower tobacco consumption, lower tobacco-specific nitrosamine exposure and lower tobacco-specific nitrosamine bioactivation. *Carcinogenesis*. 2013 Jan; 34(1):93–101.

Training/Education

Summer Institute Course on Developing a Tribal Health Survey and Understanding the CDC Behavioral Risk Factor Surveillance System (BRFSS) Survey in Your Community (Training/Education) (CDC)

Description: The Division of Cancer Prevention and Control (DCPC), in collaboration with the Northwest Portland Area Indian Health Board (NPAIHB), developed a course on conducting tribal health surveys for the Native American Research Centers for Health Summer Institute training program. The course provided tribal public health managers and epidemiologists with concrete steps they can use in developing their own tribal health surveys. Epidemiologists involved with the NPAIHB and Albuquerque Area health survey projects discussed with students how they designed, implemented, and analyzed their in-person survey or analyzed existing BRFSS data for specific tribes. DCPC helped students develop a draft health survey proposal and project plan for their tribe or Tribal Epidemiology Center through interactive sessions.

Technical Assistance/Capacity Building

Association of Bisphenol A (BPA), Arsenic Levels, and Diabetes among Persons Living in the Cheyenne River Sioux Tribe (CRST) (Environmental Health) (CDC/ATSDR)

Description: DLS, Inorganic and Radiation Analytical Toxicology, Organic Analytical Toxicology, and Clinical Chemistry Laboratories provided technical assistance for a study conducted by CDC's Division of Environmental Hazards and Health Effects Health Studies Branch in collaboration with the CRST. The goal of the study is to quantify BPA and arsenic concentrations in a Native American population, specifically in persons living in the CRST Reservation, and assess the association between these environmental chemicals and the clinical disorder diabetes mellitus. DLS provided collection and shipping supplies and labels as needed and analyzed 300 urine samples for total arsenic, BPA, and creatinine, as well as 100 urine samples for arsenic species.

Community-Based Participatory Research

Rocky Mountain Spotted Fever (RMSF) Rodeo (Infectious Disease) (CDC)

Description: The RMSF Rodeo was a collaborative (CDC, IHS, the state of Arizona, U.S. Department of Agriculture, private donors) pilot demonstration project carried out in 2012 in a single 600 home community with a high number of RMSF cases. In Phase 1 (April 2012–August 2012), the project delivered appropriately timed and integrated pet care and tick control techniques to every participating home. Due to the rapid reduction of ticks with the project's integrated efforts, the tribe instituted Phase 1 activities in the remaining communities in 2013 and provided free spay and neuter services to everyone on the reservation. The success of Phase 1 led to the development of Phase 2 (March 2013–September 2013) to address the continuity of tick control following a cold season and to evaluate the use of tick collars alone in areas where tick burden was low. At the end of Phase 2, less than 6 percent of dogs in the RMSF Rodeo community had ticks visible and fewer than 5 percent of homes showed evidence of tick activity requiring acaricide treatment. The average annual incidence of human cases of RMSF also decreased by 43 percent. More sustainable funding and infrastructure need to be established in order to continue prevention efforts on all affected communities and to stop the spread of this disease.

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 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 approaches to develop culturally-relevant and community-based interventions. Examples of the breadth of NIH programs relevant to AI/AN communities that were supported during FY 2013 and selected publications arising from this research are set out below.

Research Projects & Findings

Research and Development

A Primary Prevention Trial to Strengthen Child Attachment in a Native Community (Infant/Child Health)

Description: Research has shown that attachment security in infancy and early childhood promotes resilience in children who grow up under stressful circumstances. The University of Washington Partnerships for Native Health in collaboration with the Fort Peck Tribes in northeastern Montana is adapting the Promoting First Relationships (PFR) program to ensure cultural appropriateness for Native communities. Researchers will then test the effectiveness of PFR in promoting sensitive caregiving and child attachment. The researchers hope that by promoting sensitive caregiving and attachment security they will minimize the impact of stressors and foster resilience in this AI population.

Action for Health in Diabetes (Diabetes)

Description: The Look AHEAD clinical trial assesses the long-term health impact of behavioral interventions designed to achieve and sustain weight loss. The trial includes two southwest American Indian clinical centers. Although the Look AHEAD lifestyle intervention did not reduce cardiovascular events, it has been shown to provide other important health benefits, including decreasing sleep apnea, reducing the need for diabetes medications, helping to maintain physical mobility, reducing the development of chronic kidney disease, reducing healthcare costs, and improving quality of life. The active intervention has been discontinued, however, all study participants are followed-up in an effort to continue evaluating the long-term health and effects of this weight loss intervention.

Publications/References: The Look AHEAD Research Group, Knowler WC, Bahnson JL, et al. Effect of a long-term behavioral weight loss intervention on nephropathy in overweight or obese adults with type 2 diabetes: A secondary analysis of the Look AHEAD randomized clinical trial. *Lancet Diabetes and Endocrinology*. 2014 Aug 8. pii:S2213-8587(14)70156–70161. PMID: 25127483. [http://linkinghub.elsevier.com/retrieve/pii/S2213-8587\(14\)70156-1](http://linkinghub.elsevier.com/retrieve/pii/S2213-8587(14)70156-1)

Jakicic JM, Egan CM, Fabricatore AN, et al. Four-year change in cardiorespiratory fitness and influences on glycemic control in adults with type 2 diabetes in a randomized trial. *Diabetes Care* 2013 May; 36(5):1297–1303. PMID: 23223405. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC23223405/>

Alcohol Abuse/Dependence and its Consequences for Indigenous Adolescents (Substance Related Disease)

Description: This research is the only long-term developmental, diagnostic study of indigenous adolescents and their parents/caretakers to date. Eight parameters are being examined to understand the role of alcohol in indigenous adolescents' lives: (1) the emergence of alcohol use, abuse, and dependence across time; (2) the relationship between internalizing and externalizing behaviors on alcohol use and abuse; (3) protective factors against adolescent alcohol use and abuse; (4) the effects of group membership on alcohol outcomes; (5) comorbidities of alcohol abuse/dependence with other psychiatric disorders such as major depressive episode, generalized anxiety disorder, and conduct disorder; (6) the timing of behaviors related to alcohol use in relation to one another, (7) potential mediators between alcohol use and antisocial behaviors; and (8) the effects of community characteristics on alcohol use/abuse.

Publications/References: Whitbeck LB, Sittner Hartshorn KJ, Crawford DM, et al. Mental and substance use disorders from early adolescence to young adulthood among indigenous young people: Final diagnostic results from an 8-year panel study. *Soc Psychiatry Psychiatr Epidemiol*. 2014 Feb 2. PMID: 24488151.

<http://dx.doi.org/10.1007/s00127-014-0825-0>

Whitbeck, L.B., Walls, M., Sittner Hartshorn, K. (2014). *Indigenous Adolescent Development: Psychological, Social and Historical Contexts*. Routledge, Taylor and Francis Group, New York.

American Indian Suicide Prevention Interactive Resources (Behavioral/Mental Health)

Description: This project is developing and evaluating a multimedia, online suicide prevention resource for AI high school youth. The American Indian Suicide Prevention Interactive Resources (ASPIRE) project is creating a curriculum that is dynamic and engaging, culturally relevant to AI youth, cost-effective, and incorporates youth content and helps peer-to-peer connections within a safe, discreet, and monitored community.

Arsenic Exposure, Cardiovascular Disease, and Diabetes in Native Americans (Cardiovascular Disease)

Description: This research is evaluating the association of inorganic arsenic exposure and arsenic biotransformation on the risk of cardiovascular disease and diabetes in 4,549 AIs who participated in the Strong Heart Study. An initial analysis showed low-to-moderate inorganic arsenic exposure and confirmed long-term constancy in arsenic exposure and urine excretion patterns in AIs from three U.S. regions over a 10-year period. Further analysis of 600 samples

has been completed to correlate arsenic exposure, cardiovascular pulmonary health, and health status.

Publications/References: Tellez-Plaza M, Guallar E, Howard BV, et al. Cadmium exposure and incident cardiovascular disease. *Epidemiology*. 2013; 24:421–429.

<http://www.ncbi.nlm.nih.gov/pubmed/23514838>

Gribble MO, Crainiceanu CM, Howard BV, et al. Body composition and arsenic metabolism: A cross-sectional analysis in the Strong Heart Study. *Environ Health*. 2013; 12:107–112.

<http://www.ncbi.nlm.nih.gov/pubmed/24321145>

Autoimmune Liver Diseases in Alaska Natives: Natural History and Treatment (Renal Disease)

Description: The AN population is one of the few populations in the world with a high prevalence of autoimmune hepatitis (AIH). This research is describing the distribution of various human leucocyte antigen (HLA) alleles in the AN population as well as examining associations between autoantibodies, HLA alleles, and clinical features. Better understanding of these features may provide information that can contribute to better treatment of AIH in AN.

Publications/References: Ferucci ED, Hurlburt KJ, Mayo MJ, et al. Azathioprine metabolite measurements are not useful in following treatment of autoimmune hepatitis in Alaska Native and other non-Caucasian people. *Can J Gastroenterol*. 2011 Jan; 25(1):21–27. PMID: 21258664.

<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/21258664/>

Ferucci ED, Choromanski TL, Hurlburt KJ, et al. Autoimmune hepatitis in the Alaska Native population: Autoantibody profile and HLA associations. *Liver Int*. 2014 Sep; 34(8):1241–1249. PMID: 24939565.

<http://onlinelibrary.wiley.com/doi/10.1111/liv.12372/full>

Banner Alzheimer’s Institute Center of Excellence (Behavioral/Mental Health)

Description: The Banner Alzheimer’s Institute COE (BAI) is committed to improving people’s lives through biomedical research. In FY 2013, BAI engaged in raising awareness of Alzheimer’s disease and related dementia with 16 of 22 federally recognized tribes; served an estimated 8,000 community participants and family caregivers through distinct outreach and education programs, including an annual conference on Alzheimer’s disease in AIs; enrolled participants in the Alzheimer’s Disease Clinical Core, a longitudinal study on cognitive aging; and worked with a Navajo neuropsychologist to develop a new cognitive assessment tool using community volunteers from a number of urban and tribal communities. Once the tool is validated, further study may determine if certain scores are predictive of Alzheimer’s disease or dementia.

