ANNUAL REPORT 2016

The Division of Environmental Health Services

INDIAN HEALTH SERVICE • U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

The DEHS Mission: "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."

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Annual Report **2016**

This Annual Report for Calendar Year 2016 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 contacting:

Indian Health Service

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Website: http://www.ihs.gov/dehs

On the cover: The 2016 photo contest winner...Terrold Menzie conducting a playground safety assessment, taken by Joe Sarisky, both Environmental Health Specialists (Pierre District, Great Plains Area; September 2016)

Message from the Acting Division Director

David McMahon, M.P.H, R.S.

Division of Environmental Health Services

I am proud to present the Division of Environmental Health Services (DEHS) Annual Report for 2016. This report covers activities and projects conducted by Indian Health Service (IHS) and Tribal/Corporation environmental health (EH) partners throughout the nation. The intent of the report is two-fold: to capture historical program information and to highlight activities and accomplishments that address the five DEHS national program focus areas and support the Indian Health Service mission. Throughout this report, we highlight Area activities that demonstrate our program's impact.

This year brought many unexpected challenges to the environmental health program. Mosquito surveillance and control efforts ramped up across the country after mosquito-borne Zika virus infection occurred in Florida. Although this did not impact all IHS Areas, Zika virus awareness training and mosquito surveillance became a priority for many environmental health programs. A healthcare quality crisis in the IHS had multiple effects on environmental health programs as many DEHS Directors and Institutional Environmental Health staff mobilized to assist in extended work details providing technical, management, and mock-accreditation survey support.

In 2016, we celebrated the retirements of Dr. Larry Berger, CDR Molly Curry, CAPT Richard Turner, and CDR Celeste Davis. CDR Darren Buchanan, who served as the DEHS Data Systems Manager for many years, left the Division to pursue interests in the IHS Office of Information Technology. We will miss their valuable and extensive contributions to the environmental health program, but we wish them well in their future endeavors.

Nationally, we accomplished many of the objectives planned for this year.

- We have a new contract for the DEHS Web-based Environmental Health Reporting System (WebEHRS) which supports environmental health programs across the country
- We have a new Tribal Injury Prevention Cooperative Agreement Program monitoring contractor who is providing technical assistance to tribal and IHS injury program projects and programs
- We initiated the 2016 through 2020 Environmental Surveillance and Injury Intervention performance measures
- DEHS selected a student for the 2017-2019 school years to serve in the Institutional Environmental Health Residency Program

This report highlights the work of individuals recognized through two DEHS Annual Awards: the IHS Environmental Health Specialist of the Year and the Gary J. Gefroh Safety and Health Award. The award narratives provide excellent examples of service and impact in tribal communities and institutional settings.

The National Focus Areas section of the report provides even more examples of the tremendous work and the breadth of the environmental health program. Here you will find creative solutions, actions, and impact such as:

- Improving seatbelt usage through a peer-to-peer approach to change personal behaviors
- Implementing a positive norms campaign to increase seatbelt usage, reduce impaired driving, and reduce risk-behaviors related to alcohol and other drug use among youth
- Advocating for a tribal resolution to adopt standards and licensing requirements to improve health and safety conditions at child care programs
- Supporting the implementation of a school safety and crisis preparation curriculum to address suicide prevention needs
- Evaluating integrated pest management concepts during routine environmental health surveys at tribal Head Start programs to reduce children's exposure to harmful pesticides
- Developing homeowner "toolkits" to combat and prevent bed bug infestations
- Assisting in the development of an animal control ordinance to reduce injury and disease risk
- Supporting a collaboration with American Red Cross to implement a fire safety project to install smoke detectors in tribal homes where children reside

I hope you enjoy reading about the IHS DEHS projects and activities across the country. I welcome your input into how we can better serve the American Indian and Alaska Native people.

