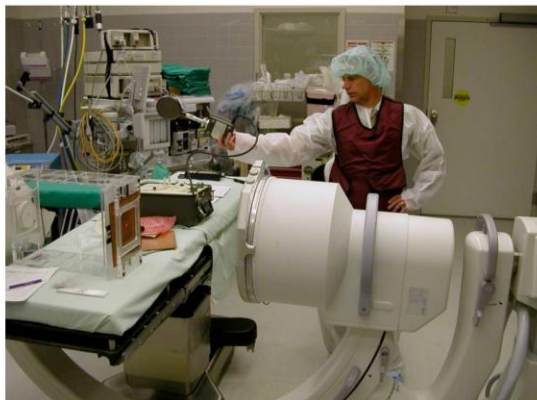


**The Environmental Health Services Program
of the Indian Health Service
Department of Health and Human Services**



Annual Report for 2008



This Annual Report for Calendar Year 2008 was produced by the Indian Health Service Division of Environmental Health Services to provide relevant information about the Program. Additional information can be obtained by writing to the following address:

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Message from the Director, Division of Environmental Health Services
Kelly M. Taylor, M.S., R.E.H.S.



I am proud to present the Indian Health Service Division of Environmental Health Services (DEHS) Annual Report for 2008. This report covers activities conducted by the Indian Health Service and tribal environmental health partners throughout the nation. The focus of the report is to highlight program accomplishments in Calendar Year 2008 that were based on the 10 essential public health services as described by the Public Health Functions Steering Committee. Also, the report is a snapshot in time capturing funding, staffing, and programmatic direction.

Within the past few years, the Division has experienced many outside influences. A budget that has not grown to meet programmatic needs, a greater focus on emergency preparedness, new and emerging diseases like the H1N1 influenza and West Nile Virus, and the concerns over global warming are a few. As always, the DEHS staff have stepped up to these challenges and addressed them while carrying on their regular duties. As I reflect on this report, I am amazed at the capabilities of the DEHS staff. The accomplishments you read in this report are due to their efforts for which I am very appreciative.

The mission of our program is:

Through shared decision making and sound public health measures, enhance the health and quality of life of all American Indians and Alaska Natives to the highest level by eliminating environmentally related disease and injury.

As the DEHS Program and the American Indian/Alaskan Native communities work together to continuously accomplish this mission, I am confident that DEHS staff will continue to meet future challenges in an exceptional and professional manner.

The Environmental Health Services Program 2008 Annual Report

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Profile of the DEHS Program

Core Services to AI/AN Communities

The current mission of the Division of Environmental Health Services (DEHS) is “Through shared decision making and sound public health measures, enhance the health and quality of life of all American Indians and Alaska Natives to the highest level by eliminating environmentally related disease and injury.” In support of this mission, the DEHS Program provides a range of services to the American Indian/Alaska Native (AI/AN) communities. These services include:

- Monitoring health
- Investigating health problems
- Informing and educating
- Mobilizing community partnerships
- Developing policies and plans that support community efforts
- Supporting laws and regulations that protect health and ensure safety
- Linking people to services
- Assuring a competent workforce
- Evaluating effectiveness of services
- Implementing innovative solutions to environmental health problems

Within the division there are three programs: General Environmental Health, Institutional Environmental Health, and Injury Prevention. General Environmental Health staff is the lead environmental health professional group providing a range of services for issues of water quality, waste disposal, hazardous materials management, food safety, community injury prevention, vector control, occupational safety and health, and other environmental health issues. Injury Prevention staff take the lead in working with communities to develop public health strategies to reduce the burden of injury experienced by AI/AN communities. Institutional Environmental Health staff have specialized skills to identify, evaluate, and respond to unique environmental safety hazards found in healthcare, educational, childcare, correctional, and industrial facilities.

2008 DEHS Program Performance

- **Service to over 19,000 facilities**
- **Over 6,900 surveys**
- **Over 290 environmental health investigations**
- **Over 500 training activities**

Program History

The roots of the DEHS Program can be traced back to 1912, when the Interior Department's Office of Indian Affairs Commissioner Burke issued a circular directing agency physicians to serve as health officers for their reservation. Over the next several decades, this responsibility for community surveys shifted towards the sanitary engineering staff. These surveys came to include a wide range of facilities from water systems to community buildings to dairy plants.

By the time of the Transfer Act, most of the components of the current Environmental Health Program were in place with agency policies for food handler training, radiological health, facility inspections, and water fluoridation. The emphasis was on establishing, expanding, and resolving basic sanitation services. The Sanitarian Aides were the workforce in the field with a few supervisory Sanitarians at Area Offices. In 1962, the first headquarters Institutional Environmental Health Officer was hired, providing advice and technical guidance on all community-based institutions.

In 1963, a joint conference of Bureau of Indian Affairs and Division of Indian Health leadership discussed collaborative efforts to combat the community accident mortality problem among Indians. An Accident Prevention Program was established within Environmental Health Services, while calls for expanded funding and authority went to Congress. In 1969, Congress provided funding and positions for the Accident Prevention Program in the Health Education program. The Accident Prevention Program continued as a collaborative effort with Health Education until 1979 when IHS Director Emery Johnson formally transferred responsibility to Environmental Health Services and the name changed to Community Injury Control, and later to Injury Prevention.

Program Resources

The current budget of the DEHS Program is approximately \$27.4 million. This funding is derived from three primary sources: Congressional allocation; the IHS Director's Initiative; and injury prevention budget enhancements (see Figure 1). DEHS funds support a wide variety of activities, including injury prevention, institutional environmental health, safety management and industrial hygiene, food safety, vectorborne disease control, and technical assistance to community water and waste disposal facility operators.

As presented in Table 1 below, the DEHS Program budget is derived from the overall Environmental Health Support Account (EHSA) that supports the activities of both the DEHS as well as Division of Sanitation Facility Construction (DSFC) Programs. For 2008, and based on the workload-based resource requirement methodology (RRM), the DEHS share of the EHSA budget was 37.65%.

Figure 2 below depicts a historical comparison of the workload-based RRM versus the distribution of program funds from 2001 to 2008.

Table 1: DEHS Program Funding Sources

Fiscal Year	Total EHSA Budget	DEHS RRM Share	DEHS Budget*	COSTEP**	Injury Prevention**	Residency**	IHS Director's Initiative	Injury Prevention Budget Enhancements	Total DEHS Budget
1998	\$42,159,000	33.80%	\$14,249,742	\$81,000	\$116,000	\$90,000	\$304,000	\$0	\$14,840,742
1999	\$44,244,000	33.80%	\$14,954,472	\$206,000	\$174,100	\$120,000	\$304,000	\$0	\$15,758,572
2000	\$49,162,000	33.20%	\$16,321,784	\$208,000	\$175,000	\$67,600	\$304,000	\$1,475,000	\$18,551,384
2001	\$50,997,000	34.20%	\$17,440,974	\$184,000	\$69,000	\$63,100	***	\$1,779,000	\$19,536,074
2002	\$52,856,000	34.93%	\$18,460,797	\$224,000	\$111,000	\$100,000	***	\$1,779,000	\$20,674,797
2003	\$54,437,000	36.62%	\$19,937,064	\$194,100	\$88,000	\$100,000	***	\$1,779,000	\$22,098,164
2004	\$55,888,650	33.63%	\$18,794,176	\$240,000	\$118,700	\$100,000	***	\$1,779,000	\$21,031,876
2005	\$56,328,611	32.80%	\$18,475,968	\$232,000	\$74,000	\$100,000	***	\$1,779,000	\$20,660,968
2006	\$57,447,796	34.03%	\$19,547,711	\$208,000	\$67,500	\$100,000	***	\$1,779,000	\$21,702,211
2007	\$63,235,458	35.68%	\$22,564,290	\$232,000	\$98,000	\$100,000	***	\$2,779,000	\$25,773,290
2008	\$64,576,052	37.65%	\$24,313,637	\$216,000	\$61,000	\$100,000	***	\$2,779,000	\$27,469,637

*Represents an approximation based on initial DEHS and DSFC RRM calculations

**OEHE Funds Provided to DEHS

***IHS Director's Initiative, \$304,000 was added to Injury Prevention Budget Enhancements (column to the right) starting in 2001