Center for Native Oral Health Research (Oral Health)

Description: The Center for Native Oral Health Research (CNOHR) conducts research aimed at developing culturally acceptable and effective strategies to prevent infectious oral diseases in AI/AN populations. Early childhood caries (ECC) is a devastating type of dental caries that disproportionately affects low-income and minority children, including AI/AN children. CNOHR researchers are conducting community-based participatory research that seeks to prevent this disease. Two randomized controlled trials are being conducted; one study features a

behavioral intervention and the other is an oral health promotion program delivered by community oral health workers in the Head Start setting. An additional exploratory study assesses periodontal health status in urban-dwelling adolescents at high risk for type 2 diabetes. This research aims to prevent oral disease in AI/AN populations through empowerment, emphasizing behavioral and community-based strategies.

Publication/Reference: Batliner T, Wilson AR, Tiwari T, et al. Oral health status in Navajo Nation Head Start children. *J Public Health Dent.* 2014 Jun 23. PMID: 24954053.

<http://www.ncbi.nlm.nih.gov/pubmed/24954053>

Complex Metal Exposure and Immune Status on the Cheyenne River (Environmental Health)

Description: This pilot project is investigating early markers of autoimmune disease and immune dysfunction in Cheyenne River Sioux tribal communities and the possible link between environmental exposure to heavy metals and pesticides and autoimmune status.

Domoic Acid Neurotoxicity in Native Americans (Miscellaneous)

Description: Over the past 30 years, there has been a dramatic increase in the number of harmful algal blooms in coastal waters throughout the world resulting in more toxic algal species. One of these marine organisms, *Pseudo-nitzschia*, produces a neurotoxin called domoic acid, whose levels have been close to or have exceeded safety levels at razor clam harvesting beaches on AI reservations in the Pacific Northwest United States. Data indicate that AIs who harvest razor clams are currently at risk for significant, but preventable, neurobehavioral impairment from razor clam consumption called amnesic shellfish poisoning (ASP). This prospective longitudinal cohort design of 735 AIs (ages six months to 75 years old) from three tribes, uses a nested case-control study of identified cases of ASP to determine the health impacts of chronic, low level exposures to domoic acid over time as well as the exposure and host factors associated with domoic acid neurotoxicity.

Drug Use Among Young Indians: Epidemiology & Prediction (Substance Related Disease)

Description: This project continues a 30-year surveillance effort assessing the levels and patterns of substance use among AI adolescents attending reservation schools. Each year, a representative sample of 1,500 AI youth living on or near reservations are given a comprehensive drug use survey in their school classroom. In addition, the study assesses violence, victimization, and delinquent behaviors. Recent findings indicate that while substance use is significantly higher among AIs in 8th and 10th grade, at 12th grade alcohol use rates are slightly lower than national averages. The study also indicates early onset of substance use and high OxyContin use in 8th and 10th grades relative to national averages.

Publications/References: Dieterich SE, Stanley LR, Swaim RC, et al. Outcome expectancies, descriptive norms, and alcohol use: American Indian and White adolescents. *J Prim Prev.* 2013 Aug; 34(4):209–219. PMID: 23754535.

<http://link.springer.com/article/10.1007%2Fs10935-013-0311-6>

Swaim RC, Stanley LR, Beauvais F. The normative environment for substance use among American Indian students and White students attending schools on or near reservations. *Am J*

Orthopsychiatry. 2013 Apr–Jul; 83(2 Pt 3):422–429. PMID: 23889032.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3752853/>

Genetics of Coronary Artery Disease in Alaska Natives (Cardiovascular Disease)

Description: This research completed a second examination of the Genetics of Coronary Artery Disease in Alaska Natives (GOCADAN) family-based cohort with the goal of identifying genetic and environmental contributors to cardiovascular disease (CVD). The partners are the Norton Sound Health Corporation (Native-owned Health Corporation), the MedStar Health Research Institute, and the Texas Biomedical Research Institute. The goal is to develop a longitudinal study of Alaska Eskimos to understand the genetic and environmental contributors to CVD and CVD risk factors. Collaborations are being explored with other chronic disease cohorts in Alaska to create a larger and more scientifically valuable cohort for a longitudinal study.

Publications/References: Rubicz, R, Zhu, J, Laston, S, et al. Statistical genetic analysis of serological measures of common, chronic infections in Alaska Native participants in the GOCADAN study. *Genetic Epidemiology*. 2013; 37:751–757. PMID: 23798484.
<http://www.ncbi.nlm.nih.gov/pubmed/23798484>

Jolly, SE, Howard, BV, Umans, JG. Cardiovascular disease among Alaska Native peoples. *Current Cardiovascular Risk Reports*. 2013; 7:438–445. PMID: 24367710.
<http://www.ncbi.nlm.nih.gov/pubmed/24367710>

***Helicobacter pylori*: Host and Bacterial Virulence Factors for Severe Clinical Outcomes (Infectious Disease)**

Description: This pilot project is recruiting ANs with gastric cancer and peptic ulcer disease (PUD) to identify *H. pylori* pathogenic virulence factors and host factors that might be associated with gastric cancer and PUD. Participants are being tested for *H. pylori* pathogenic genes of interest. Comparison data from AN participants without PUD and gastric cancer are also being collected.

Identification of the Heritable Basis for Type 2 Diabetes and Obesity among American Indians (Diabetes)

Description: Type 2 diabetes and obesity disproportionately affect minority populations. Although environment and lifestyle choices influence these diseases, studies have shown that genetics also has an important role. This research project utilizes clinical data and DNA samples collected as part of a longitudinal study of Pima Indians to identify genetic variation that increases risk for type 2 diabetes and obesity in AIs. The investigators are conducting both targeted and hypothesis-free studies. Targeted studies include analysis of genes with a known role in the physiology of these diseases. For example, it was found that about 3 percent of the Pima Indians living in the Gila River Indian Community have mutations in a gene that is known to cause overeating. The hypothesis-free studies include interrogating the entire genome for DNA variation that might increase the risk of obesity and diabetes using genome wide association study approaches and whole exome and genome sequencing. This work has recently identified a mutation that is specific for AIs in a gene expressed in beta cells of the pancreas. Individuals who have this mutation have a doubled risk of developing diabetes.

Publications/References: Bian L, Traurig M, Hanson RL, et al. MAP2K3 is associated with body mass index in American Indians and Caucasians and may mediate hypothalamic inflammation.

Human Molecular Genetics. 2013 Nov 1; 22:4438–4449. PMID: 23825110.

<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/23825110/>

Meerson A, Traurig M, Ossowski V, et al. Human adipose microRNA-221 is up-regulated in obesity and affects fat metabolism downstream of leptin and TNF. *Diabetologia*. 2013 Sep; 56(9):1971–1979. PMID: 23756832.

<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/23756832/>

Increasing Economic Resources and Obesity: A Quasi-Experimental Study (Infant/Child Health)

Description: This study examined the extent to which economic resources are causal antecedents to weight-related health outcomes. One objective was to explore the types of community-level improvements that lead to decreased risks for obesity in AI/AN women and children.

Accordingly, researchers explored: (1) associations between growth velocity during the first two years of life and obesity, (2) associations between socioeconomic status (SES) during first six years of life and obesity, and (3) associations between SES and obesity in diabetic adults upon exposure to healthful food environments.

Findings: Study findings showed no relationship between growth velocity in the first two years of life and later overweight status. Size and not growth velocity was most consistently associated with being overweight in later childhood. Among some racial and ethnic groups (i.e., Whites, Hispanics, and Asians), SES during early childhood (i.e., first six years of life) was inversely associated with overweight/obesity; however, in American Indians and African Americans, SES during early childhood was not significantly related to obesity. Finally, among diabetic adults, the availability of healthful food environments had different health implications across SES groups. For low SES groups, with severely constrained financial resources, the availability of a healthful food environment was associated with higher obesity compared to outcomes for higher income groups.

Publications/References: Jones-Smith, JC, Karter AJ, Warton, EM, et al. Obesity and the food environment: Income and ethnicity differences among people with diabetes—the Diabetes Study of Northern California (DISTANCE). *Diabetes Care*. 2013 Sept; 36(9):2697-2705.

<http://care.diabetesjournals.org/content/36/9/2697.full.pdf+html>

Jones-Smith, JC, Dieckmann, MG, Gottlieb, L, et al. Socioeconomic status and trajectory of overweight from birth to mid-childhood: The Early Childhood Longitudinal Study-Birth Cohort. June 2014.

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0100181>

Native American Research Centers for Health (NARCH) (Miscellaneous)

Description: The NARCH initiative is a collaboration between the IHS and NIH that supports partnerships of AI/AN tribes, tribal organizations, or non-profit national or area Indian Health Boards, with institutions that conduct intensive academic-level biomedical and behavioral research. The NARCH initiative also (1) strengthens opportunities for conducting research training and faculty development to meet the needs of AI/AN communities; (2) encourages competitive research linked to reducing health disparities; (3) develops a cadre of AI/AN scientists and health professionals engaged in biomedical, clinical, and behavioral research; and (4) increases the capacity of both research-intensive institutions and AI/AN organizations to

work in partnership to increase trust in AI/AN communities toward research. These purposes will be achieved by supporting research projects, student development projects, and faculty development projects developed by each NARCH partnership. Institutes and centers across NIH support the NARCH initiative, and NIH activities supported by NARCH are found throughout all sections of this report.