Contents

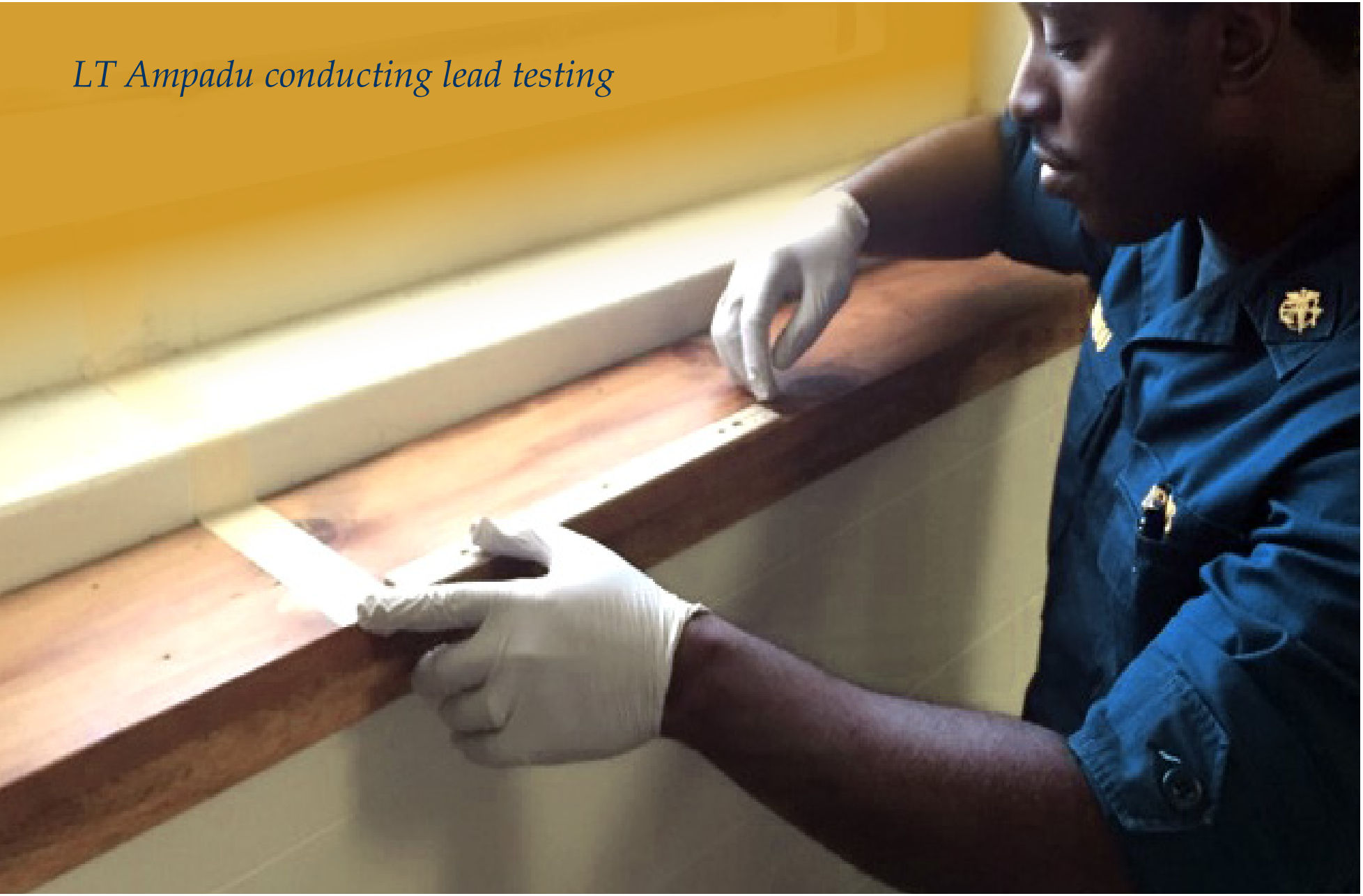
List of Acronyms

AI/AN:	American Indian/Alaska Native
ANTHC:	Alaska Native Tribal Health Consortium
BIA:	Bureau of Indian Affairs
CDC:	Centers for Disease Control and Prevention
DEHS:	Division of Environmental Health Services
DSFC:	Division of Sanitation Facilities Construction
EH:	Environmental Health
EHS:	Environmental Health Specialist
EHSA:	Environmental Health Services Account
EHSC:	Environmental Health Support Center
EHT:	Environmental Health Technician
FDA:	Food and Drug Administration
HQ:	Headquarters
IEH:	Institutional Environmental Health
IHS:	Indian Health Service
IP:	Injury Prevention
LNF:	Level of Need Funded
MPH:	Master of Public Health
NDECI:	Notifiable Disease and External Cause of Injury
NHTSA:	National Highway Traffic Safety Administration
NSF:	National Sanitation Foundation
OCPS:	Office of Clinical and Preventive Services
OEHE:	Office of Environmental Health and Engineering
OSHA:	Occupational Safety and Health Administration
OWCP:	Office of Worker's Compensation Programs
PHS:	Public Health Service
REHS/RS:	Registered Environmental Health Specialist/Registered Sanitarian
RRM:	Resource Requirement Methodology
TIPCAP:	Tribal Injury Prevention Cooperative Agreement Program
USUHS:	Uniformed Services University of the Health Sciences
WebCident:	Web-based Incident Reporting System
WebEHRS:	Web-based Environmental Health Reporting System
YKHC:	Yukon-Kuskokwim Health Corporation

Profile *of the* DEHS Program

Caleb Biles, COSTEP, surveying a sewer lagoon

LT Ampadu conducting lead testing



Program Vision

The vision of the DEHS is “Every American Indian and Alaska Native will live in a safe, healthy environment. Community-based environmental health programs, developed in partnership with tribes, will utilize sound public health practices and resources to achieve the lowest disease and injury rates in the nation.” Using this vision statement, DEHS Program leadership (HQ and Area Directors) identified seven Vision Elements that would have the most positive impact on the DEHS Program.

DEHS VISION ELEMENTS

- A nationwide clear and uniform definition of needs to make a compelling case for budget and prioritization of our work.
- A dynamic, effective, and sustainable DEHS data system.
- Standardized guidelines across the program that support uniform program management and result in positive outcomes.
- Active involvement in budget and RRM discussions.
- Increase the visibility, understanding, and value of the EHS program among internal and external stakeholders.
- Create a career competency roadmap promoting highly qualified, innovative and effective staff able to meet the DEHS mission.
