

**Centers for Disease Control and Prevention:  
Highlights of AI/AN-Focused Activities, FY 2009**

*A Summary Report for the 4<sup>th</sup> Biannual CDC Tribal Consultation Session  
January 28, 2010, Atlanta, GA*

**Resource Allocations, Strategic Partnerships, and Capacity Building**

**Resource Allocations:**

The Centers for Disease Control and Prevention (CDC) strives to manage its fiscal and personnel resources in a manner that maximizes impact on the health and safety of American Indian/Alaska Native (AI/AN) people, accurately monitor CDC resources allocated to benefit AI/AN communities, and make this information readily available to tribal leaders. CDC is using a portfolio management approach to its resources devoted to AI/AN health issues. This approach improves how CDC tracks and displays its AI/AN resource commitments and enables CDC to more closely monitor funds distributed to state health departments via CDC grants and cooperative agreements to help ensure that AI/AN communities receive appropriate benefit from these funds. In FY 2009, total funds allocated through competitively awarded grants and cooperative agreements to tribal partners (tribal governments, tribal health boards, tribal epidemiology centers, tribal health organizations, Alaska Native health corporations, urban Indian health centers, and tribal colleges) approached \$24 million (\$23,854,212). Compared to FY 2008, total funding in this category increased in the amount of \$1,014,698 or 4 percent.

In addition to grants and cooperative agreements awarded to tribal partners, CDC also allocated \$11 million through grants/cooperative agreements awarded to state health departments and academic institutions for programs focusing on AI/AN public health issues. The remainder of CDC's AI/AN portfolio falls into three categories: (1) intramural resources (about \$6.8 million), (2) federal intra-agency agreements (about \$2,398,267), and (3) indirect allocations (about \$124 million). The indirect category primarily represents resources devoted to immunizing AI/AN children through the Vaccines for Children (VFC) program. CDC estimates its total FY 2009 resource allocation for AI/AN program to be approximately \$168 million. The total figure (\$167,637,959) represents a 55 percent increase compared to AI/AN allocation in FY 2008, an increase that is consistent with an overall increase in VFC funds received by CDC in FY 2009. If VFC funds are not included, CDC estimates its total FY 2009 allocation for AI/AN programs to be \$45 million, 53 percent of which goes directly to tribal partners and 76 percent overall is expended outside of HHS. The total figure (\$45,371,807) represents a 4 percent increase over non-VFC AI/AN allocations in FY 2008.

**Strategic Partnerships and Capacity Building:**

**Cooperative Agreement with the National Indian Health Board –**

CDC has continued to support the National Indian Health Board (NIHB) to improve the health of underserved AI/ANs by strengthening efforts to build public health capacity throughout Indian

Country and to foster culturally appropriate public health care services that focus on partnership building, health advocacy, promotion, education, and prevention. At the center of these public health initiatives is the strong, collaborative relationship between NIHB, Area Tribal Health Boards, and CDC, which is vital to successfully achieving critical health outcomes for AI/ANs. NIHB is increasing its collaboration with the Tribal Epidemiology Centers' and Area Tribal Health Boards' public health surveillance, epidemiologic research, and prevention activities by highlighting their successes via NIHB outreach and communication. NIHB is posting successful tribal research and program activities and achievements on its website and in the *NIHB Health Reporter*, and has disseminated some 15,000 tribal public Health brochures to tribal stakeholders.

They plan to strengthen new partner dialogue and relationships by identifying several mechanisms through which tribes and CDC can collaborate at the local, state, and regional level in the planning and implementation of public health programs and projects to address Native health disparities. They have maintained a contractual agreement with Morehouse School of Medicine's Public Health Summer Fellows Program to bring Native students to CDC to work with CDC mentors on public health programs benefitting AI/ANs. NIHB will continue to explore additional public health career pathways and establish stronger linkages between Tribal colleges and other schools of public health. They plan to engage in communication with the University of Minnesota School of Public Health and the University of New Mexico master's in public health program to determine what promising practices are occurring at each school to help recruit, retain, and provide opportunities for AI/AN students for careers in public health.

#### **Tribal Epicenter Coalition (TECC) -**

The Tribal Epidemiology Center Consortium ("the Consortium" or TECC) is made up of the Northwest Tribal Epidemiology Center (NTEC), the Southern Plains Inter-Tribal Epidemiology Center (SPIEC), and the California Tribal Epidemiology Center (CTEC). This interregional network has collaborated to strengthen tribal epidemiologic and public health capacity to promote the standardization and culturally competent use of health data to eliminate health disparities facing AI/AN communities. The TECC's lead agency is the NTEC and collaboratively serves the tribes of Idaho, Oregon, Washington, Kansas, Oklahoma, Texas, and California. Together, the TECC serves tribes in four Department of Health and Human Services' (HHS) regions (Regions VI, VII, IX, and X). The Consortium model has established a number of mechanisms for ongoing consultation with constituent tribes and a list of joint projects, allowing each epicenter to benefit from the experience and expertise of the others. The TECC has shared tools, data collection projects, and successful interventions being used in Indian Country that have increased the cultural competence, effectiveness, and data quality in all three areas. TECC continues to plan health initiatives based on joint or individual epicenter findings. The TECC is collaborating with the IHS National Epidemiology Program and Program Statistics Office to begin establishing standard protocols addressing how data can be accessed by Tribal epicenters to allow an analysis and comparison to be done between areas. Continued focus this year has been on unintentional injury prevention initiatives. The TECC has held Injury Prevention Leadership Summits in Oklahoma City, Portland, and Sacramento to share specifics about successful community-based interventions in the area of injury prevention and best practices. They distributed the Injury Prevention Toolkit developed in Years 2 and 3 during site visits where they provided training and technical assistance to promote injury prevention interventions. The Consortium is positioned to become a national network involving all the

Tribal Epidemiology Centers across the United States with additional funding and support to further build tribal epidemiologic capacity with community-based participatory methods that maximizes resources and experience. The TECC is committed to maintaining the personnel infrastructure at each epicenter to support a steady funding stream and to ensure that the services offered to tribes remain consistently available.

## **Chronic Disease Prevention and Health Promotion**

### **Cancer Prevention and Control:**

#### **National Breast and Cervical Cancer Early Detection Program -**

The National Breast and Cervical Cancer Early Detection Program (NBCCEDP) was established as part of the Breast and Cervical Cancer Mortality Prevention Act of 1990 (Public Law 101-354) to provide free or low-cost breast and cervical cancer screening and diagnosis to low-income, uninsured, and under-insured women. In FY 2009, the NBCCEDP was awarded approximately \$181 million to BCCEDPs in all 50 states, the District of Columbia, five U.S. territories, and 12 AI/AN tribes and tribal organizations. The NBCCEDP targets low-income women with little or no health insurance. Racial and ethnic minority women comprise priority populations in the program, which has helped to reduce disparities in cancer screening and health outcomes.

Through FY 2008, more than 3.4 million women have been served and more than 8.4 million screening examinations have been provided. More than 39,000 breast cancers have been found, and 2,382 cases of invasive cervical cancer have been diagnosed through the national screening program. Since inception, approximately 52 percent of women screened through the program were of racial or ethnic minority groups, and 5 percent were AI/AN women. In FYs 2003–2007, AI/AN organizations provided 84,606 Pap tests and 44,786 mammograms to 52,582 unique women. Through the NBCCEDP, these organizations detected a total of 241 breast cancers, 13 invasive cervical cancers, and 468 high-grade pre-cancerous cervical lesions. The NBCCEDP will continue to promote screening for underserved women through states and tribal organizations. In 2010, the NBCCEDP will begin reimbursement for full field digital mammography, the community screening standard, which has the potential to increase provider participation in the program, thereby increasing underserved women's access to screening.

#### **National Colorectal Cancer Control Program -**

In 2005, AI/ANs had the second highest incidence rate of colorectal cancer. Routine colorectal cancer screening can find precancerous polyps before they become cancerous, as well as find colorectal cancer at an early, treatable stage. CDC has launched the National Colorectal Cancer Control Program (NCRCCP), with approximately \$22 million awarded to fund 22 states and 4 tribal organizations as CRCCP sites. The NCRCCP will support these sites to conduct population-based screening efforts and provide colorectal cancer screening services to low-income men and women aged 50–64 years who are underinsured or uninsured for screening when no other insurance is available. Funding will also support diagnostic follow-up, patient navigation, data collection and tracking, public education and outreach, provider education, and CRCCP evaluation.

Four tribal organizations—the Alaska Native Tribal Health Consortium, the Arctic Slope Native Association, South Puget Intertribal Planning Agency, and the SouthCentral Foundation—were funded as NCRCCP sites after a competitive review process (FOA 09-903). During November 4–6, 2009, CDC hosted a NCRCCP reverse site visit for CRCCP grantees to discuss the population-based approach, communication strategies to promote screening, and NCRCCP evaluation plans. The new 5-year project period began June 30, 2009, and CDC plans to continue to provide its technical assistance to funded sites for screening program and population-based screening activities. Sites are expected to begin screening in 6 months.

### **National Program of Cancer Registries (NPCR) -**

To properly estimate the cancer burden in AI/ANs, researchers must have correct identification of race of the cancer patient available in their data. Some central cancer registries and geographic areas have reported misclassification of AI/ANs as non-AI/ANs, decreasing the accuracy and reliability of cancer incidence data for AI/ANs. In 2008, CDC staff addressed this issue by implementing data linkages between the IHS patient registration database and central cancer registry data. CDC continued this activity in FY 2009 to improve data on race and reduce AI/AN misclassification. Prior to the NPCR—Cancer Surveillance System data submission, CDC staff worked with 30 central cancer registries to link incidence data with the IHS patient registration database.