Natural Phenotypic Diversity of HCV NS3/4A Protease (Infectious Disease)

Description: This project studies the natural history and pathogenesis of chronic hepatitis C virus (HCV) infection in humans using data from a cohort of more than 1,200 HCV-infected Alaska Natives and indigenous peoples. This research is investigating the potential relationship between an enzyme (serine protease HCV NS3/4A) and liver disease activity and will characterize the biochemistry and molecular biology of the naturally occurring NS3/4A variants. The study describes and tests the potential pathogenic significance of naturally occurring mutations in HCV genomes during mild and severe disease progression. Well-characterized clinical cases where no disease develops in the context of long-term HCV infection have been identified within the cohort; NS3/4A variants from serum specimens from these cases have been identified and cloned. Over 70 clones have been sequenced, multiple unique protease complex variants have been identified, and the initial expression and some of the proposed biochemical analyses have been performed on a subset of the clones. Biochemical assays are being established to compare biochemical activities of the protease variants from mild and severe disease cases.

Neurobiology of Alzheimer’s Disease (Behavioral/Mental Health)

Description: NIH funds the University of Texas, Southwestern Medical Center Alzheimer’s Disease Center to study vascular and inflammatory risk factors in elderly individuals that influence the course of Alzheimer’s disease. Part of this center supports the Native American Satellite Diagnostic and Treatment Core to conduct research on dementia diagnosis and treatment and outreach services for members of the Choctaw Nation in Oklahoma through its Choctaw Nation Health Care Satellite Center.

Nicotine Exposure and Metabolism in Alaska Native Adults (Substance Related Disease)

Description: This research is examining the characteristics, attitudes, beliefs, and exposure to tobacco products in a cohort of rural dwelling ANs. Very high tobacco-use prevalence, dual product use, and early tobacco use were observed in ANs who live in southwestern Alaska. Unexpectedly, these findings did not appear to be correlated with heavier individual tobacco use or higher levels of addiction in this population.

Publications/References: Renner CC, Lanier AP, Lindgren B, et al. Tobacco use among southwestern Alaska Native people. *Nicotine Tob Res.* 2013 Feb; 15(2):401–406. PMID: 22949573.

<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/22949573/>

Binnington MJ, Zhu AZ, Renner CC, et al. *CYP2A6* and *CYP2B6* genetic variation and its association with nicotine metabolism in Southwestern Alaska Native people. *Pharmacogenet Genomics.* 2012 Jun; 22(6):429–440. PMID: 22569203.

<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/22569203/>

Point of Care Nucleic Acid Test for Chlamydia to Ensure Prompt Treatment (Infectious Disease)

Description: This research is translating a new point of care, sexually transmitted disease (STD) (chlamydia) diagnostic test with the goal of increasing early identification of chlamydia infections in populations that are disproportionately affected. Of the three million new infections each year, AIs have an infection rate that is five-fold higher than that of Whites. This project aims to coordinate care through a “test-and-treat” approach, where diagnosis and treatment can be performed within a single visit. This test can provide rapid, accurate, and anonymous results to enable decentralized clinics to overcome stigma and barriers to treatment of chlamydia, by broadening outreach testing.

Prenatal Alcohol and SIDS and Stillbirth (PASS) Network: The Safe Passage Study [Auditory Component] (Infant/Child Health)

Description: The Safe Passage Study, which is being conducted by the PASS Research Network, includes AI populations. This study includes auditory tests of brainstem function, Auditory Brainstem Response (ABR) exams, and Otoacoustic Emissions (OAE) testing. While not a standard hearing assessment program, these tests may reveal deficits in auditory conduction and neural processing as well as their association with maternal alcohol intake prenatally and other possible risk factors. The study will also help to improve prevention and intervention strategies that can improve the future health or lives of these high-risk newborns in AI populations and increase knowledge about the importance of hearing screening and follow-through for underrepresented groups to ensure improved communication, occupational, and financial outcomes for these children. As of December 2013, the Northern Plains study had obtained almost 1,400 ABR and 2,600 OAE exams (1,300 newborn and 1,500 at one month) on newborns or neonates at one month of age; by the end of the study, they expect to have nearly 2,000 ABR and 3,500 OAE exams completed. The PASS Research Network study is still collecting data and will not publish findings until after completion of the study at the end of 2015.

Prenatal Alcohol in Sudden Infant Death Syndrome (Infant/Child Health)

Description: The PASS Network is conducting prospective and retrospective studies at two clinical sites in communities at high risk for prenatal maternal alcohol consumption (one is the United States Northern Plains in IHS areas). The goal is to discover new knowledge that leads to a decrease in fetal and infant mortality and improves child health.

Findings: One study found that in a stillbirth with known alcohol exposure, abnormalities ranging from fetal abdominal wall disruption to hypoxic-ischemic brain and cardiac injury may be linked to placental dysfunction due to maternal vascular under perfusion. In another study, investigators tested the efficacy of a new technology, maternal trans-abdominal fetal electrocardiography, for the purpose of monitoring fetal heart rate at 20 to 24 weeks gestation. They found this technology to have great potential for use as a tool to alert clinicians of pending problems with high-risk pregnancies.

Publications/References: Folkerth, RD, Habbe, DM, Boyd, TK, et al. Gastroschisis, destructive brain lesion, and placental infarction in the second trimester suggest a vascular pathogenesis. *Pediatric and Developmental Pathology*. 2013 Sep–Oct; 16(5):391–396. PMID: 23895144. <http://www.pedpath.org/doi/full/10.2350/13-03-1316-CR.1>

Hofmeyr, F, Groenewald, CA, Nel, DG, et al. Fetal heart rate patterns at 20 to 24 weeks gestation as recorded by fetal electrocardiography. *J Matern Fetal Neonatal Med.* 2014 May; 27(7):714–718. PMID: 23991757.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4064125/>

Quality of Epilepsy Treatment and Costs in Older Americans by Race (Elder Health)

Description: The QUIET CARE study uses retrospective Medicare claims data to examine the current quality of epilepsy care across racial and ethnic groups of older Americans, including Whites, American Indians, African Americans, and Hispanics, and will assess geographic variations in care. Previous work from this group has found that more than a quarter million people over the age of 65 receive epilepsy-related care in the U.S., and that some vulnerable populations are more likely to be affected or to receive poor quality of care after a first seizure. The study is investigating the quality of care older Americans with epilepsy receive, specifically with regard to anti-epileptic medications and seizure recurrence, and the findings will ultimately help guide the development of future interventions at the provider, patient, or system level to improve health care for older minorities with epilepsy.

Risk Factors for Alcoholism in Native Americans (Substance Related Disease)

Description: This research is identifying risk and protective factors related to alcohol abuse and dependence in the reservation-dwelling Mission Indians of Southern California. The purpose is to elucidate the genetic, clinical, and neurobehavioral factors related to alcohol abuse and associated health problems in this high-risk population.

Findings: Findings suggest that the Mission Indians have a distinct cluster of biological and behavioral risk factors, and that the initiation of alcohol use during early adolescence is particularly malignant for this population. The identification of factors associated with risk for alcohol-related problems in this unique population can guide the development of targeted prevention and intervention approaches.

Publications/References: Ehlers CL, Gizer IR, Gilder DA, et al. Measuring historical trauma in an American Indian community sample: contributions of substance dependence, affective disorder, conduct disorder and PTSD. *Drug and Alcohol Dependence.* 2013; 133:180–187. PMID: 23791028.

[http://linkinghub.elsevier.com/retrieve/pii/S0376-8716\(13\)00186-5](http://linkinghub.elsevier.com/retrieve/pii/S0376-8716(13)00186-5)

Criado JR, Gilder DA, Kalafut MA, Ehlers CL. Obesity in American Indian and Mexican American men and women: Associations with blood pressure and cardiovascular autonomic control. *Cardiovascular Psychiatry and Neurology.* 2013; 680687. PMID: 24024026.

<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/24024026/>

***Streptococcus mutans* and Dental Caries in Native American Children (Oral Health)**

Description: This is a multilevel prospective cohort study that explores risk factors for early childhood caries development in children of a Northern Plains Tribe to determine if the caries-causing bacteria, *Streptococcus mutans*, alone or in combination with social, behavioral, and environmental factors, increases the risk of early childhood caries. The potential benefit of this research is that strategies may be developed to prevent caries, using culturally-tailored approaches.

Strong Heart Family Study (Cardiovascular Disease)

Description: This is the largest multi-center longitudinal study on cardiovascular disease in AI populations. The project is currently focused on families and younger participants and the study of genetic contributors to diabetes and cardiovascular disease. The partners in this study are the University of Oklahoma Health Sciences Center, MedStar Health Research Institute, Texas Biomedical Research Institute, the Weill School of Medicine at Cornell, and the Missouri Breaks Industries Research, Inc. The tribal partners include Apache, Fort Sill Apache, Kiowa, Comanche, Wichita, Delaware, Caddo, Gila River Indian Community (Pima), Salt River Indian Community, Ak-Chin Indian Community, Oglala Lakota, Cheyenne River Sioux, and the Spirit Lake Tribe. The project is continuing surveillance for morbidity and mortality of the original cohort and the family cohort and maintaining stored samples. In addition, NIH supported a workshop in the summer of 2013 to introduce the data set to young investigators to encourage future collaborations with the Strong Heart Family Study.

Publications/References: Zhang Y, Lee ET, Howard BV, et al. Insulin resistance, incident cardiovascular diseases, and decreased kidney function among non-diabetic American Indians: The Strong Heart Study. *Diabetes Care*. 2013; 36:3195–3200. PMID: 23735722.
<http://www.ncbi.nlm.nih.gov/pubmed/23735722>

Yang J, Zhu Y, Lee ET, et al. Joint associations of 61 genetic variants in the nicotinic acetylcholine receptor genes with subclinical atherosclerosis in American Indians: A gene-family analysis. *Circ. Cardiovasc. Genet.*, 2013; 6:89–96. PMID: 23264444.
<http://www.ncbi.nlm.nih.gov/pubmed/23264444>

The Center for Genomics and Healthcare Equality (Genome)

Description: This center is developing methods for enhancing the benefits of genomic translation, with particular attention to the use of genomic technology to address population health and health disparities, particularly in northwestern U.S. AI/AN communities. Research at this center is (1) characterizing the range of challenges and opportunities in the translation process from genomic discovery to health benefits, with an emphasis on targeting benefits for medically underserved populations; (2) developing methods to build and evaluate university-community and interdisciplinary partnerships, including deliberative processes and strategies to identify common ground; (3) developing tools to assist decision-making about the clinical use and reimbursement of genomic health applications; (4) providing training opportunities to encourage the participation of researchers from underrepresented minorities in the center's research agenda; and (5) stimulating collaborative partnerships that may result in additional funded research addressing these and related questions.