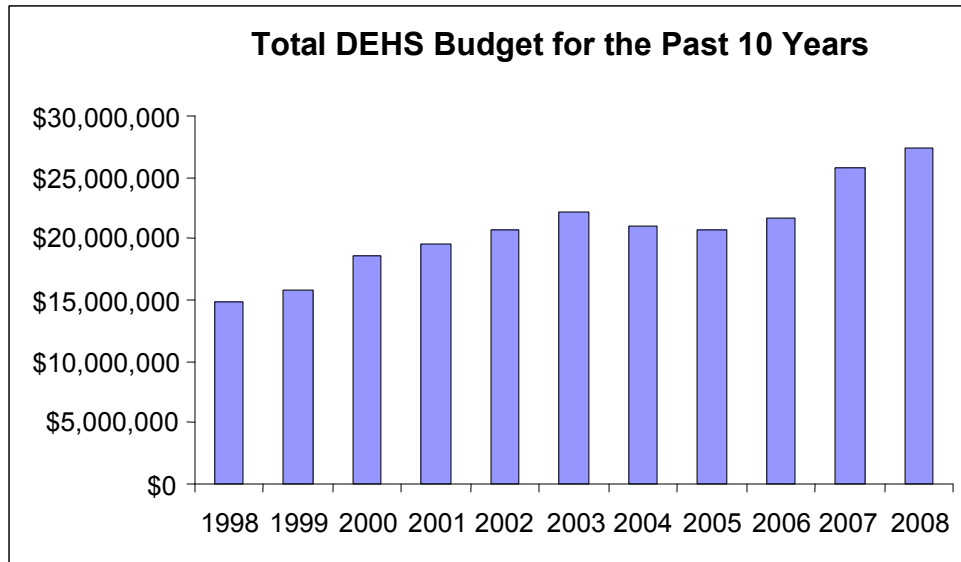


Figure 1: Historical DEHS funding for the past 10 years

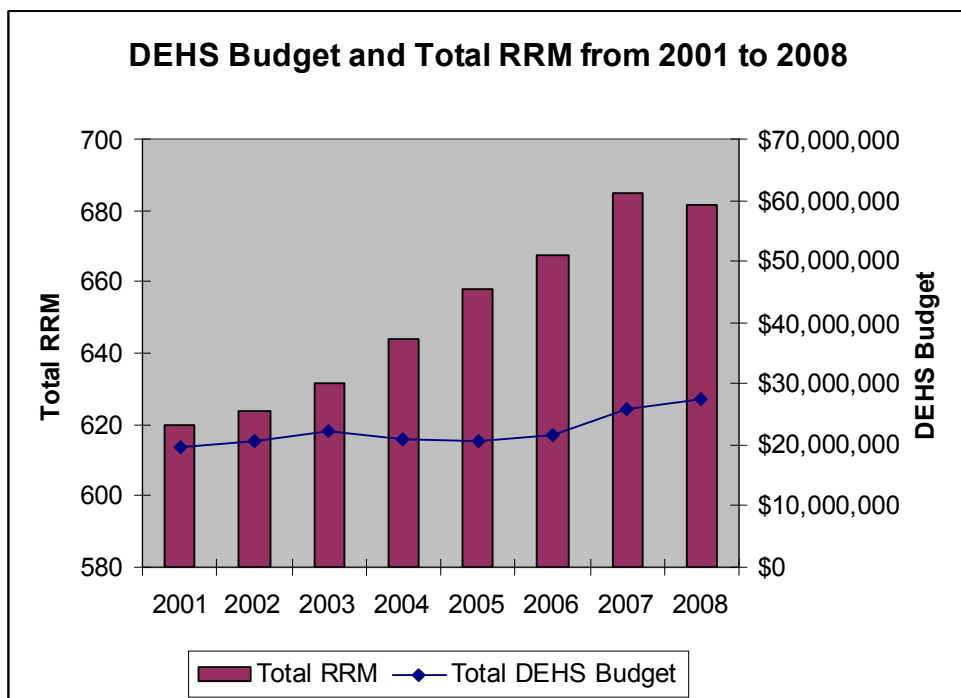


Figure 2: RRM (workload) vs. actual funding from 2001 until 2008

Program Structure

True to its historical beginnings, the DEHS Program is a field-based environmental health services program that prides itself on supporting the needs of individual tribal communities. DEHS operates under a very decentralized organizational structure, with most of its staff employed in District and Field offices throughout the 12 Indian Health Service (IHS) Areas. Area Office staff typically consist of the DEHS Division Director and one or two professional staff (Injury Prevention Program Manager and/or Institutional Environmental Health Program Manager). District sanitarians and their support staff are often located away from the Area Office and closer to the tribal communities.



Figure 3: A vehicle occupant restraint use check-up event in Peach Springs, Arizona

DEHS Headquarters (HQ), located in the IHS Headquarters office in Rockville, Maryland, consists of a Director, Assistant Director, Institutional Environmental Health Manager, and Injury Prevention Program Manager. In addition, an Environmental Health Data Systems Manager supports the information systems used by the Program on a national basis.

In 2008, the DEHS Program consisted of a total of 276.5 staff, including the five HQ staff positions.

DEHS and the Ten Essential Public Health Services

Our Operating Philosophy

The operating philosophy of the DEHS Program is built around the Ten Essential Public Health Services first articulated in 1994 by a partnership of local, state, and national public health leaders. These services were used by the National Center for Environmental Health of the Centers for Disease Control and Prevention as a basis for its six goals for the revitalization of environmental health in the twenty-first century. IHS has taken a proactive approach to the Ten Essential Services and has incorporated this set of strategies into the methods in which it delivers services to tribal communities across the country.

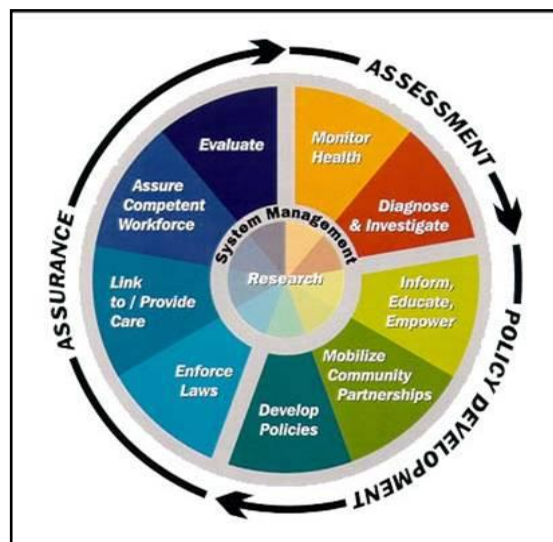


Figure 4: Ten Essential Services

The Ten Essential Services are as follows:

Assessment:

1. Monitor health status to identify community health problems
2. Diagnose and investigate health problems and health hazards in the community

Policy Development:

3. Inform, educate and empower people about health issues
4. Mobilize community partnerships to identify and solve health problems
5. Develop policies and plans that support individual and community health efforts

Assurance:

6. Support laws and regulations that protect health and ensure safety
7. a) Link people to needed personal health services and b) Assure the provision of health care when otherwise unavailable
8. Assure a competent public health and personal health care workforce
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services

System Management:

10. Research for new insights and innovative solutions to health problems

Using the Ten Essential Services as a framework, the following pages present a detailed glimpse at Program operations as well as projects conducted throughout the tribal communities served by the Program.

1) **Monitoring Health**

For the DEHS Program, health monitoring activities not only include real-time surveys for a variety of public-health related issues but also the proactive use of regional and national information systems to manage, track, and respond to trends and issues. Program staff provided service to a total of 19,294 facilities during 2008. These services included 10,735 activities with 6,973 surveys that monitored the environmental health status of these facilities.

By the end of FY 2008, many of the 12 Areas used data from WebEHRS to identify baseline environmental risk factors and to established baseline measures. For the Injury Prevention Program, 11 Areas administered recognized occupant protection surveys in at least one community in order to establish baselines for seatbelt use.



Figure 5: Conducting an X-ray survey

During 2008, DEHS funded an expansion of the Notifiable Disease and External Cause of Injury (NDECI) program, the Web-based data retrieval system that began in the Albuquerque Area. The system retrieves specific injury or disease categories for tracking and reporting using "passively" exported Resource Patient Management System (RPMS) to National Programs. The application tracks and reports the targeted injury or disease categories via a Web-based application that can provide reports by national, area, service unit, facility, and community level. The application also supports a robust security system that allows designated national- or Area-level users to provide access to appropriate staff in their respective organizations. Data can be retrieved by ICD9 codes used to define the disease "groupings" for injuries, asthma, notifiable diseases, intestinal disease, and vectorborne diseases.