The IHS database continues to make necessary modifications to improve data accuracy and is constantly adding new data. This improvement requires some central cancer registries to conduct data linkage activities annually, which has improved incidence cancer data for the AI/AN population. With better quality data on AI/ANs available for cancer diagnosis years 1999–2004, CDC staff led the publication of a special supplement to the journal *Cancer*, “An update on cancer in American Indians and Alaska Natives, 1999–2004,” in September 2008. This supplement included 16 articles on various cancers in the AI/AN population. Linking cancer incidence records to the IHS datasets from Contract Health Service Delivery Areas countries will continue to improve the classification of race for AI/AN cases in cancer registries. This activity will continue to improve cancer surveillance data for AI/AN communities and should aid in the planning, implementation, and evaluation of more effective cancer control and reduced health disparities in this population.

### **Tribal Cancer Plans -**

Comprehensive Cancer Control (CCC) is an integrated and coordinated approach to reducing cancer incidence, morbidity, and mortality through the range of the disease—prevention, early detection, treatment, rehabilitation, and palliation. CCC efforts emphasize the benefits of healthy lifestyles and recommended cancer screening and tests, and works to increase access to quality care and improve quality of life for cancer survivors. CDC currently funds CCC programs in seven tribes and tribal organizations to develop Tribal Cancer Plans. These plans include strategies outlining systematic approaches to address the needs of at-risk populations, including AI/ANs. These plans focus on building infrastructure to increase access to cancer screening and treatment. CDC’s CCC Program will work with tribes and tribal organizations to implement their Tribal Cancer Plans and foster collaborations with external partners.

### **Follow-Up of Elevated PSA Tests among AI/AN Men in Urban Health Clinics -**

Since November 2008, CDC has worked with the Fred Hutchinson Cancer Research Center and the Urban Indian Health Institute to develop a data abstraction form and questionnaire. The research project recently obtained National IHS IRB approval to survey men with elevated PSA. CDC will abstract urban health-clinic data to identify eligible men with elevated PSA. CDC will then contact these men to see if prostate cancer was diagnosed and determine their course of treatment. After analyzing the data, CDC will disseminate research findings in hopes of increasing our understanding of AI/AN men's experience with prostate cancer diagnosis and treatment.

### **A Retrospective Evaluation of Patterns of Care for American Indians -**

Since October 2008, CDC has worked with the Mayo Clinic to develop a data abstraction form and questionnaire. CDC obtained National IHS IRB approval, along with tribal approvals from Fond du Lac, White Earth, and Red Lake tribes, and the Alaskan Native Medical Center. CDC will abstract Mayo Clinic data to identify eligible men with elevated PSA. CDC will then contact these men to see if prostate cancer was diagnosed and determine their course of treatment. After analyzing the data, CDC will disseminate research findings in hopes of increasing our understanding of AI/AN men's experience with prostate cancer diagnosis and treatment.

### **Alaska Native Colorectal Cancer Projects -**

Through an interagency agreement between CDC and IHS and collaboration with the Alaska Native Epidemiology Center (ANEC), CDC provides ongoing services and technical assistance for colorectal cancer projects in Alaska. These projects include promoting colorectal cancer screening through itinerant endoscopy services provided to rural tribal health facilities and providing a case manager/case navigator position at a regional hub healthcare facility to coordinate patient outreach, recruiting, scheduling, tracking, and follow-up. This patient outreach will specifically prioritize screening individuals with a family history of colorectal cancer or who are aged 50 and older and have never been screened. The patient outreach efforts also involve maintaining and using a colorectal cancer First Degree Relative database and installing colorectal cancer-screening report software on the electronic medical records system of regional health care facilities to identify those at high risk and those in need of screening. CDC will use this work in Alaska to complete a research project evaluating the performance of immunochemical fecal occult blood tests (iFOBT) as a potential alternative to Guaiac-based fecal occult blood testing (gFOBT), which are not currently being used for ANs based on the high prevalence of *H. pylori* infection. The iFOBT is believed to perform well even in the presence of *H. pylori* infection and could be an important addition to possible screening options for this population. CDC also plans to produce a report summarizing various colorectal cancer screening reminder systems and results-tracking systems currently in use at IHS, tribal, and urban facilities. The ANEC will continue to receive funding through the CDC/IHS interagency agreement (IAA) to carry out these and other projects in the future.

### **National Death Index (NDI) Linkage Project –**

CDC is collaborating with the National Center for Health Statistics (NCHS) and IHS to minimize the effects of racial misclassification and improve estimates of cancer mortality among AI/ANs. This project secured funding in 2009 to link IHS and NDI data to produce an analysis file with all records from the NCHS Mortality Statistics file and flag records that link to the IHS patient

registration file. In FY 2010, the IHS Division of Epidemiology and Disease Prevention (DEDP) will provide NCHS/NDI with the IHS patient registration file containing approximately 3.5 million records of AI/AN persons who have received services in the IHS since 1985. NCHS/NDI will link data between NDI and IHS for deaths occurring from 1985 to 2007, and CDC will process and adjudicate the linkage results. CDC will send NCHS/NDI a file of all “true” matches, and NCHS will return a file to IHS DEDP that contains all deaths occurring in the United States during that time period with flags for records that matched to the IHS file. CDC will then create an analysis file of all deaths. Using appropriate cause of death records, CDC will generate tables of cancer and other deaths and use these tables as the basis for a series of reports and manuscripts characterizing major causes of mortality for AI/ANs.

### **Cross-Cutting Public Health Programs:**

#### **Racial and Ethnic Approaches to Community Health (REACH) US Program -**

REACH continues to build on the successes, strong outcomes, and body of knowledge to Eliminate Racial and Ethnic Health Disparities. Forty REACH U.S. communities—18 Centers of Excellence in the Elimination of Health Disparities (CEED) and 22 Action Communities (AC)—are currently engaged in eliminating disparities by supporting community coalitions. Effective strategies will be applied through innovative and nontraditional partnerships at the community level. Under the REACH US program, CDC awarded six entities targeting the elimination of health disparities in AI communities; all six are fully engaged in intervention activities. Two of these entities (Oklahoma State Department of Public Health; University of Colorado at Denver and Health Sciences Center) are functioning as CEEDs and serving as resource centers on effective interventions in addition to working in their “home” communities. Four entities (the Choctaw Nation of Oklahoma; the Eastern Band of Cherokee Indians; the Inter-Tribal Council of Michigan; the Northern Arapaho Tribe) are funded as ACs; they are implementing and evaluating successful approaches with specific communities to impact AI/AN populations. All of the REACH US communities are currently implementing activities. Below is a brief description of the individual projects:

CEED: Oklahoma State Department of Health “Southern Plains REACH US (SPRUS) has chosen to work with AI tribal communities in the Southern Plains region (Oklahoma, Texas, and Kansas) to reduce their risk of diabetes and CVD through activities related to nutrition, physical activity (PA), and tobacco control and prevention. There are two Legacy Project recipients, comprising two different tribal organizations (who focus on PA and nutrition from their own particular cultural context) with the goal of increasing the community’s knowledge and practice of healthy eating and active living through community assessment and partnership, program planning, education, and hands-on activities. This CEED will provide TA for these projects and plan to hold them up as an example from which other tribal communities can model, with expectations of expanding the Legacy Project reach into the rest of the SPRUS service area states of Texas and Kansas.

For grant year two, SPRUS has efforts that span the entire socio-ecological model, with tribes introducing curriculum and tobacco control policy at various levels within the community or schools, and initiating the development of the SPRUS as a regional and national resource for tribal organizations interested in using the REACH US approach. The main attributes of

Southern Plains REACH-US (SPRUS) and the Southern Plains AI CEED for grant year three are school-based wellness programs for children and tobacco-free, healthy nutrition and PA policy support and promotion in tribal entities, including businesses and health centers. They will be provided through direct services and TA. SPRUS partnership includes Oklahoma Department of Health, Southern Plains Intertribal Epidemiology Center (SPIEC), Oklahoma State Bureau of Investigation, Oklahoma Turning Point, and CDC.

CEED: University of Colorado at Denver CVD Risk Reduction among Denver American Indians/CVD Risk Reduction among Albuquerque American Indians will implement an evidence-based organizational change process with approximately 240 members of the Special Diabetes Program for Indians (SDPI) who are not currently involved in the competitively awarded demonstration projects; deliver intensive train-the-trainer workshops about organizational culture and effectiveness and the importance of improving performance of health organizations to reduce disparities; and disseminate lessons learned about organizational change to private sector, tribal, and government agencies concerned with diabetes prevention.

AC: Choctaw Nation of Oklahoma (CNO) “Lifetime Legacy Program” received a Core Capacity Building Grant under the REACH 2010 program. After successfully building their capacity and infrastructure, they are now implementing their Lifetime Legacy Project with REACH US as an Action Community. The project focuses on the health priority area of cardiovascular disease (CVD) as well as the intervening variables of childhood obesity, tobacco, and substance abuse, specifically methamphetamine use. The target population is AI/ANs living within the 10.5-county service area of the CNO. They have developed a presentation that shows the correlation between substance abuse and CVD, “The Effects of Substances on the Heart,” and have delivered the presentation to 10 different organizations across the CNO and the United States. Additional staff has been hired and trained to present the program by September 2009. Staff and coalition members have been trained in the “Honoring the Gift of Heart Health,” a cardiovascular disease prevention curriculum, with the goal of introducing and implementing this curriculum into the areas of the CNO chosen for the intervention.