Publications/References: James RD, McGlone West K, Madrid TM. Launching Native health leaders: Reducing mistrust of research through student peer mentorship. *Am J Public Health*. 2013 Dec; 103(12):2215–2219. PMID: 24134376.
<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/24134376/>

Hiratsuka V, Delafield R, Starks H, et al. Patient and provider perspectives on using telemedicine for chronic disease management among Native Hawaiian and Alaska Native people. *Int J Circumpolar Health*. 2013 Aug 5; 72. PMID: 23977642.
<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/23977642/>

Tuberculosis Diagnostics at the Point of Care (Infectious Disease)

Description: This study is developing a low-cost, simple, and rapid point of care (POC) test that detects tuberculosis (TB) and its resistance to first-line drugs, with the goal of improving TB diagnostics among minority communities. TB is a disease with significant health disparities. For every White person in the U.S., there are six AIs with TB. Underserved populations (which includes people of low socioeconomic status and racial and ethnic minorities) often have difficulty with follow-up visits to physicians, which can result in a lack of appropriate treatment for TB. Developing a diagnostic device that can identify TB at the POC will allow treatment to begin at the time of diagnosis. In FY 2013, this project simplified the microarray workflow, a necessary first step for translating microarray-based diagnostics into clinical practice.

Publication/Reference: Linger Y, Kukhtin A, Golova J, et al. Demonstrating a multi-drug resistant Mycobacterium tuberculosis amplification microarray. *J Vis Exp.* 2014 Apr 25; (86). PMID: 24796567.

<http://www.ncbi.nlm.nih.gov/pubmed/24796567>

Where Health and Horticulture Intersect: A Navajo Wellness Collaboration (Cancer)

Description: This project, supported through the ongoing Partnership for the Advancement of Cancer Research, brings together researchers at New Mexico State University (NMSU) and Fred Hutchinson Cancer Research Center (FHCRC) and members of the Navajo Nation in New Mexico. The study uses a cancer-related intervention to evaluate educational workshops, community gardens, and community outreach activities aimed to reduce obesity and obesity-related cancers in Navajo communities. The focus of the project is to improve the health and wellness of the Navajo people through a multi-component intervention that integrates cultural norms and traditional practices. The project is directly responsive to the overall goal of the NMSU/FHCRC partnership; it is increasing the capacity of NMSU investigators to conduct cancer research in a competitive environment and enhance the infrastructure at FHCRC for investigators to conduct cancer-related health disparities research to improve the quality of cancer health care of underserved populations.

Publication/Reference: Monograph on AI/AN Mortality for the *American Journal of Public Health* to be released in 2014. It includes authors from the Native community as well as CDC and NIH.

Training/Education

American Indian Higher Education Consortium (Workforce Development)

Description: The Biomedical/Biobehavioral Research Administration Development (BRAD) program provides outreach to faculty and staff from Tribal Colleges and Universities (TCUs) who are nominated by American Indian Higher Education Consortium to participate in a three-week workshop on the NIH campus. The participants join new BRAD grantees to become familiar with NIH policies and procedures, grants management issues, and leadership in research administration. This activity is intended to facilitate the development of research support infrastructures at TCUs and encourages full participation in the BRAD program.

American Indian Science and Engineering Society (Workforce Development)

Description: NIH exhibited at the American Indian Science and Engineering Society (AISES) 2013 National Conference, October 31–November 2 in Denver, Colorado. The theme of the conference was ELEVATE–New Technology–Timeless Wisdom–New Opportunities. There were 1,500 students in attendance from undergraduate and pre/postdoctoral programs. NIH research training and career development resources were provided to participants along with information about the scientific research portfolio through the various publication products. NIH also published an ad in the December issue of the *Winds of Change* magazine with a subscription reach to over 6,500 AISES members. The ad included information about career/employment opportunities.

Building Bridges: Health Science Education in Native American Communities (Workforce Development)

Description: This project is promoting student interest in the sciences, fostering a more science-literate public, and increasing the number of AIs entering health and science careers. Improvements for science instruction in classrooms serving AI students are occurring because hands-on, age-appropriate activities are being created and adapted. Teacher support through summer workshops, mentoring, and in-service education will facilitate implementation of these novel science strategies and the development of a research course for use in tribal schools.

Enhancing the Diversity of the NIH–Funded Workforce (Workforce Development)

Description: The Enhancing the Diversity of the NIH-Funded Workforce program aims to transform biomedical research training by developing and testing entirely new approaches to training and mentoring on a large scale. These approaches will build upon a considerable evidence base provided by social science research that demonstrates the powerful impact that psychosocial factors play in the pursuit of science careers and provides hypotheses and small-scale data about interventions that might ultimately have a transformative impact if implemented on a large scale.

Effective approaches will be widely disseminated for broader impact, transforming research training, and mentoring on a nationwide level. The program consists of three integrated initiatives: (1) Building Infrastructure Leading to Diversity (BUILD), a set of experimental training awards designed to learn how to attract students from diverse backgrounds into the training pipeline and to encourage their persistence to become future NIH-supported researchers; (2) the National Research Mentoring Network (NRMN), which will develop novel mentoring strategies, establish standards and training for mentors, and develop a diverse network of mentors and mentees across the country; and (3) the Coordination and Evaluation Center (CEC), which will work with BUILD and NRMN to determine what works and for whom, and will be responsible for disseminating lessons learned to the broad biomedical research training community. This program supported planning grants in FY 2013, with multi-year awards to be made in FY 2014.

Publication/Reference: <http://commonfund.nih.gov/diversity/index>

Indigenous HIV/AIDS Research Training (I-HART) Program (Behavioral/Mental Health)

Description: I-HART was developed to increase the number of AI/AN health researchers who successfully garner major grants for tribal priority health issues. The I-HART program targets

early and mid-career AI/AN community/tribal-based researchers and AI/AN university-based researchers to hone their competitive grant-writing skills for mental health and HIV/AIDS research grant acquisition. As of FY 2013, the program had recruited 14 fellows who are paired with experienced senior scientists and participate in a number of training activities to develop skills in areas including grant-writing, research, and publications.

Publications/References: Pearson CR, Cassels S. Place and sexual partnership transition among young American Indian and Alaska Native women. *AIDS Behav.* 2014 Aug; 18(8):1443–1453. PMID: 2427679.

<http://link.springer.com/article/10.1007%2Fs10461-013-0667-x>

Pearson CR, Walters KL, Simoni JM, et al. A cautionary tale: Risk reduction strategies among urban American Indian/Alaska Native men who have sex with men. *AIDS Educ Prev.* 2013 Feb; 25(1):25–37. PMID: 23387949.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3951888/>

Mentoring and Supporting Native Student Development (Substance Related Disease)

Description: NIH supported several mentoring and development programs related to substance abuse research including: (1) a partnership with Harvard Medical School to improve biomedical science education and training opportunities for AI high school students; (2) Native to Native Mentoring, a mentoring program developed by an AI and AN scholars work group at NIH; and (3) a program at the University of Washington to support the career development of researchers investigating behavioral aspects of HIV research within ethnic (emphasizing Native populations) and sexual minority populations.

National Multicultural Outreach Initiative (Musculoskeletal Disease)

Description: The [National Multicultural Outreach Initiative](#) developed a set of 2013 multicultural health planners, including a planner tailored for AIs, ANs, and Native Hawaiians (NHs). NIH partnered with the IHS, the Administration on Aging/Administration for Community Living, other HHS agencies, and tribal organizations to distribute 22,000 AI/AN/NH planners to Native communities nationwide.

Publication/Reference: AI/AN/NH Multicultural Outreach Initiative Health Planner. (Online version of 2013 planner has been archived. Access the 2014 planner at:

<http://www.niams.nih.gov/multicultural/AIANNH/default.asp>)

Native Elder Research Center (Workforce Development)

Description: The Native Elder Research Center (NERC) is the only Resource Center for Minority Aging Research (RCMAR) devoted to Native elder health. This unique program is designed to train the next generation of Native investigators to study the pressing gerontological health issues in AI/ANs. The NERC/RCMAR is located in the Centers for American Indian and Alaska Native Health in the Colorado School of Public Health at the University of Colorado-Denver and at the Center for Clinical and Epidemiological Research at the University of Washington.

Publication/Reference:

<http://www.ucdenver.edu/academics/colleges/PublicHealth/research/centers/CAIANH/NERC/Pages/nerc.aspx>

Science Education Partnership Award (SEPA) in New Mexico (Workforce Development)

Description: American Indians and Hispanics have historically been underrepresented in the scientific workforce and recently the number of AI and Hispanic students graduating with science and engineering bachelor's degrees has steadily declined from high Hispanic enrollment institutions and Tribal Colleges. This challenge is addressed through a multi-faceted science enrichment program aimed toward students enrolled in tribal and non-tribal (predominantly Hispanic) middle schools, their science teachers, families, and the community at large in rural New Mexico. The program is a school- and community-based health education and participatory research program that incorporates intergenerational and science inquiry-based learning experiences to explore research, health promoting nutrition, and physical activity for the prevention of chronic diseases.

Summer Internship for Native Americans in Genomics (Workforce Development)

Description: NIH supports the Summer Internship for Native Americans in Genomics (SING) program for AI college students with a background and interest in genomics. This training course, entitled *Guiding Indigenous Students in Next-Generation Genomic Studies*, seeks to train AI students in genomic and bioinformatic analyses with a focus on research with indigenous communities. The long-term goal of SING is to develop the next generation of intellectual leaders in genomic analysis.