WebCident is a critical data collection and analysis tool supporting healthcare accreditation in the areas of information management, medication management, environment of care, and regulatory concerns for occupation safety and health reporting. Since it was launched in 2002, WebCident has collected information on more than 41,000 worker, visitor, and patient incidents at 397 IHS and tribal facilities. During 2008, there were 9,977 incidents reported.

In 2006, the Office of Clinical and Preventative Services (OCPS) asked the Environmental Health Data Systems Manager and the Institutional Environmental Health Program Manager to work with them in expanding WebCident to collect patient safety data such as medication errors, patient falls, and adverse drug events. The patient safety expansion was very successful. Since it began, the WebCident pharmacy medication error module has saved IHS \$250,000 each year for costs associated with the reporting system it replaced. The patient safety component was a performance measure for OCPS.

2) *Investigating Health Problems*

Environmental Health Service staff conducted a variety of environmental health investigations during 2008, with 293 reported in WebEHRS. Following are a few highlights that represent the level of activity.

- Alaska Area: In 2008 the Alaska Native Tribal Health Consortium's Department of Environmental Health Support (ANTHC-DES) partnered with the Centers for Disease Control and Prevention (CDC) Arctic Investigations Program to determine the impact of optimal water fluoridation in remote Alaska villages. Decayed, Missing or Filled Teeth (DMFT) assessments were performed on 355 children in five villages. After controlling for other factors that may influence early childhood dental caries, it was determined that children from optimally fluoridated villages had about three times fewer dental caries than children from similar non-fluoridated villages.
- Portland Area: DEHS staff led an investigation of the Yakima Indian Nation's Satus Longhouse Water System contamination. The staff identified possible contamination sources, coordinated follow-up sampling, and worked with clinical providers to start surveillance for possible gastro-intestinal illnesses associated with the contaminated drinking water. The immediate response and resulting actions protected the public health and provided a new safe water supply to the Tribe so cultural and religious activities could continue in the traditional Longhouse.
- Albuquerque Area: The Jicarilla Apache Nation and other communities within the Albuquerque Area received 20 mobile homes from the Federal Emergency Management Agency (FEMA) in 2008. Due to a housing shortage, some of the units were occupied or planned for near-term occupancy immediately. Albuquerque Area Office of Environmental Health & Engineering (OEHE) staff, specifically DEHS and DSFC, facilitated the IHS response to community concerns and needs surrounding possible carcinogen health risks resulting from environmental formaldehyde contamination exposure in the FEMA trailers. OEHE teamwork, in close collaboration with the communities, resulted in the development of a strategy for addressing public health risk associated with formaldehyde in the FEMA trailers.
- Phoenix Area: One of the many challenges on the Havasupai reservation was the effective response and follow-up to increased cases of animal bites. Response procedures to dog bites were insufficient: suspected animals were not quarantined when necessary; bite referrals to IHS were often delayed; and there was no animal control officer (ACO) locally to follow-up. During 2008, the Tribe's capacity to respond to dog bites in the community was significantly improved. DEHS recommendations to the Tribal council resulted in:

- The Tribe hiring their first ever animal control officers (ACOs; two tribal members)
- The two ACO's attending their first formal training
- An animal bite response and investigation protocol being developed for the ACO's to reference
- The Tribe fully supporting the two ACO's in two week-long training courses sponsored by the National Animal Control Association



Figure 6: Fitting a dog with a tick collar

With the unequivocal support from the Tribal Council, the Havasupai Tribe now has a functioning and legitimate animal control program

3) *Inform, Educate, and Empower*

Education is a cornerstone of any successful public health program as it is the first step in raising awareness and empowering individuals and communities to participate in resolving community health issues. DEHS staff conducted over 500 training sessions during 2008 on a variety of topics.

The Environmental Health Support Center in Albuquerque provided courses in environmental health program management, injury prevention, general environmental health services, and institutional environmental health courses for a total of 28 courses. Ten Fellows from five Areas graduated from the Class of 2008 Program Development track of the Fellowship in May, and 12 Fellows in eight Areas began the Class of 2009 Program Development track of the Injury Prevention Specialist Fellowship.



Figure 7: DEHS staff conducting a training session

To assist tribes in building injury prevention infrastructure and capacity, the IHS awarded five-year Cooperative Agreements totaling more than \$1 million to 32 tribes beginning in FY 2005. In 2008, the Injury Prevention Program distributed approximately \$1.4 million through the IP Cooperative Agreement Program (TIPCAP). A summary of this funding by Area is presented in Table 2.

Table 2: IHS TIPCAP Funding Awards by Area

AREA	Part I Adv \$75,000 / 5 yrs	Part I Basic \$50,000 / 5 yrs	Part II Intervention \$10,000 / 3 yrs	TOTAL
Oklahoma	2	3	2	7
Bemidji	2	1	3	6
Phoenix	0	3	1	4
Albuquerque	1	1	1	3
Aberdeen	0	2	0	2
Nashville	0	0	3	3
Alaska	1	2	0	3
Navajo	2	0	0	2
California	1	1	0	2
TOTAL	9	13	10	32

Part I-Advanced Sites

- Caddo, OK
- California Rural Indian Health Board, CA
- Fond du Lac Band of Lake Superior Chippewa, MN
- Hardrock Chapter, AZ
- Jemez Pueblo, NM
- Kaw, OK
- Navajo Highway Safety Program, AZ
- Northern Native American Health Alliance, WI
- South East Alaska Regional Health Consortium, AK

Part I-Basic Sites

- Bristol Bay Area Health Corporation, AK
- Choctaw, OK
- Indian Health Council, CA
- Kiowa, OK
- Norton Sound Health Corporation, AK
- Oneida Tribe of Wisconsin, WI
- Osage, OK
- Quechan, CA
- San Felipe, NM
- Sisseton-Wahpeton Oyate, SD
- Standing Rock Sioux, ND
- Toiyabe Indian Health Project, CA
- White Mountain Apache, AZ

During 2007, injury prevention received an additional \$1 million in supplemental funding. Proposals were received from the Areas for special projects. Ten projects were funded in 2008; these projects are presented below in Table 3.

Table 3: Injury Prevention Program Funding Distribution – FY 2008

	Area	Injury Prevention Project Title	IP Funding	OEHE Funding
1	AB	Fall Prevention / Fort Berthold SU		\$20,000
2	AB	Injury Prevention Project-Traumatic Brain Injury		\$50,000
3	AQ	Data Project Southeast Regional Partnership	\$148,300	
4	AK	Economic Cost of the Burden of Injury	\$207,336	
5	BI	Fall Prevention Fort Belknap		\$10,000
6	CA	Child Passenger Protection & Safety Helmets		\$27,571
7	NV	Fall Prevention / Gallup Service Unit		\$20,000
8	NV	Navajo Law Enforcement		\$100,000
9	PH	Step Safe: A Comprehensive Elder Fall Prevention Program		\$102,800
10	PH	Violence Prevention Demonstration Program. Amount requested: \$114,000 (18 month project period)		\$114,000
		Totals	\$355,636	\$374,371

In collaboration with the IHS *Primary Care Provider*, beginning in 2007 every July issue will be dedicated to injury prevention. The 2007 and 2008 issues presented articles on cost of injuries, guiding principles of the IP Program, the Injury Prevention Tribal Cooperative Agreement program, and other injury prevention-related topics.

To reduce the rate of fire and burn injuries in American Indian and Alaska Native children, IHS, U.S. Fire Administration, and Head Start are continuing the support for the Sleep Safe Campaign. In addition to children aged 1–4, grandparents of the Head Start children were included in the Sleep Safe program for 2008. Seventeen Head Starts were funded \$150,000 for Sleep Safe, and over 9,500 smoke detectors were distributed to Head Start families with children. Twenty-three Ride Safe Head Start Projects were funded a total of \$224,662 in 2008. Ride Safe is similar to Sleep Safe, but it is aimed at reducing motor vehicle injuries in young children attending Head Start programs.