AC: Eastern Band of Cherokee Indians “Cherokee REACH –US Coalition” (EBCI) will reduce the risk for Type 2 diabetes in the EBCI communities by promoting physical, emotional, and cultural well being. Viewing poverty, racism, and inactive physical lifestyles as major contributors to the health disparities related to diabetes, this program works to change social norms, utilize formal and informal leaders, and engage communities across the lifespan to create change among individuals, organizations, systems, and policies. Importantly, the EBCI is attempting to facilitate key opinion leaders—both formal and informal—and youth and elders to model healthy lifestyle behaviors and active living so that these leaders serve as change agents for the rest of the EBCI community. The project is also implementing culturally specific school-based mentoring programs and health and physical activity experiential curriculum and activities. In addition, the EBCI REACH Coalition has initiated a School Health Council, which is looking at school health policy support and development. Finally, activities to support a healthy built environment include developing a walkable community initiative.

AC: Inter-tribal Council of Michigan “Reaching Toward Healthier Anishinaabe REACH ” (ITCM) continues to implement community-based intervention activities to reduce

cardiovascular and diabetes related disparities that are culturally tailored to each of three tribal communities, while providing overall technical assistance to the tribes and disseminating results of the culturally tailored interventions among consortium partners. This will be accomplished through refining Community Action Plans (CAP) and hosting technical assistance and information-sharing meetings with partner programs, agencies, and tribal leadership. For grant year two, diabetes education groups and Talking Circles have begun. The Hannahville Indian community planned and hosted the Native Health Summit in April 2009. The summit featured Native spiritual leaders, health care providers, and traditional medicinal people sharing wisdom about Native health and wellness, with an emphasis on heart health and diabetes, and included information on traditional use of tobacco for natives and speakers discussing the mind-body-spirit connection.

Employee and worksite wellness is a focus for year two, with programs that incorporate CVD screenings into all activities, including an employee health fair, lunch and learns, one-on-one nutrition counseling and referrals, smoking cessation support groups, and other available services led by health professionals such as dietitians. Personal Action Toward Health and Weight Watchers at Work are examples of programs that the ITCM project is focusing on that fit inside the interpersonal or group level of the socio-ecological model. Environmental and systems change is emphasized through convenience store nutrition labeling, community walk-ability assessments, and local trails planning. Community capacity building through mapping assets, establishing partnerships, and developing simple activities such as cooking classes that incorporate traditional food recipes are important aspects of this REACH program.

AC: Northern Arapahoe WIC Program “Wind River Reservation Infant Mortality Prevention Project” (WRIR) plans to reduce the rate of infant mortality among AIs through community-based approaches. These approaches include increasing community awareness and commitment to eliminating infant mortality disparities through coordinated and multi-organizational action; increasing the number of Northern Arapaho and Eastern Shoshone women initiating early prenatal care and sustaining that care; and achieving measurable improvements in infant mortality rates. This work will be done through community organization, education, inter-agency coordination and partnerships, systems development, and higher levels of access to health services. The WRIR project has conducted focus groups to obtain information on barriers to prenatal care and maintaining healthy pregnancies; conducted key informant interviews with representatives of Tribes and others who serve pregnant women, infants, parents about barriers to care and strategies for reducing infant mortality; and held community meetings for comments and discussion.

The second annual Wind River Indian Reservation Healthy Babies Conference was held with speakers who are AI experts in their area of specialization or who have specific experience in working in Tribal communities. During this second grant year, the program focused on programs aimed at improving men’s wellness. Culturally specific components of training have focused on Tribal-specific culture and traditions around pregnancy and health care-seeking and increasing health providers’ knowledge and understanding of Tribal cultural issues that affect early prenatal care seeking. Both Tribes on the Reservation are preparing a Tribal-specific cultural guide for health providers.

### **Healthy Communities Program/ Building a Healthy Nation—Strategic Alliance for Health (SAH -**

The Sault Saint Marie Tribe of Chippewa Indians (SSMT) and the Cherokee Nation (CN) are entering into the second year of a 5-year cooperative agreement to develop and implement policy, systems, and environmental changes addressing chronic disease risk factors of physical inactivity, poor eating and nutrition, and tobacco use and exposure to reduce the burden of chronic diseases such as obesity, diabetes, and cardiovascular disease. Four communities from the SSMT are participating in this initiative: Sault Saint Marie, St. Ignace, Manistique, and Munising. Four counties across the CN are participating in this initiative: Cherokee county, Mayes County, Sequoyah County and Adair County. Comprehensive community coalitions of key local community leaders have been formed to assess the gaps in policy, systems, and environmental changes and prioritize what each community needs to focus on in addressing these risk factors in building healthy community initiatives. By implementing the Community Health Assessment and Group Evaluation (CHANGE) tool, communities will assess their gaps and needs across five community sectors, including schools, work sites, and communities as a CAP from the information analyzed in conducting the CHANGE tool assessment. Then they will begin implementing policy, systems, and environmental changes from that plan. From these community experiences, each community will develop an implementation guide around one policy, systems, or environmental change they have initiated and mentor other non-funded communities regarding the processes and lessons learned in developing these initiatives for healthier communities.

### **Prevention Research Centers (PRC) Program -**

Tribal Vision Impairment Prevention Project (Tribal VIP Project): Oregon Health and Science University, Center for Healthy Native Communities and residents from three Tribes (Umatilla in Oregon, Shoshone-Bannock in Idaho, and Lummi in Washington). For approximately 450 residents, basic eye exams were performed onsite by a vision technician, and participants who needed them were given free prescription eyeglasses. Participants with abnormal results or risks related to diabetes received testing and treatment using telemedicine (remote testing through the use of a camera) to examine patients. Results from the study were presented at the Association for Research in Vision and Ophthalmology Conference in April 2009. The center was funded for the 2010–2014 program cycle and will create a hearing loss prevention program for AI/ANs.

Healthy Kids Project implemented by the University of Oklahoma, the PRC, and Anadarko, Oklahoma, public schools, where 60 percent of students are AI. More than 8,000 students were screened to determine risk for obesity-related diseases. Information was shared with parents and school officials, and the findings will serve as the basis for developing new physical activity interventions and promoting changes in nutrition. Data from the project were published in April 2009 in the *American Journal of Hypertension*.

### **Teen Health Resiliency Intervention for Violence Exposure (THRIVE) -**

University of New Mexico, Center for Health Promotion and Disease Prevention, and Tohajilee Community THRIVE program tested the effectiveness of school- and community- based interventions for identifying and reducing psychological distress among AI youth (6th–12th grade students) who witness or experience violence. Through the in-school intervention, participants met individually with a health counselor and in small groups to share experiences,

express feelings, receive group support, and build coping skills. Their parents and teachers were trained to support them at home and in the classroom. The community intervention trained parents, teachers, and community members to recognize the signs of trauma among youth and get them help. Data are being evaluated to determine on the successfulness of increasing participants' coping skills, reducing the symptoms of trauma, and maintaining positive effects over time. The center was funded for the 2010–2014 program cycle.

### **Adolescent and School Health:**

#### **Improving Health and Educational Outcomes of Young People, 2008–2013 -**

The Cherokee Nation (CN) Health Services Group and the CN Education Services Group are collaborating with multiple community partners to improve the health of young people in the 14-county CN Tribal Jurisdictional Service Area in northeastern Oklahoma. The CN receives funding to provide HIV prevention education and to conduct the Youth Risk Behavior Survey (YRBS). CN Behavioral Health Services successfully recruited a number of schools in northeastern Oklahoma to take part in the CDC's School Health Profiles Survey (Profiles). Conducted biennially, Profiles is a system of surveys assessing school health policies and programs related to health education, physical education and activity, healthy and safe school environment, health services, school health coordination, and family and community involvement. A sufficiently large number of public schools (237, which is 70 percent) participated in the 14-county area of the CN, allowing for generalized results and improved planning for all schools in the area. This improvement was accomplished through collaboration with the CN's Health Promotion/Disease Prevention program and the Oklahoma Department of Education. The CN will use these results to develop model health-prevention programs focusing on HIV prevention and reproductive health.

The Winnebago Tribe of Nebraska (WTN) receives funding to conduct the YRBS. The goal of this program is to advance the knowledge of critical health-related behaviors among high school students through data collection and dissemination. The WTN obtained weighted YRBS data allowing for generalized results. Tribal leaders are currently reviewing the YRBS data for program planning purposes.

The Nez Perce (NP) Tribal Government receives funding to plan and implement coordinated school health programs in local schools. The NP Students for Success Program is a collaborative effort between the NP Education Department, Nimiipuu Health, and four local school districts to support the development of coordinated school health programs in four K–12 schools on the Nez Perce reservation. The Students for Success Program works to improve the health of children through planning and coordination of programs across and within agencies. During FY 2009, the NP government provided professional development to seven partner schools on the reservation and further promoted a coordinated school-health approach for physical activity/nutrition/tobacco control efforts to neighboring tribes. Representatives from the Colville, Shoshone-Bannock, and Suquamish tribes participated in the professional development workshop on physical education.

Multiple states also funded under this program further illustrate activities conducted that support coordinated school health and include a youth component for affecting or supporting AI/ANs:

Alaska—The Alaska Department of Education and Early Development provides HIV prevention education and conducts the YRBS. These programs are developed and delivered in collaboration with the Alaska Department of Health and Social Services. Alaska has a robust e-learning system, which provides training modules and other resources on HIV prevention education to educators in remote rural areas where many Alaska Natives live. Alaska provides the “Making Proud Choices” HIV prevention curriculum that is used for adolescents in Department of Juvenile Justice facilities across the state. The program reaches many Alaska Native adolescents, as they make up a large percentage of the incarcerated youth in the state.