Summer Internship Program in the Neurological Sciences (Workforce Development)

Description: NIH supports an annual summer internship program to provide academically talented and diverse high school, undergraduate, graduate, and medical students with a stimulating and rewarding research experience and to encourage their pursuit of advanced education and future careers in neurological science research. The Summer Program in the Neurological Sciences has achieved substantial success recruiting AIs. Additionally, the program has developed relationships with schools and Tribal Councils on reservations, and has extended outreach to areas densely populated by Native students. NIH staff have visited Red Cloud School on the Pine Ridge Reservation in South Dakota, built relationships with St. Michael Indian School serving the Navajo population in Arizona and New Mexico, and established contact with Seneca Nation's Department of Education program in western New York and the Nez Perce Tribal Education Department in Lapwai, Idaho. NIH hosted 11 Native students during the 2013 Program, including four Lakota, three Navajo, one Blackfoot, one Pueblo, one student from the Lumbee Tribe of North Carolina, and one student from the Pauma Band of Luiseno in California. Most of the more than 30 AI participants since 2007 have had their careers tracked; of those, all but five remain in scientific fields.

The Partnership for Native American Cancer Prevention (Cancer)

Description: The Partnership for Native American Cancer Prevention (NACP) between University of Arizona Cancer Center and Northern Arizona University seeks to reduce the burden of cancer among AIs by developing AI cancer researchers and health professionals who can become leaders in the field. The NACP Training Program is increasing the number of AIs who are pursuing cancer-related careers and biomedical professions by: (1) developing effective

transition steps to increase the number of AI students in the cancer research and health sciences pipeline and (2) developing and implementing programs to improve the retention and graduation of AI undergraduate students and prepare them to enter graduate programs in cancer-related research and health care. In FY 2013, 35 undergraduate students, including 10 AI students, joined laboratories of NACP investigators for training in cancer research. In the same year, eight graduate students, including seven AIs, carried out their research projects with NACP research mentors.

Findings: An evaluation of the program in 2013 revealed a six-year baccalaureate graduation rate for NACP AI students to be 63 percent, which is significantly higher than the national average for AI students (38 percent). The NACP Training Program has had a positive impact on AI students at partner institutions by facilitating increased participation of the students in NACP research projects, increased retention of AI students in the baccalaureate degree program, and a significant increase in their graduation rate.

Trans-NIH American Indian/Alaska Native Health Communications & Information Work Group (Miscellaneous)

Description: Founded in 2005, the Trans-NIH American Indian/Alaska Native Health Communications and Information Work Group provides a forum for health education and communications staff from across NIH to share strategies and learn effective approaches to developing and disseminating health information designed for AI/AN communities. FY 2013 activities of the work group include partnering with the Office of Equity, Diversity, and Inclusion to celebrate Native American Heritage Month in November with a seminar series entitled “Healing Our Community through Narrative: The Power of Storytelling.” The seminar featured a keynote speaker and exhibits promoting AI/AN health resources. The work group also conducted two mailings of NIH health information to 650 AI/AN Community Health Representatives, who serve as informal health educators and patient liaisons for their communities. The purpose of these mailings is to increase awareness among AI/AN intermediaries about the availability of health information from NIH.

Publications/References: Trans-NIH AI/AN Health Communications and Information Work Group.

http://www.niams.nih.gov/About_Us/Mission_and_Purpose/Community_Outreach/Multicultural_Outreach/AIAN_WG/default.asp

Healing our Community through Narrative: The Power of Storytelling.

<http://videocast.nih.gov/summary.asp?Live=13667&bhcp=1>

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 was established in 2013 to bring together program officers from across NIH to address challenges, as well as share successes, in supporting and advancing AI/AN/NH research. The group’s aim is to facilitate discussion, brainstorm ideas, and coordinate efforts to support researchers who work with AI/AN/NH communities. The monthly meetings provide opportunities for different institutes and centers at NIH to spotlight their respective research and training activities; highlight recent and upcoming funding opportunity announcements; and advertise upcoming seminars, symposia, and conferences.

Uranium in Food Grown in an American Indian Community (Environmental Health)

Description: The broad objective of this pre-doctoral fellowship is to identify the health risks and impact of uranium contamination in harvested animals and plants. More than 1,000 abandoned uranium mines, structures, and debris contaminate the land and vegetation on the Diné (formerly Navajo) reservation in northwestern New Mexico. The research will examine dietary behaviors, compare uranium levels in food from high versus low contamination areas, and disseminate findings to the Diné leadership and community.

Worker Training Program (Miscellaneous)

Description: The Worker Training Program (WTP) funds a national network of over 100 non-profit 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. Among these workers are AIs including tribal employees of natural resource, law enforcement, emergency medical, fire service, public works agencies and other hazardous materials and transportation workers. During FY 2013, the WTP has trained nearly 1,200 AIs. For example, the Alabama Fire College trained nearly 700 AIs from 14 tribes to protect themselves and their communities from hazardous materials encountered in workplaces and during emergency response operations through their partnership with the Native American Fish and Wildlife Society. Key training occurred at Confederated Tribes of the Umatilla Indian Reservation (Cayuse, Walla Walla, and Umatilla) and at three tribes in Albuquerque, NM: the Jicarilla Apache Tribe, the Eight Northern Indian Pueblo Council, and the Pueblo of Sandia Tribe.

Technical Assistance/Capacity Building

Assisting the Narragansett Tribe with Emergency Preparedness (Miscellaneous)

Description: In 2013, the Brown University Superfund Research Program worked with the Narragansett Tribe to address the tribe's need for emergency planning. The Tribal Council adopted the National Incident Management System and the Narragansett Chief appointed an Emergency Planning Coordinator. A committee was formed, and the Brown University Community Engagement Core (CEC) facilitated FEMA training. This group provided emergency preparedness information at the Elders' Annual Meeting. Emergency planning and drills were conducted with local, state, and federal officials. The CEC distributed emergency preparedness information to thousands of tribal members and community visitors at their annual powwow in August.

Environmental Health Information Partnership (Environmental Health)

Description: The Environmental Health Information Partnership (EnHIP) strengthens institutional capacity to reduce health disparities through use of information technology and environmental health information. The program includes three Tribal Colleges: Oglala Lakota College (South Dakota), Diné College (Arizona), and Haskell Indian Nations University (Kansas), as well as the University of Alaska, Anchorage. Faculty, staff, and students received training in toxicology, environmental health, and other electronic resources, and participated in meetings about scientific issues, government and non-government programs, and funding opportunities.

Native Voices: Native Peoples' Concepts of Health and Illness Interactive Traveling Exhibition (Miscellaneous)

Description: During FY 2013, NIH completed design, development, and fabrication of the Native Voices Traveling Exhibition that includes six banners and six iPads. The iPads provide the entirety of the Native Voices video content to anyone anywhere the traveling exhibition may visit. Pilot testing and evaluation will take place at four sites: October 2013 at the Cankdeska Cikana Community College, Spirit Lake Dakota Nation, Ft. Totten, ND; June 2014 in conjunction with the National Congress of American Indians Mid-Year Conference in Anchorage, AK, and subsequently the Alaska Native Heritage Center, Southcentral Foundation, and the WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho) Medical School Program at the University of Alaska at Anchorage; July 2014 at the Queen's Medical Center in Honolulu, HI, and subsequently at the University of Hawaii John A. Burns School of Medicine, and then the Hamilton Library at the University of Hawaii at Manoa Campus; and August 2014 at the Chickasaw Nation, Artesian Gallery, in Sulphur, OK. Following pilot testing, the Native Voices Traveling Exhibition is expected to be made available nationally.

Sudden Infant Death Syndrome (SIDS) Risk Reduction in Northern Native Communities (Infant/Child Health)

Description: In collaboration with Native American Management Services, with input from AI/AN parents, the *Healthy Native Babies Project* developed an interactive CD ROM and training manual for dissemination in the five northern tier IHS areas with the highest rates of SIDS deaths. The purpose of the project was to enable the promotion of adaptable, culturally-appropriate SIDS risk-reduction behaviors among young parents.

Community-Based Participatory Research

A Community Trial in Alaska to Prevent Youth's Use of Legal Products to Get High (Substance Related Disease)

Description: This randomized clinical trial tests the efficacy of a condensed version of the integrated Community Prevention Model (CPM). CPM consists of community mobilization and environmental strategies to prevent Alaskan youth in the 5th through 7th grades in frontier communities from using inhalants and ingestible harmful legal products (HLPs) to get high. Community mobilization strategies are designed to enable community leaders and groups to take action, while environmental strategies target retail outlets, homes, and schools to address community norms and values regarding youth use of HLPs. They also address adoption and enforcement of community policies and restrictions and their impact on youth access to HLPs. Study findings are informing intervention efforts that reach beyond the school context to prevent youth's use of inhalants and other harmful legal products in remote rural and sustainable communities across the U.S.

Publications/References: Collins DA, Johnson KW, Shamblen SR. Examining a home environmental strategy to reduce availability of legal products that can be misused by youth. *Subst Use & Misuse*. 2012 Oct; 47(12):1339–1348. PMID: 22943304.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC22943304/>

Johnson KW, Grube JW, Ogilvie KA, et al. A community prevention model to prevent children from inhaling and ingesting. *Eval Program Plann.* 2012 Feb; 35(1):113–123. PMID: 22054531. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC22054531/>

Academic/Community Partnership on Alaska Native Violence Prevention (Behavioral/Mental Health)

Description: The Academic/Community Partnership on Alaska Native Violence Prevention is building a sustainable partnership between the Institute for Circumpolar Health Studies at the University of Alaska, Anchorage and the Council of Athabaskan Tribal Governments (CATG) to conduct community-based participatory research related to evidence-based prevention and intervention strategies to reduce violence and health disparities related to violence. The CATG is a tribal organization that provides health services to the AN residents of the Yukon Flats Region of Alaska. AI/AN people are 2.5 times as likely as U.S. Whites to be victims of violence. By the end of the three-year partnership development initiative, the partnership plans to develop and seek financial support for at least one community-based participatory research project based on identified community priorities related to violence and violence-related health disparities.