4) ***Mobilize Community Partnerships***

To leverage resources towards public health issues, all Areas work with local, state, and regional public health agency partners and encourage tribes to do the same. In addition, Areas work with regional offices of other federal agencies to deliver services, including the following:

- Administration on Aging
- Administration for Children and Families, Head Start Bureau
- Agency for Toxic Substances and Disease Registry
- Bureau of Indian Affairs
- Centers for Disease Control and Prevention
- Food and Drug Administration
- Environmental Protection Agency
- Department of Homeland Security



Figure 8: DEHS Staff working with CDC

Examples of these community partnerships for 2008 include the following:

- Aberdeen Area: The Sleep Safe project mobilizes community partners (Head Start), local fire departments, etc. to install alarms in homes within the community. At the Rosebud site, Head Start is working with the local Bureau of Indian Affairs and Volunteer Fire Departments to install the alarms.
- Alaska Area: The Air Toxics Under the Big Sky is a problem-based education model in which students perform scientific research on a local environmentally relevant problem. The project is a collaboration with the University of Montana, the Hoonah High School, and the Southeast Alaska Health Consortium (SEARHC). Air Toxics Under the Big Sky involves high school students in collecting air samples inside and outside their homes. As part of this program, teachers, students, and university researchers investigate the relationship between air pollutants and their harmful respiratory effects. Students experience scientific research, use scientific equipment, gain an insight into the relationship between the environment and public health, and develop scientific hypotheses. The student research efforts were then presented to the school at the annual Air Toxics Under the Big Sky Symposium held in Montana.
- Alaska Area: The Yukon Kuskokwim Health Corporation Office of Environmental Health & Engineering (YKHC-OEHE) in Bethel, Alaska partnered with the U.S. Fish and Wildlife Service to conduct monitoring of subsistence-harvested birds for highly pathogenic avian influenza (HPAI). The U.S. Department of Interior identified this western region as a priority for surveillance as it is the site of migratory bird flyway crossovers from Asia to the United States. In 2008, the YKHC-OEHE staff coordinated an intensive sampling effort in 10 Alaska Native villages. This effort resulted in the training of 10 village coordinators and the collection of 2,696 samples.

- California Area: The Yurok Tribal Solid Waste Clean-up has participation through several different federal, state, and Tribal partners. The clean-up plan was provided by IHS and adopted through the local Tribal Council. The State of California Integrated Waste Management appropriated \$800,000 for the clean-up of three different solid waste illegal dump sites. Tribal personnel were provided Hazardous Waste Operations (HazWOPER) certification during local labor hiring by Integrated Waste Management (State of California Solid Waste). Recommendations were made from the federal Environmental Protection Agency (EPA) during a state board hearing attended by representatives of EPA, IHS, state and Yurok Tribal representatives. Two dumps sites have been cleaned up and the third is scheduled for cleanup in 2009.
- Navajo Area: During 2008, Navajo Area IHS (NAIHS) funded the Hardrock Council on Substance Abuse, Inc. to implement a community-based injury prevention project titled “Sober Drivers, Safe Hardrock Roads.” The success of this program was based on a partnership with the injury prevention program and law enforcement. The Hardrock Injury Prevention Program and Navajo law enforcement signed a memorandum of understanding (MOU) to carry out sobriety checkpoints in the local community and signed another MOU to perform seat belt and child safety seat checkpoints in the local community.
- Navajo Area: The NAIHS funded the Ganado Fire Department during 2008 to design and implement a GPS-based emergency 911 system within the Ganado Fire District. Critical partners in this project included the NA IHS Injury Prevention Program, the Ganado Fire Department and local Chapter on the Navajo. The Ganado Fire Department received the NAIHS Injury Prevention funds to begin purchasing the IT equipment needed to outfit their emergency response vehicles. Other grants and funds were used to purchase software to complete the hardware equipment within the units. Part of the Chapter resolutions included an offer of assistance by the community to collect data for the Emergency Mapping System. This system is now in place.
- Navajo Area: In 2008, the Shiprock Office of Environmental Health began a partnership with Utah Health Department (UHD) officials to address prevention services needs for residents living on the Utah side of the Navajo Nation. After meeting with the UHD officials and identifying resident needs, it was decided that the unique geography and community needs of the Four Corners area demanded a more broad-based approach so that local communities could collaborate on prevention issues. As a result of the initial meeting, the need for the formation of a multi-disciplinary coalition became apparent and planning efforts for such a coalition ensued. In February 2008, representatives from San Juan County Utah, Safe Kids, Utah Department of Health, Shiprock Office of Environmental Health, Ute Mountain Ute Tribe, Albuquerque Area IHS Office of Environmental Health, Colorado Department of Health, Blanding, Utah Police, Navajo Nation Highway Safety, Kayenta Health Education, Arizona Safe Kids, and other organizations came together and formed the Four Corners Injury Prevention Partnership.
- Oklahoma Area: The Oklahoma Area has established a positive working relationship with several regulatory agencies. Tribes and IHS have responsibility for environmental health

needs for the states of Oklahoma, Kansas, and Texas. Regulatory agencies in these states had concerns regarding consumer safety in several environmental public health areas. Through a collaborative initiative, key stakeholders were identified and included in discussions about public health codes across all jurisdictions. A collaborative approach was utilized to identify and include all stakeholders (Oklahoma State Department of Health, Oklahoma City/Tulsa City-County Health Department, Oklahoma Department of Environmental Quality, and National Indian Gaming Commission) to encourage consistent application of public health and environmental public health oversight across all jurisdictions within the state. It was DEHS' goal to develop an understanding of the current reality, to create a shared vision among stakeholders, and to craft possible solutions around these issues. Further goals of this collaborative effort include the development of consistent approaches to training on the uniform codes as well as exploring the possibilities and advantages of sharing resources for training, and other methods of assuring improved public health and environmental public health outcomes across Oklahoma.

- Portland Area: The Portland Area initiated a Microbial Source Tracking Project. To accomplish this, a project team was formed which included the Tribe, EPA Region 10, IHS, and the State of Washington. This water sampling study involved microbial source tracking of shellfish beds. The source for the shellfish beds is a conditionally exempt, contaminated body of water. Shellfish are a primary source of income for many tribal members, as well as a traditional food. The microbial source tracking is an exciting new method for determining sources of water contamination based on polymerase chain reaction (PCR) analysis and DNA testing of the sample to distinguish between human or ruminant sources of microbial contamination.
- Phoenix Area: Reno District EHS staff along with staff from the Nevada State Office of Suicide Prevention (OSP) approached the Indian Health Board of Nevada (IHBN) and Inter-tribal Council of Nevada (ITCN) about the possibility of applying for Substance Abuse Mental Health Service Administration's Youth Suicide Prevention Grant on behalf of the 26 Tribes in Nevada. The impetus for approaching IHBN and ITCN was tri-fold. First, Nevada Tribes were quite small comparatively to other Tribes in the U.S. and it was felt that they would not be able to successfully compete individually. Secondly, work in the area of suicide prevention had been occurring at several reservations through the collective efforts of Nevada's OSP and the IHS EHS Program which could benefit other Tribes if resources were available. Finally, the grant award amount was very significant (up to \$500,000 per year for up to three years). The need for expanded suicide prevention activities was acknowledged and through collaborative efforts, IHBN, ITCN, Nevada's OSP and Reno District EHS, a grant proposal was submitted in early 2008. The grant proposal was accepted in June 2008 and later awarded in full at \$1.5 million.

5) *Develop Policies and Plans that Support Community Efforts*

Once community health issues are identified, policies and plans can be an effective tool in the management of these issues. Examples of how Area Offices developed policies and plan to support community efforts follow.