Colorado—Colorado has initiated efforts to address HIV/AIDS prevention education for AI/AN populations through partnerships with the Indian Education Program and the Denver Indian Center. The partners are identifying ways to work together to meet the health needs of the Indian community, a rapidly growing population in Denver.

Maine—Maine’s three tribal schools were selected in a competitive process to participate as priority schools in the state’s coordinated school-health program. Beginning in October 2009, the programs will receive 3 years of professional development tailored to their needs, mini-grants (\$10,000/school/year), and ongoing technical assistance. Training for, and completion of, the CDC’s School Health Index is the first expectation for the participating tribal schools. The Department of Education (DE) Coordinated School Health Program Director secured funding for this initiative above and beyond their program’s established budget. Maine’s DE conducted “Be Proud! Be Responsible!” training for Tribal school educators reaching 30 participants of the Passamaquoddy Nation. Maine’s AI youth cultural camp, which included a modified “Be Proud Be Responsible” training, reached 25 middle school youth and 40 college students.

Montana—Montana is collaborating with the State School Superintendent's initiative, "Turn Around Schools," to strengthen the HIV/STD and Teen Pregnancy Prevention Education provided to schools on tribal reservations in Montana. This effort will be part of a broader state initiative to improve school performance and student academic achievement.

Nebraska—The Nebraska DE collaborated with the Santee Tribe to conduct a Health Education Week during June 2009 that focused on specific topics affecting the health of tribal members, including alcohol and methamphetamine use, cancer, child abuse, blood-borne diseases (including HIV and Hepatitis C), STDs, and diabetes. About 40 percent of the tribe—more than 350 AIs, including almost 50 youth—participated in sponsored workshops during the week.

North Dakota—Selected activities of the North Dakota DE HIV/AIDS Prevention Program include the following: an ongoing collaborative project with the Mental Health Association in North Dakota–Tribal Rural Mentoring Partnership to help increase education and healthy life choices for approximately 123 AI youth on the Standing Rock, Fort Berthold, Turtle Mountain, and Fort Totten reservations; and a collaborative youth-focused project for HIV prevention education, Sources of Strength, on North Dakota AI reservations. The reservation programs reflect a core belief system, or a tribal worldview, that “health is spread through relationships.” The Sources of Strength curriculum focuses on strategies that help youth develop family support, positive friendships, caring adult relationships, and healthy activities. Tribes involved in this collaboration are the Affiliated Tribes, or the Mandan-Hidatsa-Arikara Nation. North

Dakota uses the Circle of Life HIV science-based curriculum (developed by CDC) in addition to the Sources of Strength model.

Oregon—The goal of Oregon’s work with Native American youth is to address, through state agency and community partnerships, the HIV prevention needs for youth of color and youth in high-risk situations. Oregon has contracted with the Native Wellness Institute for conducting Healthy Relationship curriculum training of trainers to be held in early 2010 in partnership with the Confederated Tribes of Grande Ronde and the Oregon Department of Education.

South Dakota—Selected examples of South Dakota DE AI/AN activities include the following: Presenting to 50 school personnel and key stakeholders at events focusing on AIs to increase awareness about coordinated school health and the impact of health on learning; sharing YRBS statistics and resources available through the state’s school health program; fostering collaboration; providing training for the Circle of Life HIV prevention curriculum (which focuses on the AI population) to schools with substantial numbers of Native students; sponsoring a keynote speaker for the 2008 Indian Education Summit that focused on youth leadership and wellness programs; and implementing a contract with the South Dakota Gear Up program. The Gear Up program provides resources and assistance to schools and families all year to encourage Native students to graduate from high school and further their education.

The collaborative project incorporates physical activity/nutrition, tobacco use prevention, and HIV prevention education topics within their summer programs for youth, and provides mini-grants to local school districts to promote the priority areas and the link between health and student success. South Dakota’s coordinated school health program and Gear Up share similar goals of raising healthy children to graduate from high school and become productive adults. Approximately 200 students in the Gear Up Honors Program also received training in Talking Circles, a unique AI instructional approach. Participants acquired skills in communication, problem-solving, goal-setting, self-reflection, community-building, and conflict resolution. They also discussed such issues as drug and alcohol use, peer pressure, dysfunctional and healthy relationships, STDs, and conflict resolution.

Wisconsin—Wisconsin provided technical assistance and educational resources to the HIV/AIDS Coordinator at the Great Lakes Intertribal Council to support ongoing HIV prevention initiatives for Native youth in 11 tribes in the state.

### **The 2008 Bureau of Indian Education (BIE) and Navajo Youth Risk Behavior Surveys (YRBS) -**

DASH provides technical assistance to the BIE and Navajo Nation to conduct the YRBS. Both the BIE and Navajo YRBS are conducted every 3 years. BIE administers the YRBS to middle and high school students attending Bureau-funded schools across the United States. The Navajo Nation, working with the IHS, conducts the YRBS among middle school and high school students attending public and private schools on the Navajo Reservation and in a small number of “bordertown” schools with high Navajo student enrollment. This surveillance activity is designed to determine the prevalence of health-risk behaviors among students, assess trends in these behaviors, and examine the co-occurrence of health-risk behaviors. The YRBS collects data on health risk behaviors among young people so that health, education, and tribal agencies

can more effectively target and improve programs. Both BIE and the Navajo Nation most recently conducted the YRBS in 2008. In 2008, 7,017 students in 119 middle schools and 8,361 students in 56 high schools participated in the BIE YRBS. In 2008, 9,441 students in 91 middle schools and 13,359 students in 48 high schools participated in the Navajo YRBS. Both BIE and the Navajo Nation plan to conduct the YRBS again in fall 2011.

Additional highlights of DASH's work with AI/AN Tribes include the following:

Tribal representatives (from funded and unfunded programs) were invited to the DASH partners meeting in spring 2009, "Our National Treasures: Working Together to Keep Our Youth Healthy and Successful," which focused on the processes and policies necessary to energize and empower school health leaders to advance programs that can improve the health of our nation's youth. DASH efforts are under way to help Tribes build stronger relationships with national nongovernmental organizations and state education agencies, building on CDC's existing partnerships.

DASH is beginning cross-center and cross-agency efforts to collaborate with tribes and anticipates conducting cooperative projects with this population. DASH staff presented at the annual School Health Conference of the BIE (Albuquerque Service Center, Tempe, Arizona in November 2009). More than 100 persons representing BIE-area schools attended. DASH presentations included a plenary session, "Analyzing Health Education Curricula: Use of the CDC's Health Education Curriculum Analysis Tool (HECAT)," and a concurrent session, "Using the CDC's School Health Index (SHI)."

### **Diabetes:**

#### **Using Traditional Foods and Sustainable Ecological Approaches for Health Promotion and Diabetes Prevention in AI/AN Communities -**

In FY 2008, CDC released a Funding Opportunity Announcement (FOA) for tribes/tribal organizations for 5-year cooperative agreements to (1) support community use of traditional foods and sustainable ecological approaches for diabetes prevention and health promotion in AI/AN communities; and (2) engage communities in identifying and sharing the stories of healthy traditional ways of eating, being active, and communicating health information and support for diabetes prevention and wellness. Eleven cooperative agreements were awarded at approximately \$91,000 for the first year to two tribal corporations in Alaska, one urban Indian health program, one tribal college, and seven rural reservation communities. The total award made to the 11 grantees was one million dollars. In FY 2009, CDC funded 6 additional grantees from the 60 original applicants, for a total of 17 grantees. Each grantee is funded at about \$100,000 per year through FY 2013, making the total expenditure at \$1.7 million each year for the next 4 years. Evaluation and planning technical assistance is provided by NDWP to grantees on a regular basis. In addition to the use of locally developed evaluation tools and data gathering, aggregate data are to be compiled and analyzed every 6 months by NDWP to share with grantees, CDC, and others.

Three articles have been published recently about this project by *Indian Country Today* newspaper and *Indian Country Today Insider: Communities Take a Holistic Stance on Diabetes*

*Prevention: A new CDC Program Supports, Gardens, Cooking, and Horse Programs; CDC Promotes Traditional Foods as a Diabetes Safeguard: New Five-Year Grant Program Supports Gardening, Gathering, and More; and Gardeners Fight Diabetes with Homegrown Foods: CDC Grant Helps Standing Rock Sioux Tribe Native Gardens Project Plan for a Healthier Future.*

### **The Eagle Books, Eagle Books Outreach Campaign, and New Eagle Books –**

In 2001, CDC collaborated with the Tribal Leaders Diabetes Committee (TLDC) and IHS to develop the Eagle Books, a series of four vividly illustrated stories that teach children about diabetes prevention and healthy living. More than 2 million books have been distributed to more than 1,500 AI/AN health and school organizations. The original artwork was first displayed at the Smithsonian National Museum of the American Indian in Washington, D.C. and New York City, October 2008–January 2009. The Eagle Books art exhibit is now on tour throughout the country at four venues each year through 2012. Eagle Books and animated DVDs of books are included in the K-4 lessons of the Diabetes Education in Tribal Schools (DETS) Curriculum. An Eagle Book community outreach campaign was launched in the Keweenaw Bay Indian Community and Keweenaw Bay Ojibwa Community College, October 25–30, 2008, was later moved to Albuquerque, New Mexico, March 2009, and most recently was held in Pendleton, Oregon, August–September 2009. Starting in late 2009, Westat, Inc. staff, through a task order with NDWP, will oversee the outreach campaign in three national AI/AN venues each year. The 2009 venues are the National Congress of American Indians (October 2009) and the National Indian Education Conference (October 2009). The third venue is the international Healing Our Spirits Worldwide conference, Honolulu, Hawaii, September 2010.