Central Plains Center for American Indian Health Disparities (Cancer)

Description: The Central Plains Center for American Indian Health Disparities (CPC-AIHD) conducts community-based participatory research to address health issues important to AI communities, including risk factors such as mammography screening. The CPC-AIHD created the American Indian Health Research and Education Alliance (AIHREA) with partners from academic institutions, community organizations, and regional tribes.

Findings: Recent findings include breast cancer screening perceptions among AI women. For AI women under 40, the barriers to screening included lack of knowledge about (1) the details of screenings, (2) their risks for getting breast cancer, and (3) cost. For AI women over 40 years old, women desired increased professionalism, empathy, and cultural awareness from mammography technologists.

Publications/References: Filippi MK, Ndikum-Moffor F, Braiuca SL, Goodman T, et al. Breast cancer screening perceptions among American Indian women under age 40. *J Cancer Educ.* 2013 Sep; 28(3):535–540. PMID: 23813490.

<http://link.springer.com/article/10.1007%2Fs13187-013-0499-4>

Ndikum-Moffor FM, Braiuca S, Makosky Daley C, Gajewski, BJ, et al. Assessment of mammography experiences and satisfaction among American Indian/Alaska Native women. *Women's Health Issues.* 2013; 23:e395–e402.

[http://www.whijournal.com/article/S1049-3867\(13\)00075-3/fulltext](http://www.whijournal.com/article/S1049-3867(13)00075-3/fulltext)

Community-Based Risk Assessment of Exposure to Contaminants via Water Sources on the Crow Reservation (Environmental Health)

Description: This community-based participatory research project at Little Big Horn College is testing well and spring waters for chemical and microbial contaminants. This water is used for a variety of purposes by residents on the Crow Reservation. *E. coli* strains were isolated in river samples as well as in manure samples collected from cattle feeding near the Little Big Horn watershed. Nineteen manure isolates matched the serotype isolate collected from the river samples, suggesting that cattle feeding areas may have an impact on water quality.

Publications/References: Doyle JT, Redsteer MH, Eggers MJ. Exploring effects of climate change on Northern Plains American Indian health. *Clim Change*. 2013 Oct; 120(3). PMID: 24265512.

<http://www.ncbi.nlm.nih.gov/pubmed/?term=24265512>

Hamner S, Broadaway SC, Berg E, et al. Detection and source tracking of Escherichia coli, harboring intimin and Shiga toxin genes, isolated from the Little Bighorn River, Montana. *Int J Environ Health Res*. 2014 Aug; 24(4):341–362. PMID: 24044742.

http://www.tandfonline.com/doi/abs/10.1080/09603123.2013.835030?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed&#.U_dNi2O1ET0

Ethics of Dissemination: Communicating with Participants about Genetics Research (Obesity)

Description: This project is examining the best ways to communicate research results ranging from conventional clinical measures to genetic and genome-scale research findings within an established community-based participatory research project conducted by the Center for Alaska Native Health Research (CANHR) at the University of Alaska Fairbanks. The CANHR study is a community-based participatory research project partnering with more than 1,300 Yup'ik Eskimos and their healthcare providers at the Yukon Kuskokwim Health Corporation in southwest Alaska. The CANHR study is focused on the identification of, and interaction among, genetic, behavioral, and nutritional risk factors that lead to obesity, diabetes, and cardiovascular disease in Yup'ik Eskimos. By establishing a Community Planning Group (CPG) of Yup'ik Eskimo representatives and an interdisciplinary partnership with investigators at the Center for Genomics and Healthcare Equality at the University of Washington, this project is collectively defining a culturally meaningful framework that categorizes CANHR results, as well as determining a communication plan that matches dissemination activities with research result categories.

Publication/Reference: Hoefft TJ, Burke W, Hopkins SE, et al. Building partnerships in community-based participatory research: Budgetary and other cost considerations. *Health Promot Pract*. 2014 Mar; 15(2):263–270. PMID: 23632077.

<http://hpp.sagepub.com/cgi/pmidlookup?view=long&pmid=23632077>

Kansas Community Cancer Disparities Network (Cancer)

Description: The Kansas Community Cancer Disparities Network (KCCDN) at the University of Kansas Medical Center focuses on reducing cancer disparities among the Kickapoo and Prairie Band Potawatomie communities in northeast Kansas by increasing awareness about cancer prevention, screening, and risk-reduction in AI communities. Using community-based participatory research methods, KCCDN is conducting a randomized controlled trial testing the efficacy of a novel intervention based on the “implementation intentions” construct to promote breast cancer treatment. An additional pilot study seeks to enhance knowledge, awareness, and interest in cancer clinical trials among AI communities.

Publications/References: Nazir N, Bevil B, Pacheco CM, et al. Characteristics of American Indian light smokers. *Addictive Behaviors*. 2014 Jan; 39(1):358–361. PMID: 24157425.

<http://www.sciencedirect.com/science/article/pii/S0306460313003146>

Greiner KA, Friedman DB, Adams SA, et al. Effective recruitment strategies and community-based participatory research: Community networks program centers' recruitment in cancer prevention studies. *Cancer epidemiology, Biomarkers & Prevention: A publication of the American Association for Cancer Research*, cosponsored by the American Society of Preventive Oncology. 2014 Mar; 23(3):416–423. PMID: 24609851.

<http://cebp.aacrjournals.org/content/23/3/416.long>

Native American Engagement in HIV Clinical Research (NAEHCR) Project (Workforce Development)

Description: The Native American Engagement in HIV Clinical Research project (NAEHCR) is intended to increase the participation of AIs in NIH-funded HIV/AIDS clinical trials. In FY 2013, NAEHCR was expanded to San Francisco and Chicago with kick-off events and the first Native American Community Consultant meetings, as well as a celebration of National Native American HIV/AIDS Awareness Day. Focus groups were held and community surveys were collected for formative research; data were analyzed, reviewed, and shared with the communities; and a “Cultural Humility Training” was conducted with researchers. The project was also expanded to Dallas and Baltimore and included the development of community surveys, introductory meetings, kick-off events, and presentations/trainings. The development of a guidance document for cultural humility training was initiated, and presentations were made at conferences, including: Circle of Harmony, HIV and Social Work, and U.S. Conference on AIDS. Official NAEHCR activities in Seattle and Denver were completed in FY 2013; many relationships developed during the project have yielded post-project collaborations, and some activities have continued, including Native community consultations, participation at local powwows, and survey analyses.

Native Children Always Ride Safe Study (Infant/Child Health)

Description: AI/AN children are disproportionately affected by motor vehicle fatalities partly due to riding in vehicles improperly restrained. The Native Children Always Ride Safe Study (Native CARS), a community-based participatory research intervention, demonstrated success at improving child passenger safety by an average of 50 percent in three tribes that implemented interventions between 2009 and 2011, significantly higher than the average 12 percent increase observed in three comparison tribes. In addition, the project led to the development of tribal child passenger restraint law and order codes in three tribes. This project is currently expanding the activities of the Native CARS partnership (Northwest Portland Area Indian Health Board, Northwest tribes, Harborview Injury Prevention Research Center at University of Washington) and leveraging the ongoing activities of the Northwest Tribal Injury Prevention Coalition to disseminate the protocols, tools, and intervention materials for other Northwest tribes and potentially benefit tribes nationwide.

Publication/Reference: Lapidus JA, Smith NH, Lutz T, Ebel BE; Native CARS Study Group. Trends and correlates of child passenger restraint use in 6 Northwest tribes: The Native Children Always Ride Safe (Native CARS) project. *Am J Public Health*. 2013 Feb; 103(2):355–361. PMID: 23237177.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3558765/>

Qasgiq: Dissemination Using Yup'ik Indigenous Implementation Strategies (Behavioral/Mental Health)

Description: Alcohol use disorders and suicide show substantial health disparities in AI/AN communities, where suicide and unintentional injury are the leading cause of death for AN people ages 10 to 39. Qasgiq, the Yup'ik communal living structure, embraces traditional ways of coming together as a community to accomplish important tasks. This project uses the qasgiq strategy to develop an intervention to prevent suicide and alcohol abuse among rural Yup'ik youth. This research has created and tested a culturally-grounded, theoretical model using a set of culturally appropriate measures for studying the process of change and outcome with 413 rural AN youth. Research on dissemination included a feasibility analysis which showed that the intervention could be implemented in different rural AN communities. Even when youth only participated in a portion of the intervention activities, observable increases in protective factors were shown. There was variation in the degree of results across communities, suggesting that the intervention needs sufficient resources in each community to be implemented appropriately.

Publications/References: Allen J, Mohatt GV, Fok CC, Henry D, Burkett R; People Awakening Team. A protective factors model for alcohol abuse and suicide prevention among Alaska Native youth. *Am J Community Psychol.* 2014 Sep; 54(1–2):125–139. PMID: 24952249.

<http://link.springer.com/article/10.1007%2Fs10464-014-9661-3>

Mohatt GV, Fok CC, Henry D; People Awakening Team, Allen J. Feasibility of a community intervention for the prevention of suicide and alcohol abuse with Yup'ik Alaska Native youth: The *Elluam Tungiinun* and *Yupiucimta Asvairtuumallerkaa* Studies. *Am J Community Psychol.* 2014 Sep; 54(1–2):153–169. PMID: 24952248.

<http://link.springer.com/article/10.1007%2Fs10464-014-9646-2>

Regional Native American Community Networks Program (Cancer)

Description: The Regional Native American Community Networks Program (RNACNP) project, headquartered at the University of Washington, works with tribal organizations in an eight-state region (Alaska, Washington, Oregon, Idaho, Montana, Wyoming, North Dakota, and South Dakota) to address the challenges of cancer-related education and research. The overall project provides cancer prevention, outreach, and health promotion activities; on-site and remote delivery of cancer education; community-level research on colorectal cancer screening and health communication; and research training opportunities for AI/AN investigators and students. RNACNP investigators have developed mixed media materials (for example, a digital story narrated by tribal health leaders featuring members of the community who have direct personal experience with colorectal cancer screening and/or cancer diagnosis) to implement a cancer prevention intervention.