- Aberdeen Area: During 2008, reporting of environmentally related communicable diseases improved throughout the Aberdeen Area. To help accomplish this improvement, example policies and procedures were developed and implemented at all Area healthcare facilities to facilitate reporting of environmentally related communicable diseases to local EHOs and Tribal Sanitarians.
- Navajo Area: To address injury prevention services needs for Navajo Nation residents living on the Utah side of the Nation, an injury prevention action plan was developed. The plan specifically focused on road safety, teen driving, and child passenger safety. Three injury prevention projects were created with each stakeholder agreeing to undertake specific areas of the action plan.
- Albuquerque Area: During 2008, DEHS staff developed a Standard Operating Procedure (SOP) to address staff involvement in environmental lead risk assessments and case management for referrals of clinically confirmed elevated blood lead levels (EBLL) in children living on tribal lands within the service area. The SOP corresponds with the IHS-Albuquerque policy on EBLL, and outlines a collaborative effort between the IHS-DEHS staff and IHS community health staff in conducting EBLL environmental investigations. The SOP is also part of the DEHS ongoing staff standardization program.
- Nashville Area: In the Nashville Area, there are a growing number of cook-chill systems being used within large food service operations. At the request of one operation, the Area assisted in the development of a Hazard Analysis Critical Control Point plan to meet the requirement of the model FDA Food Code. This plan can be used to develop plans for other facilities as well.

In addition to Area efforts to develop policies and plans, Program strategic planning was a major national emphasis during 2008. Approximately 30 DEHS staff was involved on teams formed to create significant, tangible progress on the four Primary Vision Elements conceived during the February 2007 annual meeting held in Nashville, Tennessee. Program leadership (HQ and Area EHS Directors) identified these four initiatives as having the most positive impact on the Program over the next several years.

DEHS PRIMARY VISION ELEMENTS

1. A nationwide clear and uniform definition of needs to make a compelling case for budget and prioritization of our work
2. A dynamic, effective, and sustainable DEHS data system
3. Standardized guidelines across the program that support uniform program management and result in positive outcomes
4. DEHS will be actively involved in budget and RRM discussions

These Primary Vision Element Teams were supported by a Core Group comprised of several HQ and Area-level staff. The Core Group was responsible for reviewing work products from the four teams and providing input to each of the teams via liaison members.

In April, over 31 DEHS staff from all 12 IHS Areas participated in a three-day strategic planning workshop in Denver, Colorado. The objective of this workshop was to provide a working session for the four teams. During the course of this workshop, each team provided a progress update to the group-at-large, conducted work on their initiatives, and provided deliverables and/or a projection of deliverables for moving forward.

Effort and accomplishments for each of the Vision Element teams at the 2008 workshop included the following:

Team #1 – An Improved Definition of Needs

- The three major objectives of this team are to 1) develop a national needs assessment methodology; 2) relate needs assessment to budget; and 3) relate needs assessment to work prioritization.
- A pre-workshop survey indicated that the majority of DEHS Directors did not feel that RRM based on FDS adequately addresses need. Better indicators might include: service population; disease rates; risk-based factors; or critical deficiencies observed during surveys.
- During the workshop, the team developed a list of screening criteria to be used to identify the most pressing environmental health areas for the Program.
- Using these criteria, the following five areas were identified as the most pressing: Drinking Water; Food; Child Care; Healthy Homes; and Vectors.



Figure 9: Team #1 during April 2008 strategic planning workshop

Team #2 – A Dynamic, Effective, and Sustainable Data System

- A wish list of data systems features was developed in the 2007 workshop and provided to this group; this list contains over 50 items.
- The previously charged WebEHRS group was also seen as a source of improvement information for the DEHS data systems.
- The group also mined the data from all prior data system-related surveys from two years of WebEHRs queries, which yielded rich information.



Figure 10: Team #2 during April workshop

- The team conducted a table-top exercise during the workshop that explored different outputs from data systems in terms of the Ten Essential Services and outcome-versus-process measurements.

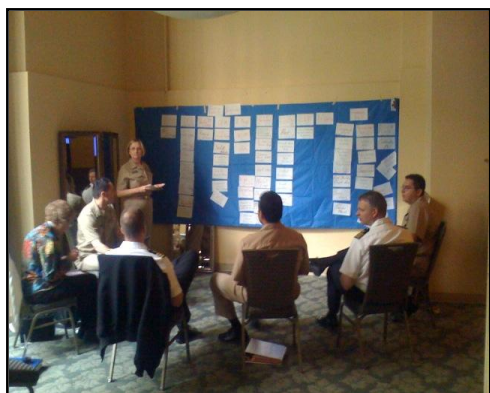


Figure 11: Team #3 during April workshop

Team #3 – Standardized Guidelines

- Through a series of teleconferences, the team honed in on the central task of rewriting and updating the IHS Technical Handbook Chapter 11 description of the DEHS Program. By starting with this document, the team felt that it would have the most impact and gain the most ground on this strategic initiative.
- During the workshop, the team brainstormed the organization and outlining of the scope of the Chapter 11 rewrite.

Team #4 – Resource Requirement Methodology

- Prior to the workshop, the team had developed a project charter, determined its deliverables, and researched existing documents.
- Much of the workshop was spent drafting a slide presentation, which was presented to the group-at-large.
- Team member assignments were made for beginning to draft a narrative document on Program budgetting.



Figure 12: 2008 DEHS strategic planning workshop participants

Throughout the remainder of 2008, the teams conducted virtual team meetings, typically on a monthly basis.

6) ***Support Laws and Regulations***

Because IHS is not a regulatory authority, we often mistakenly discount this essential service. On the contrary, our staff has an important part to play in the enforcement process. Our surveys assure compliance with environmental health and protection laws and policies. We collaborate with tribal programs to review, evaluate, and revise laws and regulations designed to protect health and safety to ensure that they reflect current scientific knowledge and best practices. We educate people who are supposed to obey or to enforce laws and regulations in order to encourage compliance. Some examples from the Areas include:

- Aberdeen Area: Head Start staff at Rosebud, Santee Sioux, Winnebago, Yankton, and Sisseton sites worked with DEHS to encourage the local Housing Authorities to ensure enforcement of existing building codes or local requirements that required working smoke alarms in public housing.
- Navajo Area: The community-based injury prevention project, Sober Drives, Safe Hardrock Roads is funded by the NAIHS. This program has successfully worked with local law enforcement to enforce driving under the influence laws and primary and secondary occupant restraint laws. A MOU to carry out sobriety checkpoints was signed.
- Portland Area: When the Satus Longhouse water system was contaminated, DEHS staff ensured the boil water notice was posted according to EPA regulatory requirements, negotiated a reduced monitoring requirement from EPA for the new system that was more economically feasible for the Tribe, and still maintained standards to protect public health.
- Albuquerque Area: The Food Safety Training Program developed by this Area was aligned with the FDA Model food code for retail food service.
- Phoenix Area: DEHS staff initiated a review of Chapter 10 of the Havasupai Tribe's health and safety ordinance, which relates to Animal Control rules and regulations for the community. The primary purpose of the chapter/ordinance is to "protect the health and safety of the people of the Havasupai Tribe from the threat of rabies and other diseases which can be transmitted from animals to humans by regulating the movement, impoundment, and treatment of animals." Key provisions outlined (and still under review by the Tribal Council) in the chapter/ordinance include: animal licensing and fees, limit on the number of companion (dogs/cats) animals owned per household, animal rabies vaccination requirements, impoundment criteria, and the prevention of animal cruelty.

7) *Link People to Services*

Table 4 displays the current level of need funded (LNF) for each of the 12 Areas. Data provided represents both IHS staff and tribal staff.

Table 4: Level of Need Funded for 2008

Area	# Tribal & IHS Staff	RMM	% LNF
Aberdeen	25	53.9	46.4%
Alaska	35	93.8	37.3%
Albuquerque	22	34.6	63.6%
Bemidji	24	51.1	47.0%
Billings	12	32.3	37.2%
California	7	46.3	15.1%
Nashville	36	42.9	83.9%
Navajo	36.5	109.9	33.2%
Oklahoma	25	90.2	27.7%
Phoenix	37	67.2	55.1%
Portland	7	48.1	14.5%
Tucson	5	11.6	43.3%
Headquarters	5		
Total	276.5	681.8	39.8%

As can be seen in this table, the DEHS Program strives to accomplish its tasks at a funding level of approximately 40% of the estimated actual need. In order to maximize the utilization of available resources, DEHS has established interagency agreements with the following federal agencies:

- Centers for Disease Control and Prevention
- National Highway Traffic Safety Administration
- Uniformed Services University of the Health Sciences
- U.S. Fire Administration

8) *Assure a Competent Workforce*

Successful delivery of DEHS Program services to tribal communities rests on the foundation of a competent and motivated workforce. Figure 13 shows the numbers of student externs hired for the past 18 years. In 1994, a mandated reduction in Full Time Equivalent (FTE) staff resulted in a moratorium placed on the recruitment of summer externs. In 1994, no externs were hired. However, the program began to rebound in FY 1995, and by FY 1999 returned to pre-1994 levels.