Westat, Inc. is contracted to developing the next set of Eagle Books for middle school children. The books include new characters joining the original cast to address a larger range of challenges to diabetes prevention, health, and safety. The first chapter book, *Coyote and the Turtle's Dream*, is complete and will go through CDC's concept clearance process in November 2009. The original artists are creating colorful book plates for the new chapter books. They are also "translating" the chapter books into graphic novels to appeal to a wider audience, provide an array of literacy options, and create the colorful images of the characters so many have come to love and expect. The Eagle Books Talking Circle curriculum is being developed through Westat with Lorelei DeCora, Ho-Chunk Nation. The educational material will feature new animal characters, Bear, and Grandmother Turtle. NDWP will be evaluating the impact of the Eagle Books in four AI/AN communities each year for the next 3 years (through 2012). NDWP will also test the messages of the new chapter books in select AI/AN communities. Various universities, teachers, and AI/AN students are volunteering their time and using their own resources to evaluate the Eagle Books for projects of their own.

### **Diabetes Education in Tribal Schools Curriculum –**

Since 2001, the National Institutes of Health, NIDDK, in partnership with the Tribal Leaders Diabetes Committee, CDC Native Diabetes Wellness Program, the IHS, and eight tribal colleges and universities, have developed the K-12 science and culturally based *Health is Life in Balance* Diabetes Education in Tribal Schools curriculum. All partners worked with school sites throughout the United States to test the curriculum in three evaluation phases. CDC assisted with evaluation format and scientific oversight for the project. The Eagle Books are included as part of the K-4 lessons plans. The curriculum was rolled out in November 2008 at the

Smithsonian National Museum of the American Indian in Washington, D.C. The roll out coincided with the Eagle Book art exhibit at the same locale. From FY 2009–2010, all partners are providing education outreach and teacher development training in all states that have AI/AN populations. NDWP is leading a DETS impact evaluation case study in four communities each year through 2012 to provide community-specific information on DETS curriculum use and acceptance.

#### **Native Diabetes Wellness Program Tribal/State Relationship Building Initiative -**

From 2008–2009, NDWP launched an initiative to encourage and support working relationships between state Diabetes Prevention and Control Programs (DPCPs) and the respective tribal nations in each state. The initiative has support from CDC’s Tribal Council Advisory Committee (TCAC) and the TLDC. Partnerships include all state DPCPs with an initial emphasis on “model” DPCPs demonstrating innovation in their relationships with tribal partners and tribal nations. State-based programs have received guidance to seek opportunities for tribal consultation with tribes in their states. NDWP printed 15,000 AI/AN Culture Cards, initially developed by SAMHSA, for distribution to state DPCPs and tribal nations. NDWP has been working with the New Mexico Diabetes Advisory Council (DAC) and the New Mexico Native American/DPCP alliance to facilitate outreach to tribal entities within the state. All 17 traditional foods grantees have received congratulatory letters from NDWP with copies to the respective state DPCP to encourage relationship building between the two entities. These efforts are one of many steps in place to build and maintain tribal and state DPCP relationships. In October 2009, CDC released the new NDWP website that describes NDWP’s many programs and activities. The website can be accessed at [www.cdc.gov/diabetes/projects/diabetes-wellness.htm](http://www.cdc.gov/diabetes/projects/diabetes-wellness.htm).

#### **Intergovernmental Personnel Agreements (IPAs) for GIS Maps and External Evaluation for New Grantees Activities –**

The Native Diabetes Wellness Program has two IPAs to (1) develop GIS maps for Eagle Books distribution, Talking Circles conducted, and traditional food use—gathering, hunting, horticulture, cultivation—for 17 *Traditional Foods and Sustainable Ecological Approaches to Health Promotion and Diabetes Prevention* grantees; and (2) provide external evaluation assistance for shared data elements for 17 new grantees, as above; provide evaluation technical assistance to local evaluators of each program; and review new Eagle Books for “cultural voice” and cultural relevance of diabetes presentation narrative.

#### **Tobacco Programs:**

##### **American Indian Adult Tobacco Survey Training and Media Training for Tribes -**

Office on Smoking and Health (OSH), Epidemiology Branch (EPI) and the National Native Commercial Tobacco Abuse Prevention Network (PN) are collaborating on a series of trainings tailored for tribes who wish to implement their own AI Adult Tobacco Survey (AI ATS). The trainings stress the importance of tribal-specific surveillance in informing and improving comprehensive, commercial tobacco prevention and control at the tribal health-system level and provide the knowledge and tools that allow tribes to implement this surveillance system. Tribes served by the Inter-Tribal Council of Michigan, the Aberdeen Area Tribal Chairmen’s Health Board (AATCHB), Muscogee (Creek) Nation and the Tribal Support Centers for Tobacco

Programs are committed to work collaboratively on these trainings that will be held at least twice per year. Ongoing technical assistance for tribes in the area of surveillance implementation and data analysis will also be provided.

Trainings were held in Minneapolis, Minnesota, and Rapid City, South Dakota in 2009. OSH and the network are collaborating on a series of trainings tailored for tribes in the area of using the media for targeted health campaigns. The trainings are co-presented with Gerald Wofford, Media Department Head at the Muscogee (Creek) Nation, and provide culturally appropriate training module. Topics include budgeting for media campaigns, developing news releases, working with reporters, and developing targeted media campaigns. The next scheduled training is April 22–23, 2010, in Albuquerque, New Mexico, and will be held in collaboration with the CDC-funded Oklahoma AI CEEDS.

#### **American Indian Adult Tobacco Survey—Cherokee Nation -**

The Cherokee Nation Tribal Support Center (CNTSC) has completed a fielding of a tribal-specific Cherokee Nation AI Adult Tobacco Survey, and data are currently being analyzed. This survey was developed in collaboration with the Tribal Support Centers and OSH. Findings will provide CNTSC with relevant information on prevalence, quit attempts, commercial tobacco abuse behaviors, beliefs, and attitudes. These findings will inform and improve strategies and interventions to reduce commercial tobacco abuse among its members.

#### **Maternal and Child Health:**

##### **Tribal Health Behavior/Maternal Child Health Surveys -**

DRH has provided technical assistance in the design, implementation and analysis of Behavioral Risk Factor Surveys, Maternal and Child Health Surveys, and related population-based surveys for more than 30 AI populations throughout the United States. The topics addressed in these surveys include tobacco use, alcohol use, diet/weight, physical activity, diabetes, cardiovascular health, injury issues, maternal/child health, and use of health services, among others. Data are collected in face-to-face interviews conducted by local community members. DRH works with Tribes and other AI organizations to develop questionnaires, design the sampling field approach for the surveys, train interviewers, develop data entry programs, analyze the information collected in the surveys, and produce reports on the survey results. DRH works with the tribal/organizational staff to determine how to utilize the results. Results have been used to provide input into health programs and interventions and to document the current health situation to obtain resources to address health problems. In FY 2009, DRH staff was a member of the planning group for a Behavioral Risk factor Survey on the Navajo. DRH has especially been involved in discussions of survey design, sampling, and budgeting for the survey planned for late in FY 2010. DRH continues to provide assistance to tribes as requested to design and implement population-based health surveys. DRH is also moving toward building capacity within tribal organizations so that they are better able to carry out their own surveys.

##### **The Study of Maternal Morbidity during Delivery Hospitalizations among AI/AN Women -**

DRH developed a partnership with the IHS, which provides health services for 40 percent of AI/AN in the United States to determine whether IHS clinical data could be used to provide needed information on the health status of AI/AN mothers and infants. DRH's first collaboration

using IHS clinical data was this pilot study that used data from five IHS hospitals to examine maternal morbidity during delivery hospitalizations. The findings revealed elevated levels of gestational diabetes, pregnancy-induced hypertension, and hemorrhage. The article, “Maternal Morbidity during Delivery Hospitalizations in AI/AN Women,” was published in the IHS Provider in February 2008. A nationwide analysis of maternal morbidity among AI/AN women delivering at IHS facilities is to be completed in 2010.

### **South Dakota Tribal Pregnancy Risk Assessment Monitoring System (PRAMS) Project -**

The Yankton Sioux Tribe (YST) and the AATCHB identified maternal and child health as the highest health priority in response to persistently high rates of infant mortality. In South Dakota during 2002–2004, AIs made up 18.1 percent of births, but accounted for 34 percent of infant deaths. The South Dakota Tribal PRAMS (SDTP) initiative is a unique PRAMS project collecting information exclusively from AI women (and mothers of AI infants) who recently gave birth to a live infant in South Dakota and Sioux County, North Dakota. PRAMS is an ongoing, population-based risk factor surveillance system initiated and designed to identify and monitor selected maternal experiences and behaviors that occur before and during pregnancy and in the child’s early infancy among women who deliver live, born infants. In this project, CDC provided technical assistance including development of a model protocol for data collection, assistance with question design, survey instrument development, and training on human subjects’ protections and telephone interviewing.