Publication/Reference: Montgomery M, Manuelito B, Nass C, et al. The Native comic book project: Native youth making comics and healthy decisions. *Journal of Cancer Education.* 2012 Apr; 27 Suppl 1:S41–46. PMID: 22259070.

<http://dx.doi.org/10.1007/s13187-012-0311-x>

Southcentral Foundation Research Center for Alaska Native Health (Workforce Development)

Description: The Southcentral Foundation Research Center for Alaska Native Health is an innovative research branch of an AN-run healthcare organization. Activities in the center are positioning the tribal health organization and AI/AN researchers involved to become independent, competitive applicants for future research funding focused on community-based

participatory research approaches to acquire new knowledge to improve AI/AN health. Six independent and synergistic efforts across three cores and three research projects on AI/AN tobacco and alcohol misuse are underway.

Spirit of EAGLES Community Network Program II (Cancer)

Description: Research conducted by the Mayo Clinic and the Alaska Native Tribal Health Consortium at the Alaska Native Medical Center in Anchorage uses biomarker feedback to motivate tobacco cessation in pregnant AN women. The research project investigates biomarkers of tobacco exposure in maternal-infant paired specimen samples obtained from pregnant women who smoke during pregnancy, those who use smokeless tobacco, and non-tobacco users. In addition, outreach efforts focus on reducing the burden of cancer and other co-morbidities that affect the AI/AN population by maintaining and expanding networks of community and national partnerships dedicated to developing effective community-driven strategies to improve cancer control.

Publications/References: Pruthi S, Stange KJ, Malagrino GD, Jr., Chawla KS, et al. Successful implementation of a telemedicine-based counseling program for high-risk patients with breast cancer. *Mayo Clinic Proceedings*. 2013 Jan; 88(1):68–73. PMID: 23274020.

<http://www.sciencedirect.com/science/article/pii/S0025619612010403>

Nowakowski KE, Tilburt JC, Kaur JS. Shared decision making in cancer screening and treatment decisions for American Indian and Alaska Native communities: Can we ethically calibrate interventions to patients' values? *Journal of Cancer Education*. 2012 Dec; 27(4):790–792. PMID: 23055128.

<http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/23055128/>

Substance Use and Mental Health Collaborative for Rural American Indian Adolescents (Substance Related Disease)

Description: Rural AI adolescents have disproportionate health disparities in substance abuse disorders, suicide, and less access to mental health prevention and treatment than non-AI youth. This collaboration with the Spokane Tribe uses community-based participatory research principles to develop culturally relevant intervention strategies to improve mental health and substance abuse disparities for the rural AI adolescents in a medically underserved and health provider shortage area of Washington State. The goal of the project is to develop culturally congruent interventions to address these substance use and mental health disparities by (1) establishing partnerships between the tribe, community service providers, and trans-disciplinary research team; (2) using digital storytelling and community assessment methods to identify priorities for this population; and (3) implementing and evaluating pilot projects.

The Healing of the Canoe (Substance Related Disease)

Description: The Healing of the Canoe intervention addresses two primary areas of concern for tribal youth: prevention of alcohol and drug abuse, and the need for increased cultural and community identity. Pilot testing with middle school and high school youth demonstrated reductions in substance use and increases in optimism and hope. Currently, the Healing of the Canoe project is disseminating this intervention developed using community-based participatory research to the Suquamish Tribe (ST) and Port Gamble S'Klallam Tribe (PGST). Information about the Healing of the Canoe project is being shared with a broad audience of AI/AN communities (including the ST and PGST), organizations, and agencies through a project

website and through targeted listservs and social networking. The project has also completed several digital stories on “How to Engage Community Partners” to be used with trainees and posted to social media sites such as YouTube.

Tribal Solutions for Native Youth Affected by Adverse Childhood Experiences (Infant/Child Health)

Description: This project with the Albuquerque Area Indian Health Board is focused on the needs of children who have experienced adverse childhood experiences that contribute to poor health in childhood as well as poor health outcomes in adulthood. The primary goal of this research project is to design and implement a culturally appropriate intervention that will improve the health and well-being of AI children who have experienced adverse events, based on findings from a previous feasibility study. The project builds on existing research partnerships between tribes and University of New Mexico faculty, and establishes a new relationship by including the Albuquerque Area Southwest Tribal Epidemiology Center and its expertise in research, public health practice, and epidemiology.

Research-Related Projects & Findings

Office of the Assistant Secretary for Health/Office on Women's Health (OWH)

OWH provides national leadership and coordination to improve the health of women and girls through policy, education, and model programs. OWH supports research and evaluation of model programs and interventions in communities across the country. The projects highlighted below focus on the unique and specific health needs of women in AI/AN communities. The research is community-based, collaborative, and cognizant of the unique needs of the communities impacted.

Research Projects & Findings

Training/Education

Project Connect (Behavioral/Mental Health)

Description: Project Connect is a national initiative to build collaborations between the public health and domestic violence fields. Project Connect funds five tribal communities to implement the initiative, each of which are building partnerships with Native domestic violence/sexual assault agencies and healthcare systems to improve the community response to domestic and sexual violence. Evaluation of the initiative consists of tracking policy and organizational practice changes, provider pre-, post, and follow-up surveys from trainings, and anonymous healthcare client surveys.

Findings: To date, five Native sites (Little Traverse Bay Band of Odawa Indians, Nooksack Tribal Health Clinic, Passamaquoddy Health Center, The Queen’s Medical Center, and Washoe

Tribe of Nevada and California) have completed 141 provider pre-training surveys, 142 post-training surveys, and 72 follow-up surveys. At the post-training time point, 98 percent of providers stated they agree or strongly agree that attending the Project Connect training increased their understanding of the impact of domestic violence and sexual violence on health. At the pre-training time point, 8.7 percent stated they talked to their patients about domestic violence at least 75 percent of the time. At the follow-up time point, that frequency increased to 32.5 percent. A total of 189 anonymous client exit surveys have been completed with 87.5 percent reporting receiving either the *We Are Sacred* or the *Is Your Relationship Affecting Your Health?* palm-sized safety cards, and 90.8 percent of those who received the card(s) responded that they would give the card to a friend, sister, or relative having difficulty in their relationship. Client attitudes towards the Project Connect-initiated conversations around relationships were also assessed and 79.4 percent of clients believed that it was helpful for healthcare providers to talk about good and bad relationships with them. A resounding 87.8 percent of clients also reported that they felt safe coming to the specified clinic or health center.

Another point of inquiry revolved around provider and client perceptions of racism within their community. When asked about whether racism exists in their community, 79.1 percent of providers and 49.2 percent of clients believed racism does exist within their community. Clients were also asked whether or not they believed this racism affected their health; only 14.4 percent responded that racism does affect their health. When asked about the severity of racism in their community, nearly half (44.8 percent) of providers believed that the racism was moderate, significant (28.1 percent), compared to minor (27.1 percent). A full analysis around the racism point of inquiry will be completed at the end of the project year.

Community-Based Participatory Research

Coalition for a Healthier Community (Obesity)

Description: The Coalition for a Healthier Community Initiative (CHC) awarded 10 grants to coalitions to address chronic health disparities affecting women and girls to organizations in communities across the country. The goal of the CHC grantees is to produce community-wide behavior change linked to Healthy People 2020, a set of 10-year national objectives for improving the health of all Americans. The coalitions educate consumers on how to improve specific health behaviors, such as their diet and level of physical activity. The programs and services provided by each coalition are carefully evaluated, so successes can be shared, adapted, or replicated by other communities.

Utah Women and Girls (UWAG) was organized to reach women in diverse communities. The coalition includes the University of Utah faculty, staff and graduate students, leaders from five diverse communities (African, African American, American Indian, Hispanic, and Pacific Islander), Utah Department of Health staff, and the Utah Women's Health Coalition. Using community-based participatory research, capacity-building, sustainability, and multi-directional learning, UWAG designed a randomized trial to assess effectiveness (including cost-effectiveness) of a peer-led intervention. Using an evidence-based program that has been effective in diverse communities (*A New Leaf*), women from each community were recruited and trained to be community wellness coaches. Participants were then randomized into a high-intensity (meet with coach monthly) or low-intensity intervention (meet with coach quarterly for one year).

Utah women from most minority racial/ethnic groups experience high rates of overweight and obesity, a focus area of this intervention. Utah is home to approximately 45,000 AIs, and just under one-third (32.8 percent) of AI women are obese, compared to 23 percent of Utah women overall. Approximately one-third of all Utah AI/AN women reside in Salt Lake County.

Findings: Outcome measures examined to date for this intervention include changes in clinical markers and self-reported behavior changes, self-efficacy, and changes in children's health behaviors. In 2013, 28 AI/AN women had enrolled in the study (out of a target of 80), but only 10 had 4-month data available and none had 8 or 12 month data available; 93 percent of women were overweight/obese at baseline with 74 percent being obese. Follow-up data were not available for 2013, but subsequent data show that the vast majority of all study participants felt they were successful/very successful with their goals, more than half increased the number of fruits/vegetables eaten per day, increased their weekly physical activity time, and had a measured weight loss between baseline and 4 months. Analysis of 4, 8, and 12 month data is ongoing as more women complete the study.

Training/Education

In Community Spirit – HIV Prevention for Native Women Living in Rural and Frontier Indian County (Behavioral/Mental Health, Infectious Disease, Substance Related Disease)

Description: In Community Spirit is a gender-specific HIV prevention education project that integrated the strengths of traditions, values, culture, and spirituality indigenous to the targeted communities. This initiative supports efforts designed to promote community empowerment by building the infrastructure and capacity of Native and tribal organizations to improve services to Native women experiencing intimate partner violence, alcohol and other substance use/abuse, and STDs.