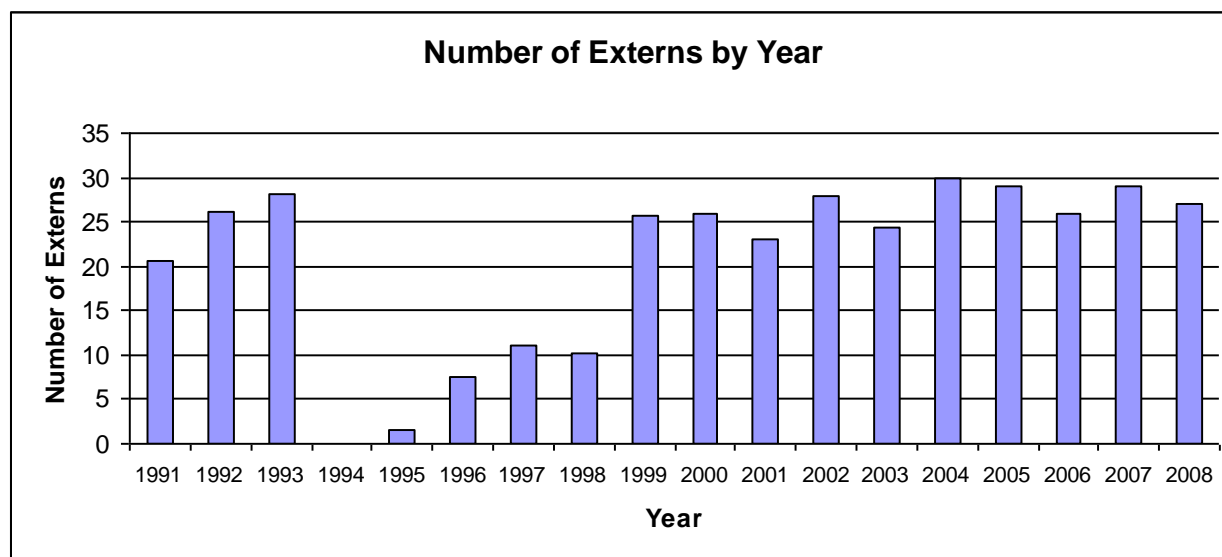


Figure 13: Number of college students participating in the DEHS extern program by year

DEHS views the opportunity to offer financial support for long-term training as a major retention tool and has supported staff in master programs for many years. During 2008, Areas reported 23 staff has been funded by IHS for college courses. Out of the 23, 18 were federal employees and 5 were tribal employees. Staff in 10 out of the 12 Areas received long-term training support. Two additional staff were enrolled in the Institutional Environmental Health Residency and Post graduate Program at the Uniformed Services University of the Health Sciences during 2008.

Staff recognition is another important aspect of DEHS retention efforts. Table 5 shows the distribution of PHS, IHS, and Tribal awards that were presented to DEHS staff during 2008.

Table 5: Summary of Awards Received by EH Staff in CY 2008

Award Type	AB	AK	AQ	BE	BI	CA	NS	NV	OK	PH	PO	TU	TOTAL
Public Health Service Awards													
OSM												1	1
Commendation Medal				1					1	1			3
PHS Achievement Medal	1	1	1			2		1		2	1		9
PHS Citation							2			2	2		6
Crisis Response Service Award	3			2		1		2	1				9
Outstanding Unit Citation	2	3											5
Unit Commendation						4				2			6
Isolated Hardship								1		1			2
Training Ribbon										1			1
Field Medical Readiness Badge								1					1
Foreign Duty Award								1					1
Special Assignment Award								1					1
IHS Area Awards	1		5	6		1	2	2	1	2	1		21
Civil Service Personnel Awards				1				16	2	1	1		21
National IHS Awards		2	4					3		2			11
Other National Awards		1			1					1			3
Tribal Awards		3											3
TOTAL AWARDS	7	10	10	10	1	8	4	28	5	15	5	1	104
Percent Staff Receiving Awards													
Federal	88%	None	29%	100%	75%	60%	50%	59%	22%	43%	75%	75%	
Tribal	0%	64%	0%	54%	18%	*NR	*NR	*NR	*NR	9%	*NR	*NR	

Figure 14 shows the distribution of DEHS staff (N=276.5) among the three major program areas: General Environmental Health, Injury Prevention (IP), and Institutional Environmental Health (IEH). It is worth noting that 85% of staff are field-based.

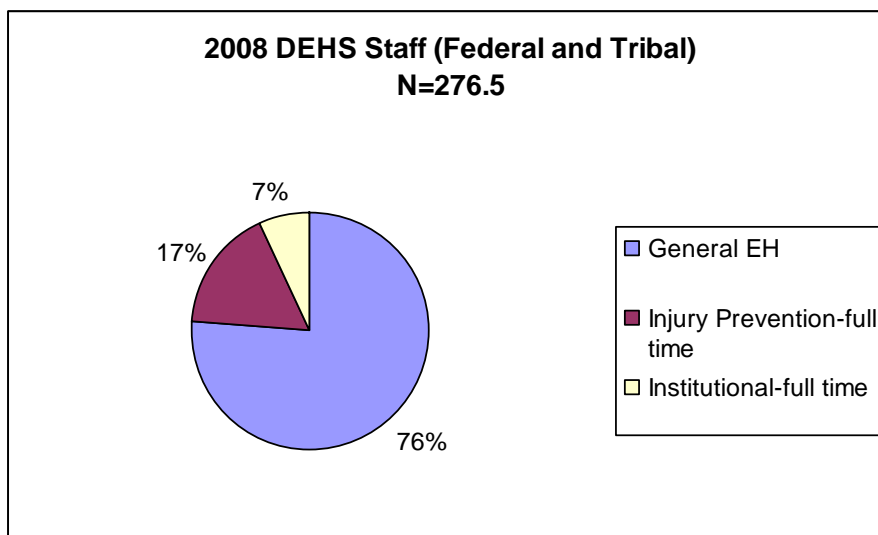


Figure 14: Distribution of staff within the three major program areas

*Injury Prevention includes Part I Cooperative Agreement funded staff.

*Institutional does not include safety officers.

Thirty two percent (32%) of all DEHS staff, including Tribal, have master degrees in public health or a related field. Fifty one percent (51%) of federal staff and 17% of tribal staff have this advanced degree. A break out by discipline is presented in Figure 15. Eighty-nine percent (89%) of institutional program staff have master degrees. General Environmental Health follows with 31% and Injury Prevention has 23%.

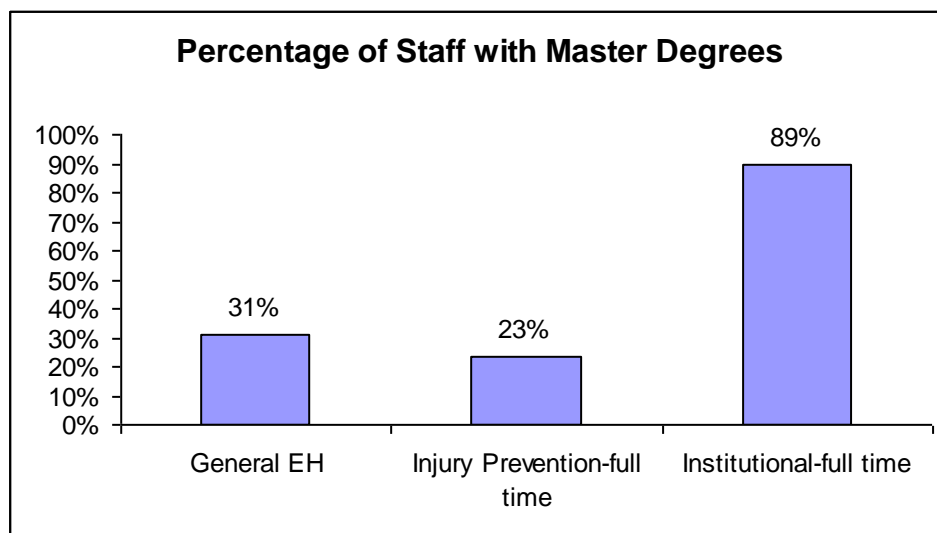


Figure 15: Percentage of staff with master degrees within the three major program areas

Fifty six percent (56%) of all DEHS staff is Registered Sanitarians or Environmental Health Specialists with 68% of federal staff and 47% of tribal staff registered. Registration by the three major program areas is summarized in Figure 16. Registration is highest in the Institutional Environmental Health program with 100% of tribal staff and 94% of federal staff registered.