CDC also provided and installed data entry software and survey tracking software, conducted onsite training of staff on the software, and gave ongoing technical assistance on the systems. In October 2008, CDC provided SDTP with the cleaned and weighted final dataset. Currently, CDC provides ongoing consultation regarding data analysis and data dissemination activities. Data collection was completed in June 2008. Project response rates met the PRAMS threshold of 70 percent, and the SDT PRAMS staff convened community meetings in spring 2008 to discuss tribal priorities for data analysis. This input was combined with that of the Steering Committee and the Tribal Oversight Committee (which has representatives from all nine South Dakota tribes) in the development of an analysis plan. The plan was approved by the Tribal Oversight Committee. A surveillance report combining data from all tribes is scheduled to be published by the end of 2009. Tribal-specific reports are being developed for release only to the tribes. The SDT PRAMS staff evaluated the alternate surveillance methodologies used to reach tribal women and presented this evaluation along with a description of their procedures at the International Meeting in Indigenous Child Health, the PRAMS National Meeting, and the Maternal and Child Health Epidemiology Conference at the end of 2008. The SDT PRAMS data manager, a Native who recently graduated with an M.P.H. degree, was hired as a Council of State and Territorial Epidemiologist (CSTE) fellow working at the Northern Plains Tribal Epicenter and will continue with some PRAM activities.

### **Nutrition:**

#### **Support for Breastfeeding in the Workplace –**

In 2007, the Division of Nutrition, Physical Activity, and Obesity’s (DNPAO) Breastfeeding Work Group partnered with the Navajo Nation, providing technical assistance for the purpose of addressing low breastfeeding duration rates. Also in 2007, the Navajo Nation Breastfeeding

Coalition (NNBC) was formed to address the common goal to increase breastfeeding duration rates on the Navajo Reservation. A major action undertaken by the coalition was to build partnerships to work on passing a worksite breastfeeding support law to accommodate the need for breastfeeding mothers to breastfeed on express milk at work. The NNBC made a deliberate decision to focus on a grassroots effort to influence tribal leaders to pass a worksite breastfeeding support law. Multiple partners worked with the local communities to pass worksite breastfeeding support resolutions in 90 percent of the 110 chapters.

As a result of this success, the Navajo Nation Council passed the Healthy Start Act in October 2008. The law requires employers to provide a private room and a flexible work schedule for breastfeeding or milk expression. In December 2008, the NNBC was awarded a small grant by HRSA to help the Tribal Government enforce the Healthy Start Act by developing an implementation plan. This plan addresses increasing awareness and education among employers about how to make changes in the worksite policies and environment to comply with the law.

### **Heart Disease and Stroke Prevention:**

#### **WISEWOMAN funded Tribal Programs -**

The WISEWOMAN (Well-Integrated Screening and Evaluation for Women Across the Nation) Program aims to reduce cardiovascular disease in low-income, uninsured, or underinsured women aged 40–64 through risk-factor screening that includes blood pressure, cholesterol, glucose, height, weight, personal medical history, health behavior, and readiness to change. Culturally tailored lifestyle interventions targeting nutrition, physical activity, and smoking are also available. The interventions vary across programs, but all are designed to promote lasting, healthy lifestyle changes. WISEWOMAN has two Tribal programs: Southeast Alaska Regional Health Consortium (SEARHC) with headquarters in Sitka, and the South Central Foundation (SCF) with headquarters in Anchorage.

#### **National Heart Disease and Stroke Prevention Program –**

The Montana Department of Public Health and Human Services Cardiovascular Health Program completed a heart attack campaign on the Crow Reservation and a stroke campaign on the Flathead Indian Reservation. The latter was Montana’s first stroke campaign customized for American Indians. Montana’s heart attack and stroke media campaigns have received national recognition with three American Advertising Federation ADDY Awards, a Telly Award, and a Silver Aster Award. The Montana CVH Program also works with three Urban Indian Clinics to improve the blood pressure and cholesterol of patients. The project assesses lipid and hypertension control in patients and provides feedback on the quality of care to providers and staff. Interventions for the project include patient education and self-management tools via the distribution of blood pressure (BP) and cholesterol kits given to participating patients, provider feedback (after a baseline chart review is done at a particular CHC, the CVH program provides site-specific data to the providers), and provider education on hypertension management and how to effectively work with patients on smoking cessation.

## **Birth Defects and Developmental Disabilities**

### **Health Marketing of an Efficacious Intervention to Prevent Alcohol-Exposed Pregnancies -**

In 2007, CDC published the research results of a preconception intervention, Project CHOICES. Project CHOICES consisted of four motivational counseling sessions to reduce risky drinking and one contraception consultation and services visit to establish effective contraception use to avoid pregnancy until hazardous drinking was resolved. CDC collaborated with three universities in conducting an epidemiological study to identify community-based settings with high proportions of women at risk for alcohol-exposed pregnancies (AEP); developing and piloting the intervention in a feasibility study; and using a randomized controlled trial (RCT) of the intervention to establish efficacy. The results of the RCT found that at 3, 6, and 9 months post-intervention follow-up, odds ratios for reducing risk for an alcohol-exposed pregnancy were two-fold higher in women receiving the intervention as compared to women who did not receive. CDC then contracted with TKC Integration Services to develop a training curricula and intervention materials (including a counselor manual, client workbook, and screening and assessment tools) for health professionals working with high-risk women in settings such as alcohol and drug treatment centers, STD clinics, and maternal-child health (MCH) programs.

With FY 2009 (\$200,000) funds, TKC Integration Services will focus on collaborating with IHS to identify settings and populations of AI/AN women at risk for an AEP; identify and make any needed adaptations or modifications to the intervention and training curricula and materials; and develop, implement, and evaluate a plan for disseminating the training and providing technical assistance. To begin this process, CDC and TKC Integration Services provided a generic pilot CHOICES training to 12 MCH staff working in the Bemidji IHS area in May 2009 and gathered preliminary feedback from trainees on possible changes in the curricula and materials that may be needed. This year, CDC and TKC Integration Services will focus on strengthening collaborations with IHS through meetings with stakeholders, additional needs assessment activities, adaptation of the training curricula and intervention materials as needed based on feedback from potential users, and development and evaluation of dissemination and technical assistance activities.

## **HIV/AIDS and Other Sexually Transmitted Diseases**

### **Integrating HIV Prevention into Reproductive Health Services for AI/AN -**

For two successive years, DRH successfully competed for Minority AIDS Initiative funds from HHS Office of HIV/AIDS Policy. In year one, JSI Regional Research and Training Center for Family Planning (RTC) was funded to adapt training and technical assistance tools developed under Cooperative Agreement # 04073 for providers of AI/ANs. In year two of the project, the Center for Health Training (CHT) in Oakland, California, also an RTC, piloted the adapted training and technical assistance package with an urban Indian health care facility in Oakland, California, and at ANTHC through the CHTs in Seattle, Washington. They finalized the HIV integration toolkit and presented the package at the HHS Office of Population Affairs' annual HIV grantee meeting, and they conducted a national teleconference on the package for health care providers of AI/ANs. CHT received a no-cost extension for 2010. The remaining funds will be directed to training and technical assistance for HIV integration with CHTs Alaska partner.

### **STD, HIV, Sexual Violence Among AI/AN Women Living in the Great Lakes Region -**

AI/AN women have the highest rates of sexual violence in the United States. AI/ANs have the second highest rates of STDs and high rates of HIV. There is a relationship between (1) risky sexual behavior following sexual assault; and (2) STDs that result from sexual assault. An initial conference call was conducted with representatives from diverse groups working on this issue (e.g., tribal, community-based organizations [CBO] state, regional, federal) to identify the most pressing challenges and to identify strategies to work together to address them. From that experience, CDC/IHS National STD Program provided funding to the IHS Bemidji Area Office (BAO) who partners with the Great Lakes Inter-Tribal Epi Center (GLITEC) to provide mini-grants to one tribe or tribal organization in each of the three states of Michigan, Minnesota, and Wisconsin served by BAO and GLITEC. GLITEC funded three tribal organizations to work on this project. Each organization developed its project based on local need, ranging from campaigns to make this issue more visible at the community level to establishing a Sexual Assault Nurse Examiner program. Collaborations and technical assistance will be provided to BAO and GLITEC as they work with tribes and tribal organizations to complete their projects.

### **Addressing STDs among Alaska Natives and Inuit/First Nations/Metis of Canada -**

The CDC/IHS National STD Program was invited to attend an Inuit Women's Sexual Health Conference in Inuvik, Northwest Territories, Canada in February 2008. During this meeting, many similarities in STD epidemiology, risk behaviors, and cultural issues were noted between Alaska Natives and Canada's northern peoples (mostly Inuit, but also First Nations and Metis). As a result, the National STD Program began a conversation with Canadian public health officials about potential areas for collaboration. A bi-national meeting was held in Anchorage, Alaska, in April 2008 to share knowledge, identify gaps, and identify opportunities to collaborate. A follow-up meeting was convened in July 2009 in Yellowknife, Northwest Territories, Canada, at the biennial International Union for Circumpolar Health conference. Updates were provided by U.S. and Canadian representatives, and next steps were identified. A follow-up meeting is being planned by Canadian collaborators for May 2010 in Victoria, B.C., Canada, with a focus on youth.

### **Native Students Together Against Negative Decisions (NativeSTAND)—a peer education curriculum for healthy decision-making for Native youth -**

This project is a coordinated effort between the National Coalition of STD Directors (NCSD), the IHS National STD Program, CDC's Division of STD Prevention, Project Red Talon (PRT), and Mercer University School of Medicine (MUSM). A multidisciplinary workgroup was formed (including Native youth and a Native elders) to identify existing curricula to address healthy decision making for Native youth. Finding none, the workgroup identified an existing curriculum—Students Together Against Negative Decisions (STAND)—developed by MUSM. The workgroup proceeded to adapt the curriculum and (pilot) test select sections with Native youth groups. DRH will analyze evaluation data, make prescribed modifications, and widely disseminate information throughout Indian Country.