OWH funded six Native organizations: First Nations Community HealthSource (Albuquerque, NM); the National Indian Women's Health Resource Center (Tahlequah, OK); Inter Tribal Council of Arizona, Inc. (Phoenix, AZ); Salish Kootenai College Nursing Department (Pablo, MT), Planned Parenthood of Minnesota/North Dakota/South Dakota (St. Paul, MN); and the National Native American AIDS Prevention Center (Denver, CO) to implement these programs. These organizations will receive their last year of funding in FY 2014. These grantees have been successful in strengthening collaborations/partnerships to increase outreach and HIV education and service delivery to Native women.

Office of Minority Health (OMH)

The Office of Minority Health (OMH) was created in 1986 as one of the most significant outcomes of the Report of the Secretary's Task Force on Black and Minority Health and was most recently reauthorized by the Patient Protection and Affordable Care Act in 2010. The mission of OMH is to improve the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities. The following AI/AN projects, funded by OMH are research-related actions that advance the mission of OMH.

American Indian/Alaska Native Health Disparities Program

In FY 2012 OMH awarded \$1.2 million through its American Indian/Alaska Native Health Disparities Program. These grants are intended to improve the effectiveness of efforts to eliminate health disparities for American Indian and Alaska Native communities. The intention for this funding opportunity is to strengthen the capacity of Tribal Epidemiology Centers (TEC) and Urban Indian Health Programs (UIHPs) to: collect and manage data more effectively; better understand and develop the link between public health problems and behavior, socioeconomic conditions, and geography; and create a pipeline program for students to increase racial and ethnic diversity in the public health and biomedical sciences professions. The TECs and UIHPs were identified for this program because they are uniquely positioned to be effective in disease surveillance and control programs, assessing the effectiveness of public health programs and recognizing the significance and complexities of tribal communities, and understanding their distinct operating systems.

In FY 2013, the AI/AN Health Disparities Program supported projects that enhanced the TECs' and UIHPs' capacity to: 1) carry out disease surveillance, including the interpretation and dissemination of surveillance data; 2) address vital statistics needs; 3) conduct epidemiologic analysis; 4) investigate disease outbreaks; 5) develop disease control and prevention strategies and programs; and/or 6) coordinate with other health agencies in the region.

In addition, to building their data capacity, TECs and UIHPs formed collaborative partnerships and alliances to improve access to quality health and human services, and designed programs to increase the number of AI/AN serving as health professionals, para-professionals and researchers.

The program began September 2012 and is a five-year program. Listed below are the six funded organizations:

Organization	State	Funding
Oklahoma City Area Inter-Tribal Health Board	OK	\$190,000
Northwest Portland Area Indian Health Board	OR	\$190,000
United South and Eastern Tribes, Inc.	TN	\$190,000
Alaska Native Tribal Health Consortium	AK	\$190,000
Seattle Indian Health Board	WA	\$190,000
Inter-Tribal Council of Arizona, Inc.	AZ	\$250,000

Emerging Evidence of Intervention Effectiveness:

- Northwest Portland Area Indian Health Board:** The grantee has developed a data linkage process that is helping to identify misclassified AI/ANs in other state health datasets, such as birth and death data files. State health data files are being linked to the Northwest Tribal Registry using LinkPlus 2.0. Depending on the dataset, different variables are selected, but common variables include last name, first name, middle name, social security number, birthdate, and sex. A summary table produced by the grantee shows that the state-level health datasets are misclassifying AI/ANs mostly as whites, with more than half of the matched cases in the Oregon Childhood Blood Lead Test Registry misclassified. This summary table also highlights the percent increase of identified AI/ANs in each dataset. The grantee anticipates that these data linkages will improve the accuracy of health data for the Northwest AI/AN tribes and will help tribal leadership to better understand and access current information on their communities' health.
- United South and Eastern Tribes (USET):** To enhance knowledge of health disparities, USET has been working on the development of the interactive Population Health Data (PHD)-Portal to serve as a data monitoring center, a resource for stakeholders, and a channel for collaborative communication among users. The PHD-Portal went live in January 2014 and was made available to all 26 Tribal Health Directors. Initial Google analytics data show that Tribal Health Directors are using and interested in (based on time spent on the site) the portal. The USET anticipates that the portal will help support programs to monitor and reduce different health disparities. Each of the tribes are able to view the health indicators specific to their community that will help them make decisions on how disparities should be prioritized and the types of programs that should be developed to meet the needs of their community. The portal creates a unique opportunity for the individual tribes to see and handle community-specific data, and it also provides them with a tool to help address health disparities.

National Umbrella Cooperative Agreements

OMH's National Umbrella Cooperative Agreement (NUCA) Program aims to further demonstrate that partnerships between Federal agencies and national organizations can efficiently and effectively: 1) improve access to care for targeted racial and ethnic minority populations; 2) address social determinants of health to achieve health equity for targeted minority populations through projects of national significance; 3) reduce youth violence (including gang violence) among targeted minority populations; 4) increase the diversity of the health-related work force; and 5) increase the knowledge base and enhance data availability for health disparities and health equity activities. It is expected that the NUCA Program will result in increased access to and utilization of healthcare services by targeted minority populations; increased level of cultural competency of healthcare providers serving targeted minority populations; increased interest of minority youth in pursuing careers in the health arena; increased number of minorities recruited and trained for careers in health field; improved collection, analysis, interpretation and dissemination of health data on targeted minority population; increased number of organizations with the capacity to effectively evaluate project activities; reduction in the incidence of youth violence; reduction in youth related injuries; reduction in mortality association with youth violence; and increased leveraging and efficient use of resource and other assets through strategic partnerships. The following American Indian and Alaska Native (AI/AN) organizations have received funding under the NUCA program:

- **The Alaska Native Epidemiology Center (ANEC)** is housed within the *Alaska Native Tribal Health Consortium (ANTHC)*. ANTHC is part of the Alaska Tribal Health System, a network of affiliated tribes linked by common goals and objectives. The ANEC NUCA Program has four main objectives:
 - to establish a comprehensive overview of existing data on intimate partner violence and sexual violence (IPV/SV) affecting AI/AN from all possible data sources to paint a detailed picture of this health disparity area;
 - to improve the collection, analysis, interpretation, and dissemination of health data related to IPV/SV among AI/AN;
 - to increase the number of IPV/SV organizations that serve AI/AN with the capacity to effectively evaluate project activities; and
 - to facilitate improved health outcomes by increasing the knowledge-base and awareness related to IPV/SV among AI/AN populations.

The five-year project will address a high prevalence of IPV/SV and address the NUCA Program objective to increase the knowledge-base and enhance data availability for health disparities and health equity activities. The outcomes of the project will meet the following OMH expectations for the NUCA Program: improved collection, analysis, interpretation, and dissemination of health data on targeted minority populations; and an increased number of organizations with the capacity to effectively evaluate project activities.

Outcomes: The grantee provided services to **655** individuals during FY 2013.

- **The Urban Indian Health Institute (UIHI)** created by the *Seattle Indian Health Board (SIHB)* to support the health and well-being of urban Indian communities through information sharing, scientific inquiry and technology; SIHB addresses urban AI/AN healthcare needs in the Seattle area with programs/services, external linkages/affiliations, and management expertise in public health, information systems, community organization,

and fiscal-related issues. The UIHI NUCA Project is designed to increase delivery of quality care specifically for urban AI/AN in cardiovascular disease, depression, and a community-determined disease/health issue by identifying 4-7 best practice interventions or components of interventions shown to reduce, prevent or treat the health issue, increase capacity at a minimum of two urban Indian health organizations to implement these interventions, and increase the number of successful models of care that are recognized at a national level to increase awareness and help leverage resources.

Outcomes: In FY 2013, the SIHB/UIHI provided health promotion and disease prevention services to **1,733** participants. There were **1,218** unique visitors to the project webpage and **272** downloads of instructions/educational documents created by the grantee for the NUCA project to address cardiovascular disease and depression health disparities for the AI/AN communities. The capacity reports have been completed and disseminated on cardiovascular disease and depression in the AI/AN community.

- The Great Plains Tribal Health Consortium (GPTHC)** was established to provide the Indian people of the Aberdeen Area with a formal representative board as a means of communicating and participating with the Aberdeen Area Indian Health Service (IHS) and other health agencies and organizations on health matters. The GPTHC NUCA Project will be administered through the Northern Plains Tribal Epidemiology Center (NPTEC), housed within the GPTHC to increase the knowledge-base and enhance data availability for health disparities and health equity through the use of Geographic Information System (GIS). The NPTEC will collaborate with faculty and staff from the University of Nebraska Medical Center’s College of Public Health to provide epidemiology and GIS training, spatial analysis, and technical assistance to tribal communities to enhance the Northern Plains American Indian communities’ capacity to collect, analyze, interpret, and disseminate relevant public health data and information in a culturally appropriate manner.

Outcomes: In FY 2013, a total of **823** individuals representing **13 tribes and 4 tribal colleges** participated in the Mapping Pathways project.

National Umbrella Cooperative Agreements II (NUCA II)

In FY 2012, OMH announced the availability of a new round of competitive funding for the NUCA II Program (see description above for its purpose).

Outcomes: This NUCA II program began in September 2012 and is a three-year program. Listed below are the two AI/AN organizations that participate in the program:

<u>Organization</u>	<u>State</u>	<u>Funding</u>
National Council of Urban Indian Health	DC	\$200,000
Association of American Indian Physicians	OK	\$200,000

The National Council of Urban Indian Health (NCUIH) goal is to develop, implement, evaluate and replicate best practices in Community Health Representatives (CHR) program for urban Indian communities that increase access to healthcare, improve health equity, and sustain services for AI/AN people. The NCUIH *Access and Resources for Community Health* project is to add to an additional culturally-component workforce specifically for the urban AI/AN community through CHRs.

The Association of American Indian Physicians *Advances in Indian Health Care* project is to address health disparities by improving healthcare workforce development and cultural and linguistic competency in AI/AN healthcare; and increase the diversity of the health professions workforce by recruitment and training of AI/AN students.

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