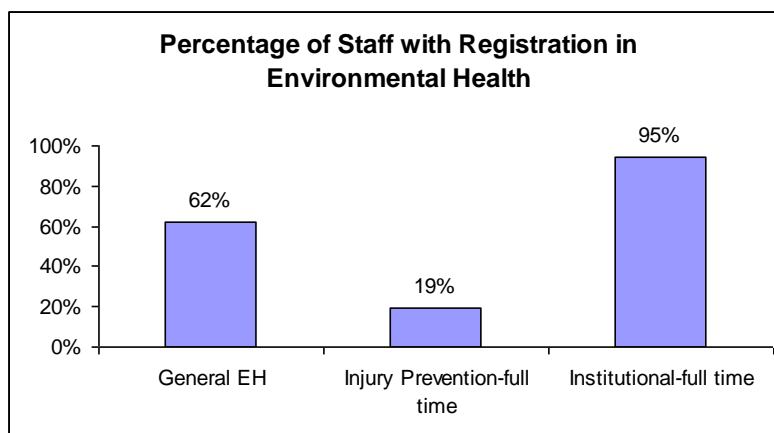


Figure 16: Percentage of DEHS staff with RS or REHS credentials

Twenty six percent (26 %) of all DEHS staff have completed the IHS Injury Prevention Fellowship, 29% are Child Passenger Safety Technicians, and 7% are standardized by the Food and Drug Administration to conduct retail food service inspections. These and other credentials are summarized in Table 6 below.

Table 6: Summary of DEHS Staff Certifications

Federal and Tribal Staff	General EH	Injury Prevention Full time	Institutional Full time	Total
Registered Environmental Health Specialist / Registered Sanitarian / Other State registrations	130	9	18	157
IP Fellow	52	14	6	72
Certified Safety Professional	1	0	2	3
Certified Industrial Hygienist	0	0	4	4
Certified in Infection Control	1	0	0	1
Child Passenger Safety Technician	35	10	0	45
Certified Playground Inspector	16	0	0	16
Certified Radiation Protection Surveyor	2	0	8	10
Certified Environmental Health Technician	5	0	0	5
Diplomat, American Academy of Sanitarians	4	1	3	8
Certificate of Health Care Environmental Management	2	0	2	4
Food and Drug Administration Standard	18	0	2	20
Lead / Asbestos Certification	5	0	5	10
IEH Residency	0	0	13	13

9) ***Evaluate Effectiveness of Services***

Constant and consistent evaluation ensures that DEHS Program actions and services are successfully addressing tribal community health needs. In 2008, DEHS met or exceeded the Department of Health and Human Services' performance measures as stated below.

- **Environmental Surveillance Performance Measure:**
By the end of FY 2008, 11 Areas will identify baseline environmental risk factors to establish interventions for high-priority environmental health threats.
- **Injury Intervention Performance Measures:**
By the end of FY 2008, 11 Areas will administer a recognized occupant protection survey in at least one community, in order to establish baselines for seatbelt use.

Technical Assistance for the Injury Prevention Cooperative Agreement grantees was provided via a contract with the University of North Carolina, Chapel Hill.

Area consultations were suspended during CY 2008. During this time, the DEHS Director revised and began implementation of a new assessment tool based on National Public Health Performance Standards, the University of North Carolina's Injury Prevention Program Assessment tool, and the Ten Essential Environmental Health Services.

Locally the Areas evaluate effectiveness, accessibility, and quality of services. Some examples follow.

- Aberdeen Area: Infection control surveys demonstrated improved reporting of environmentally related communicable diseases in the Aberdeen Area. Prior to 2007, infection control surveys revealed that 44.4 per 100 facilities surveyed failed to have an effective reporting mechanism for reporting environmentally related communicable diseases to service unit environmental health officers or tribal sanitarians. The rate improved to 100 per 100 facilities surveyed in 2008.
- Bemidji: In 2008, Bemidji Area Environmental Health staff evaluated the effectiveness of the sleep safe program. Of the 27 tribes with Head Start programs, 20 have implemented the Sleep Safe Program at least once since its inception. Many of the BAIHS tribes have participated continuously for years. Nearly 10,000 smoke alarms have been installed by BAIHS Sleep Safe coordinators since program inception in 1999. The percent of homes with at least one working smoke alarm has risen from 69% (initial home visit data, 1999-2000) to 97% (follow up home visit data, 2008).

The residential age-specific fire death rates for BA AI/AN children <5 years old declined from 10.4 per 100,000 to 1.8 per 100,000 (1992-1998 and 1999-2005 WISQARS data, respectively). This is nearly a six-fold decline in residential fire deaths. During this same time, the combined all-races MN, WI, and MI all-races residential fire death rates have declined from 3.6 per 100,000 to 1.7 per 100,000.

The Sleep Safe Program was implemented in 1999. Although that program surely cannot claim that it made the sole difference in reducing residential fire death rates in young BAIHS AI/AN children, it has had a significant role, which is demonstrated by the number of smoke alarms installed, the increase in working smoke alarms, and five success stories that have been documented (and others that have been verbally recounted).

- Nashville Area: Nashville Area EHS monitored customer satisfaction with services and reports through customer surveys. The response rate was 71%. Overall services were rated “excellent” by 81% of the respondents and “good” by 18%.
- Phoenix Area: The San Carlos Apache Motor Vehicle Injury Prevention Program resulted in an increase in DUI arrests by 52% and a decrease in motor vehicle crashes by 61% (additional details on this project are provided in the next section). An external third party evaluator was hired under a contract to ensure the evaluation plan was appropriately designed and implemented.

10) *Implement Innovative Solutions to Health Problems*

Community health issues often require innovative thinking and actions to provide effective solutions. These solutions typically consist of a combination of new technologies, new ways to collect and use health-related data, new ways of communicating, and influencing behavior change.

The following five DEHS Program projects have been highlighted based on a variety of factors, including their positive outcomes, community involvement, sound research to support problem diagnosis, and fulfillment of a large number of the Ten Essential Services.

Remote Observation System for Drinking Water Supply Alaska Native Tribal Health Consortium

Project Summary

Traditionally, environmental health professionals have relied on sanitary surveys, operator reports, and laboratory tests to identify problems within a water system. Because these activities are primarily reactive, public health can be jeopardized before a problem is recognized. In addition, Alaska's vast landscape and lack of a statewide road system limits opportunities to provide on-site support in remote villages.

Funding for the Remote Observation System (ROS) project was provided by the IHS dental program in August 2006. The original project scope specified that ANTHC-DEHE would evaluate existing remote monitoring technologies for ensuring potable water supplies in remote Alaska villages. It was quickly determined that existing remote monitoring equipment was too costly and operationally complex for use in this unique environment.

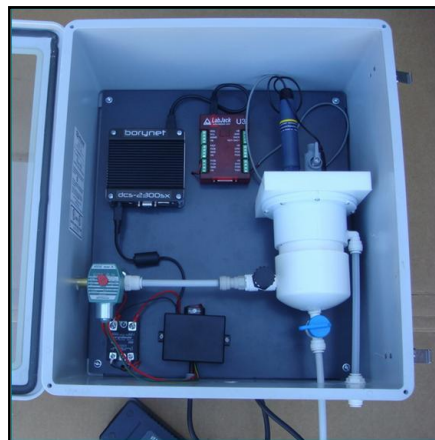


Figure 17: In-place ROS unit

After this finding, project managers re-allocated the remaining funds toward developing a more appropriate technology. Using the technical expertise and experience within the organization, ANTHC-DEHE developed the ROS. The ROS provides real-time data on critical water system parameters, such as chlorine, fluoride, turbidity, water pressure, and filtration. This active monitoring system can also provide email or text message alerts if a parameter falls out of the specified range.

The first ROS unit has been operating successfully and continuously since November 2006. Several additional ROS units have been installed in remote communities for further evaluation. Once the testing is complete, ANTHC intends to make the technology available to the IHS and tribal organizations.