### **Ongoing HIV Projects for American Indian/Alaska Natives -**

Since 1989, CDC has partnered with the National Native American AIDS Prevention Center (NNAAPC) to provide capacity building assistance (CBA) to organizations providing services to AI/ANs nationwide. With funds from CDC, NNAAPC has developed training manuals and

resource guides for HIV providers serving Native peoples, produced multi-day regional trainings for Native-specific programs, conducted grant-writing workshops, organized national focus groups and workgroups, facilitated national strategic planning for high-school aged youth with federal and tribal education stakeholders, and championed the visibility and viability of Native communities. NNAAPC uses a national approach with regional strategies to facilitate cross-site communication, partnership development, and resource sharing. Their CBA activities are guided by a regional coalition made up of five member organizations. These coalition partners are Inter Tribal Council of Arizona (ITCA), American Indian Community House, Papa Ola Lokahi, AATCHB, and ANTHC. NNAAPC provides one-on-one technical assistance and tailored training to community-based organizations (CBOs) and health departments on effective organizational management techniques, policies and protocols needed for HIV prevention programs (confidentiality, universal precautions, safety for off-site outreach activities, and counseling and testing protocols), effective fund development, standards for reporting, executive coaching, and cultural competency. NNAAPC has provided CBA to CBOs and health departments serving Native populations, emphasizing the integration of Native principles, beliefs, and communication styles into HIV prevention activities.

NCHHSTP also provided funding through four other cooperative agreements to several Tribal organization to assist in HIV prevention services described. The Indigenous Peoples Task Force (IPTF) provides education services to prevent the transmission of HIV and to provide direct services to Natives and their family members living with HIV. IPTF has more than 14 years of experience providing HIV direct services to the Native Community throughout Minnesota but primarily within Minneapolis and St. Paul. These services include case management, outreach, risk reduction, peer education, community education, women's education, housing, and medical services. The Native American Health Center (NAHC) provides a full range of community health care and prevention services, including primary medical care, comprehensive dental care, women's health, health education, youth services, nutrition counseling, health care for homeless persons, HIV/AIDS prevention and care, outreach, prenatal and perinatal care, and outpatient mental health and substance abuse counseling.

NAHC also maintains a satellite clinic at Alameda Point, a school-based clinic in Alameda and the Healthy Nations Wellness Center, the only family fitness center in the Fruitvale neighborhood in Oakland. The ANTHC implements the Community Promise. Their HIV/AIDS Prevention Program is focused exclusively on HIV negative AI/ANs who are at high risk for HIV infection. This agency projects an overall percentage increase in persons using condoms as a result of this community-level intervention by the end of the contract period. The Native American Community Health Center, Inc. (Native Health) was established to provide primary health care, behavioral health and ancillary services to the urban, non-reservation Natives residing within the greater metropolitan Phoenix area. Native Health is primarily a Native organization, sensitive to Native cultural traditions and knowledge bases, which will always be included in services provided. Native Health is open to all to utilize their services, particularly Young Minority Men of Color and Transgender Persons.

**Colorado State University's (CSU) Center for Applied Studies in American Ethnicities and Inter Tribal Council of Arizona, Inc. (ITCA) –**

Colorado State University (CSU) has provided CBA to Native communities, Tribal Health Departments, state health departments, CDC-funded CBOs, and other organizations serving AI/ANs and Native Hawaiians. It has worked to strengthen the capacity of CBOs serving Natives to develop and implement regionally specific and community-specific strategies to assess service gaps, improve access to HIV/AIDS services, and increase utilization of services. CSU implements, improves, evaluates, and sustains the delivery of effective human immunodeficiency virus (HIV) prevention services for high-risk racial/ethnic minority populations of unknown or negative serostatus.

The Inter Tribal Council of Arizona, Inc. (ITCA) has provided CBA to AI/AN health organizations, CDC- directly and indirectly funded CBOs, health departments, and local Community Planning Groups (CPGs) to increase parity, inclusion, and representation (PIR) of AI/AN in the community planning process. ITCA provided the member Tribes with the means for action on matters that affect them collectively and individually, to promote tribal sovereignty, and to strengthen tribal governments. ITCA's National STD/HIV/AIDS Prevention Program (NSHAPP) began as the Regional STD/HIV/AIDS Prevention Program (RSHAPP) and was formed in 1989 by ITCA to respond to the increasing HIV/AIDS and STD disparity among AI tribes in Arizona, Utah, and Nevada. ITCA delivers CBA through a process that begins with four broad components: (1) cultural competencies; (2) problem identification; (3) strategy development and implementation; and (4) monitoring and evaluation.

**Capacity Building Assistance (CBA) to Improve the Delivery and Effectiveness of Human Immunodeficiency Virus (HIV) Prevention Services for High-risk and/or Racial/Ethnic Minority Populations -**

CDC, under PS 09-906, has funded two organizations under Category A: CBA for CBOs—Strengthening organizational infrastructure, interventions, strategies, monitoring and evaluation for HIV prevention, to deliver CBA to community-based organizations serving all high-risk and racial/ethnic minority populations, including Native communities. In addition, CDC has funded two organizations under Category B, CBA for Communities—Strengthening community access to and utilization of HIV prevention services, to specifically focus on Native communities. The organizations funded in Category B are AATCHB and Colorado State University.

AATCHB successfully competed for funding for 5 years to provide culturally appropriate CBA to tribal HIV and STD prevention personnel on reservations and urban centers in Colorado, Iowa, Illinois, Indiana, Kansas, Minnesota, Michigan, Missouri, Montana, North Dakota, Nebraska, Ohio, South Dakota, Utah, Wisconsin, and Wyoming to reduce health disparities currently existing for AI populations; through an expanded advisory committee, conduct a needs assessment of all regional reservations to identify current HIV/STD prevention methods, training, and technical assistance needs, and attitudes and barriers to adopting and using new techniques; and market and deliver culturally appropriate CBA resources (e.g., DEBI trainings, technical assistance, and information) to tribal communities based on results from the needs assessment. Colorado State University (CSU) also successfully competed for 5-year funding to continue to strengthen the capacity of CBOs serving Native people to develop and implement regionally specific and community-specific strategies to assess service gaps, improve access to HIV/AIDS

services, and increase use of services; train CBOs in the use of the Community Readiness Model for assessment, application, strategy development, and social marketing; ensure the CBO has broad involvement of community stakeholders and policy makers; integrate each community's unique culture, values, traditions, history, and beliefs into the strategies; and use assessment, training, and workshops built into a solid theory-based structure and logic model.

### **Ongoing Sexually Transmitted Disease Projects for AI/AN -**

The Division of Sexually Transmitted Diseases Prevention (DSTDP) has funded ANTHC to assess the acceptability, feasibility, and impact of self-collected specimens on reducing barriers to health-care-seeking behaviors and increasing STD screening opportunities among Alaska Natives in both rural and urban settings. ANTHC strives to promote internet-based educational messages targeting Alaska youth and adults that will link users to self-collected STD testing through a confidential online testing resource. They are using MySpace and Facebook to deliver educational messages and link to the online STD testing program that provides self-collected specimen kits. DSTDP plans to maintain their IAA with IHS to support and enhance STD prevention and control efforts in AI/AN populations.

This IAA assists DSTDP to raise awareness of STDs among AI/AN as a priority health issue, support partnerships and collaborations with multiple public health partners (state STD programs, IHS, tribal, and urban Indian health programs (I/T/U), and support improvement of STD programs for AI/ANs. Both CDC and IHS have felt that this IAA helps them to collaboratively increase access to up-to-date STD training for clinicians and public health practitioners—and support and strengthen surveillance systems to monitor STD trends by promoting STD research and identifying effective interventions for reducing STD. The IAA has also supported STD outbreak response efforts and integration of STD, HIV/AIDS, TB, and hepatitis prevention and control activities.

## **Infectious Diseases in Alaska Natives**

### **Infectious Diseases in Alaska Natives -**

The Arctic Investigations Program (AIP) is a CDC infectious disease field research station located on the campus of the Alaska Native Medical Center in Anchorage, Alaska. The program's mission is the prevention of infectious disease in people of the Arctic and subarctic, with particular emphasis on indigenous people's health. AIP coordinates disease surveillance in Alaska for selected bacterial and viral infections and conducts public health research to determine risk factors for disease, to evaluate prevention strategies, and to improve laboratory diagnosis. AIP operates one of only two Laboratory Response Network laboratories in Alaska and is involved in preparedness and response to public health threats in Alaska. The program provides leadership and expertise in public health concerns of peoples of the circumpolar north through international collaborations and surveillance. The AIP works closely with ANTHC and other Tribal health organizations in Alaska to improve infectious disease prevention activities by providing health data, laboratory expertise, focused investigations, and interventions.

### **Sanitation Services and Infectious Disease Risk in Rural Alaska -**

Nearly one out of three rural Alaska villages lacks in-home running water and flush toilets. Recently, funding for sanitation construction has been threatened due to a lack of evidence

supporting a health benefit for these programs. AIP and collaborators with tribal health organizations report that residents of villages lacking in-home water and sewer service were more likely to be hospitalized with skin infections and respiratory infections than those with modern sanitation services. For example, hospitalization rates for infants with pneumonia from villages lacking modern sanitation services are approximately 10 times higher than the general U.S. population. Findings were published in the *American Journal of Public Health*, November 1, 2008.