Steps have also been taken to patent this technology and make it available for commercial sale. An agreement with Chicago-based Borynet, LLC will provide ANTHC 50% of profits from sales. This revenue will be used to enhance and expand environmental health services in Alaska Native villages.

Salmonella Outbreak Investigation Navajo Area

Project Summary:

A nationwide *Salmonella Saintpaul* food borne outbreak occurred during the summer of 2008. The outbreak was first reported to CDC by the State of New Mexico on May 22, 2008. Eventually the outbreak affected 43 states, the District of Columbia and Canada. As of September 19—just five months later—1,463 laboratory confirmed cases had been reported. At least 288 individuals were hospitalized. The outbreak may have contributed to two deaths.



Figure 18: The *Salmonella* bacteria

Of the reported cases, approximately 8% (117) were American Indian. The majority of those cases occurred on or near the Navajo Nation. McKinley County (Gallup), New Mexico was identified as the county with the highest incidence of illness. Many more cases no doubt were never reported. Initially the outbreak was linked to fresh raw tomatoes. As the epidemic progressed jalapeno peppers and Serrano peppers grown in Mexico were identified as the primary vehicles for infection.

The NAIHS was involved in the investigation from the onset working with the New Mexico Department of Health, Arizona Department of Health Services, Navajo Division of Health, CDC, and FDA. NAIHS clinical and laboratory staff were instrumental in identifying cases, public health nurses spent a tremendous number of hours tracking down and interviewing cases, environmental health officers assisted with interviews and collected suspect food samples. The Navajo Division of Health enforced stay-home orders on two food service workers and aired public service announcements. The national IHS Office of Public Health Support Division of Epidemiology in Albuquerque coordinated IHS efforts with the states and CDC. The investigation was truly a multi-agency, multi-disciplinary effort. Unfortunately, no good explanation has been determined for the wide-spread scattered illness that occurred on the Navajo Nation. In other parts of the country most cases were related to clusters associated with Mexican-style restaurants.

Food Safety Program Evaluation Bemidji Area, Minnesota District

Project Summary

The Minnesota District Environmental Health Office of BAIHS tracks foodborne illness complaints and incidences associated with all tribal facilities within the service area. In addition, the District uses WebEHRS exclusively for the preparation of food sanitation surveys to allow for tracking trends and identifying issues. A 2006 evaluation of these data indicated the food safety issues in the District were improper temperatures, cross contamination, personal hygiene, and date marking and disposition.

Education is one of the primary tools used by the District to improve food safety. The District Office provides food safety training to more than 200 food service employees each year. Based on the most frequent citations in WebEHRS, the entire food safety training course was significantly revised to shift its emphasis to known risk factors for food safety. In addition, a new important course evaluation tool was developed that allows for evaluation of the course, trainer, and trainees.

Minnesota District staff use both the revised course materials and the course evaluation tool. Since its use, there has been an unexpected benefit of using the revised course and associated evaluation. The course evaluation has become a useful tool that aids staff with quickly get to the root of food safety issues in a facility and making more effective recommendations as a result.

An example of the course evaluations being an important tool to get at the root of a food safety problem concerns a facility with consistently high numbers of critical deficiencies. This facility sponsored three food safety training sessions as recommended by their sanitarian. The evaluation of these sessions indicated that the staff had very little pre-existing knowledge about food safety prior to the trainings. Furthermore, the evaluation indicated that a number of individuals had yet to master the concepts presented during the course. These results were shared with the management of the facility. As a result of seeing the course evaluation results, the facility's manager implemented an in house training program for staff using the materials developed by BAIHS. Subsequent surveys of this facility have shown a clear trend of decreasing food handling deficiencies.

Motor Vehicle Crash Prevention Program Phoenix Area

Project Summary:

The Motor Vehicle Injury Prevention Program was established in partnership with the local injury prevention coalition made of representatives from tribal health department, several local IHS programs, tribal housing authority, and the police department. The program created a local DUI task force which consists of representatives from the state's department of public safety, county sheriffs, and several other tribal law enforcement agencies. Finally, other partners supporting the interventions include the Arizona Inter-Tribal Council of Arizona, Bureau of Indian Affairs Indian Highway Safety Program, and the Governor's Office of Highway Safety.



Figure 19: Sobriety checkpoint, San Carlos Reservation

Under this Program, Standard Operating Procedures (SOPs) were developed for the Tribal Police Department to conduct sobriety checkpoints and saturation patrols. The Program also played a key role in the approval of a tribal resolution for the passage of a 0.08% blood alcohol concentration law and a resolution to implement a primary occupant restraint law (laws considered among the most effective public health policy strategies to reduce motor vehicle injuries).

The education and outreach strategies of this Program included an extensive motor vehicle injury prevention marketing campaign. A culturally appropriate occupant protection education campaign that included a "Seat Belts Just Wear 'em" slogan and logo were recognized throughout the community and served to elevate the awareness of the importance of occupant restraint use.

To raise awareness and build competencies among the tribal police force, police staff attended professional safety conferences locally, regionally, and nationally. One police officer became a certified phlebotomist; several police officers became horizontal gaze nystagmus certified.

Outcomes for the program include a significant increase in DUI arrests (52% between 2004 and 2008) and a concomitant decrease in motor vehicle crashes (61% over the same period). In addition, the public related the DUI prevention success with the local police department and members of the injury prevention coalition. Finally, surveys of community members conducted in 2005 and 2008 resulted in: 1) 73% of those surveyed reported seeing or hearing a message in the news about drunk driving in the past 12 months (up from 62% in 2005); and 2) 54% reported being stopped at a sobriety checkpoint in the past 12 months (versus 31% in 2005).

Control of Nitrous Oxide Exposures in the Dental Environment Oklahoma Area

Project Summary:

Oklahoma Area DEHS staff initiated a broad-based evaluation of nitrous oxide exposures in the dental environment, including tribal dental programs. This evaluation effort identified a serious problem with nitrous oxide exposures to women of child-bearing age.

In response to this issue, DEHS staff developed a comprehensive Nitrous Oxide Guidance Document to assist IHS dentists in determining the level of risk and the most appropriate corrective actions to reduce this risk. Recognizing the need to involve others in this process, a workgroup was developed consisting of practicing dental clinicians to ensure that recommended control practices would be compatible with dental practice.

These recommendations were published and distributed to dental officers throughout the Oklahoma Area. In addition, on-site training for nitrous oxide exposures was developed for dental staff. Resultant surveys and investigations have revealed that exposures to nitrous oxide is being controlled, positively affecting the health and safety of both dental staff members and patients.

During this evaluation effort, DEHS staff recognized that the survey tool was somewhat invasive during dental procedures (e.g., the probe could impede the dentist and assistance from doing their job). To address this issue, a device was developed that modified the Miran SapphIRE without compromising its ability to accurately obtain exposure data. The enhanced device now obtains exposure data from the breathing zone of the dentist or assistant without negatively impacting the ability to deliver health care.

This effort was spearheaded by CDR Danny Walters as part of completing the Institutional Health Residency requirements. CDR Walters' residency project is in final review and the Nitrous Oxide Guidance Document will be released for IHS-wide use.



Figure 20: CDR Danny Walters monitoring nitrous oxide

Looking Ahead into 2009

For CY 2009, the Program looks forward to accomplishing the following:

- Each Area will implement at least three interventions to improve the risk factors identified in 2008.
- Each Area will have implemented at least one comprehensive intervention to increase seatbelt use rates.
- More Areas will adopt and use the NDECI disease and injury reporting system for retrieving data from the RPMS system.
- New HQ staff Susan McCracken and David McMahon will be integrated into National Program efforts.
- The DEHS Program will continue to take responsibility for designing and implementing the IHS Environmental Stewardship Program.
- Additional injury prevention projects will receive funding.
- There will be expanded use of program assessments to improve program effectiveness.
- Robust effort will continue on the four vision element teams, with major deliverables competed by each team, including a revision of the Chapter 11 guidelines, a comprehensive feasibility study conducted on DEHS data system improvement options, a national methodology for assessing needs, the identification of Program strategic focus areas using this methodology, and standardized guidance on the RRM methodology for budget planning.



Figure 20: Collecting mosquito samples for West Nile virus

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**The Environmental Health Services Program
of the Indian Health Service
Department of Health and Human Services**

Annual Report for 2008