Two projects begun in FY 2008 have produced significant results: (1) an evaluation of the excess hospitalizations associated with lack of running water shows substantial increased health care costs; and (2) communities involved in a long-term study of health indicators have now received in-home water and sewer service for the first time. Health status and water use will continue to be monitored to further describe the health benefits associated with running in-home water. The next phases of these projects will be to publish the economic findings, to add water-quality testing of in-home and source water, and describe changes in water-use practices. These data will be used to support the value of ANTHC environmental health initiatives aimed at improving water and sewer service in rural Alaska.

### **Response to the Emergence of Replacement Pneumococcal Disease in Alaska Native Infants-**

Historically, rates of pneumococcal infections (meningitis, pneumonia, blood stream infections) among AN children were among the highest in the world. A pneumococcal conjugate vaccine introduced in 2001 in AK, PCV7, reduced preventable disease by 95 percent in Alaska. However, since 2004, investigations by AIP have shown that disease rates due to strains not included in PCV7 among AN children have increased and overall disease rates approach the levels seen before use of PCV7. This emergence of bacterial types not covered by PCV7 limits the utility of the current vaccine among this population. A new pneumococcal conjugate vaccine containing six additional serotypes, including those causing most of the non-PCV7 disease, has been introduced among AN e children in certain areas with highest rates of disease and is expected to be licensed for use in the general population in 2009–2010.

During FY 2009, the YKHC and Wyeth Vaccines, with support from AIP and ANTHC, introduced a new pneumococcal vaccine called PCV13 in southwest Alaska where disease rates are highest. This vaccine is being offered before licensure under a compassionate use agreement with the manufacturer and the Food and Drug Administration. The vaccine includes the most common replacement types and could prevent 75 percent of cases. This plan includes careful safety monitoring, evaluations of disease transmission and serious infection rates, and ongoing recruitment of infants and children to receive the vaccine while monitoring use, safety, and effectiveness. Results are to be reported to local health authorities and leadership as well as interested public health authorities. Licensure of the vaccine is anticipated in early FY 2010; the vaccine will be offered routinely to all Alaska children thereafter.

### **Response to High Rates of Pediatric Dental Caries among Alaska Native Children -**

Dental caries among AN children represents a substantial and long-standing health disparity. For example, an assessment from 2004 showed that 87 percent of AN 3<sup>rd</sup> graders had evidence of caries compared with 55 percent of Caucasian Alaskans of the same age. In August 2008, AIP

was asked by the YKHC in western Alaska to conduct a public health investigation to determine the prevalence of pediatric dental caries, risk factors for caries and to identify feasible plans to address the problem. The investigation included oral health exams on children in five communities, a behavioral health evaluation, and an evaluation of available data sources. The investigation concluded that pediatric dental caries are approximately five times more common in the region than for the general US childhood population. The principal risks include lack of water fluoridation and soda pop consumption. A complete report, including recommendations, was presented to the YKHC in July 2009, and discussions have begun to develop a workable long-term strategy for improving pediatric oral health.

### **Management of the Alaska Area Specimen Bank -**

The specimen bank, located in the AIP building, houses nearly 500,000 specimens that are residual from health research done in the past half century in Alaska. AIP has joined with tribal health leadership throughout Alaska to create policies and procedures related to the bank to ensure that this valuable collection is used to maximize health benefit for AN people while protecting individual privacy, respecting tribal health priorities, and informing the ANs of this resource.

The new policy and procedure provides a model for shared management and governance of this unique and valuable specimen repository. AIP co-chairs quarterly meetings with a committee of representatives from ANTHC, Aleutian Pribilof Islands Association, Norton Sound Health Corporation, Bristol Bay Health Corp, Manilaaq Health Corporation, SouthCentral Foundation, Arctic Slope Native Association, Yukon Kuskokwim Health Corporation, and Southeast Alaska Regional Health Corporation. The revised policy is now under review by the nine tribal health organizations whose people have contributed to the specimen bank. AIP is collaborating with SouthCentral Foundation to assess attitudes and desired uses for the specimen bank among Alaska Natives, as well as a catalog of specimen bank activities since its inception. These data will guide future uses of specimen bank materials and public education about the repository.

### **Support for Alaska Native Health Research –**

AIP promotes research activities by tribal health organizations and supports AI/AN health researchers. Ongoing efforts include joint CDC/Tribal health research projects and technical support to Tribal health research activities such as the ANTHC Hepatitis Program, the Alaska Native Tribal Epicenter, and the SouthCentral Foundation research program. This support includes medical and epidemiologic consultation, laboratory and specimen handling, database and statistical support, grant submission, access to other CDC resources, membership on the Alaska Area IRB (ethics board), and training students and researchers through seminars, internships and conferences. AIP was a co-sponsor of the AN Health Research Conference held March 19–20, 2009, in Anchorage, Alaska, and sponsored an AI Emerging Leaders Fellow in FY 2009 to develop a policy document and research agenda for assessing and responding to climate change in rural Alaska communities, and we mentored an Alaska Native Pharmacy Resident to research trends in antibiotic prescribing in Alaska. In FY 2009, AIP supported Tribal research activities related to tobacco control, stroke management, diabetes care, cancer screening, STDs, pharmacy services, and environmental health. We anticipate continuing this support and seeking additional student mentorship opportunities.

### **Responding to Pandemic H1N1 2009 Influenza among AI/AN Populations -**

CDC is committed to ensuring that all of Indian country is included in the 2009 H1N1 influenza preparedness and response efforts, and activities to do so include both partnerships with IHS and direct engagement with tribal governments and organizations. To coordinate these activities and enhance governmental responses to H1N1 in Indian country, CDC established an AI/AN Populations Team in the CDC Emergency Operations Center (EOC) in September 2009. Priority activities for this team include enhancing efforts to understand the impact of the pandemic on tribal communities, providing technical assistance to IHS, facilitating communications across public health agencies serving AI/AN communities, and assisting in the development and distribution of H1N1 educational materials, PSAs, etc. for tribal governments and communities. Surveillance activities so far have included an evaluation of influenza illness surveillance in AI/populations, evaluations to determine rates of hospitalizations and deaths for AI/AN compared with other racial groups, and a workgroup with the CSTE and Tribal Epicenters to improve hospitalization and mortality surveillance.

Communication efforts have included a briefing with the CDC director on the status of the pandemic in AI/AN populations, addition of a Tribal page on the CDC website to disseminate specific guidance and information, and development of specific brochures and posters to promote influenza vaccinations among AI/AN. Next steps will include supporting adverse event monitoring after influenza vaccinations; promoting the use of influenza illness data to appropriately allocate resources to AI/AN populations at increased risk; and supporting ongoing vaccination, mitigation and communications efforts in tribal communities.

## **Other Infectious Diseases**

### **Overall and Specific Infectious Diseases among the AI/AN Population -**

Activities include various ongoing epidemiologic collaborative projects between DVRD and the IHS, ANTHC, the AIP, other divisions, government agencies, and universities to describe and address disease burden, risk factors, and health disparities for overall infectious disease and specific infectious diseases among the AI/AN population. The findings from the studies and investigations provide information to assist in developing prevention strategies and reducing health disparities for specific infectious diseases among the AI/ANs. The findings also increase awareness of specific infectious diseases in the population, and initiate diseases and geographic target areas to further investigate and address the identified health disparities. These findings are used by IHS and CDC to improve the health of AI/ANs. Further, the studies along with their findings are also disseminated through presentations at international and national conferences and meetings, and in reports and publications in peer-review journals. Ongoing collaborations on studies and investigations to address infectious disease burden and disparities continue.

### **Rickettsial Disease among American Indians -**

Ongoing investigation and education efforts of rickettsial disease take place through collaboration with the IHS, particularly within areas in the Southwest region. Focus groups were conducted to identify community barriers to prevention and control and acceptability of different educational tools. A new educational program was implemented to increase awareness of Rocky Mountain spotted fever (RMSF) among the AI population in the Southwest. The program addressed and initiated prevention efforts to reduce the occurrence of rickettsial disease,

including provision of staff and supplies for tick reduction activities. In addition, the annual incidence and case-fatality rates for RMSF were found to be increasing among the AI population, substantially more than other races. This finding was published in the *American Journal of Tropical Medicine and Hygiene*. 2009; 80:72-77.

**Dog Rabies Vaccination and Population Management among American Indians -**

In many areas of the world, only 30–50 percent of dogs are vaccinated against rabies. On some U.S. Indian Reservations, vaccination rates may be as low as 5–20 percent. In 2003 and 2004, researchers studied the effectiveness of commercially available baits to deliver oral rabies vaccine to feral and free-ranging dogs on the Navajo and Hopi Nations. Dogs were offered one of the following baits containing a plastic packet filled with placebo vaccine: vegetable shortening-based Ontario slim baits (Artemis Technologies, Inc.), fish meal crumble-coated sachets (Merial, Ltd.), dog food polymer baits (Bait-Tek, Inc.), or fish meal polymer baits (Bait-Tek, Inc.). One bait was offered to each animal and its behavior toward the bait was recorded. Behaviors included the following: bait ignored, bait swallowed whole, bait chewed and discarded, bait chewed and discarded (sachet punctured), or bait chewed and consumed (sachet punctured). Bait acceptance ranged from 30.7 percent to 77.8 percent with the fish meal crumble-coated sachets having the highest acceptance rate of the tested baits.