- Develop an operational model that identifies and provides operating guidelines and best practices.

In addition to Area efforts to develop policies and plans, program strategic planning continued to be a major national emphasis during 2016. Over 45 DEHS staff have been involved on teams formed to create significant, tangible progress on the seven Vision Elements since the February 2007 DEHS Directors’ meeting held in Nashville, Tennessee.

Vision Element Teams are supported by a Core Group of HQ and Area-level staff. The Core Group is responsible for clearly defining the charge to the Team, reviewing work products, and for providing input to each of the teams.

Summary of the Accomplishments of Vision Element Teams:

Team 1 – An Improved Definition of Needs: In 2009, this team developed five DEHS briefing documents for the five national priorities they established in 2008. These documents outline the public health significance of each of the priorities. These national priorities are children's environment, safe drinking water, food safety, vectorborne and communicable diseases, and healthy homes. Currently, IHS is using the priorities and templates to guide the DEHS Program.

Team 2 – A Dynamic, Effective, and Sustainable Data System: Team 2 developed a feasibility study with five alternatives for replacing the existing DEHS data system, WebEHRS (the Web-based Environmental Health Reporting System). During the 2009 meeting in Tulsa, Area representatives approved alternative 5, a Commercial-Off-The-Shelf system that will be modified to meet IHS needs. Funds for the first year were secured at HQ, and staff procured the services for this system. The contract for the development of the system was signed in 2010, and the new system is currently in use. A dynamic stage of implementation, including collecting and incorporating user feedback, continued into 2016.

Team 3 – Standardized Guidelines: This team revised Part 3, Chapter 11 – Environmental Health of the Indian Health Manual. This chapter establishes the policy, objectives, responsibilities, and functions of a comprehensive community-based Environmental Health and Engineering Program. Thanks to the efforts of this team, the updated chapter was signed into policy by the Acting IHS Director and published on July 15, 2013.

Team 4 – Resource Requirement Methodology (RRM): In 2008, Team 4 began drafting a written document and a slide presentation that explain how the DEHS RRM is calculated. RRM is used, in part, to determine funds distribution nationally and in the Areas. The final document was completed in 2010 and is in use.

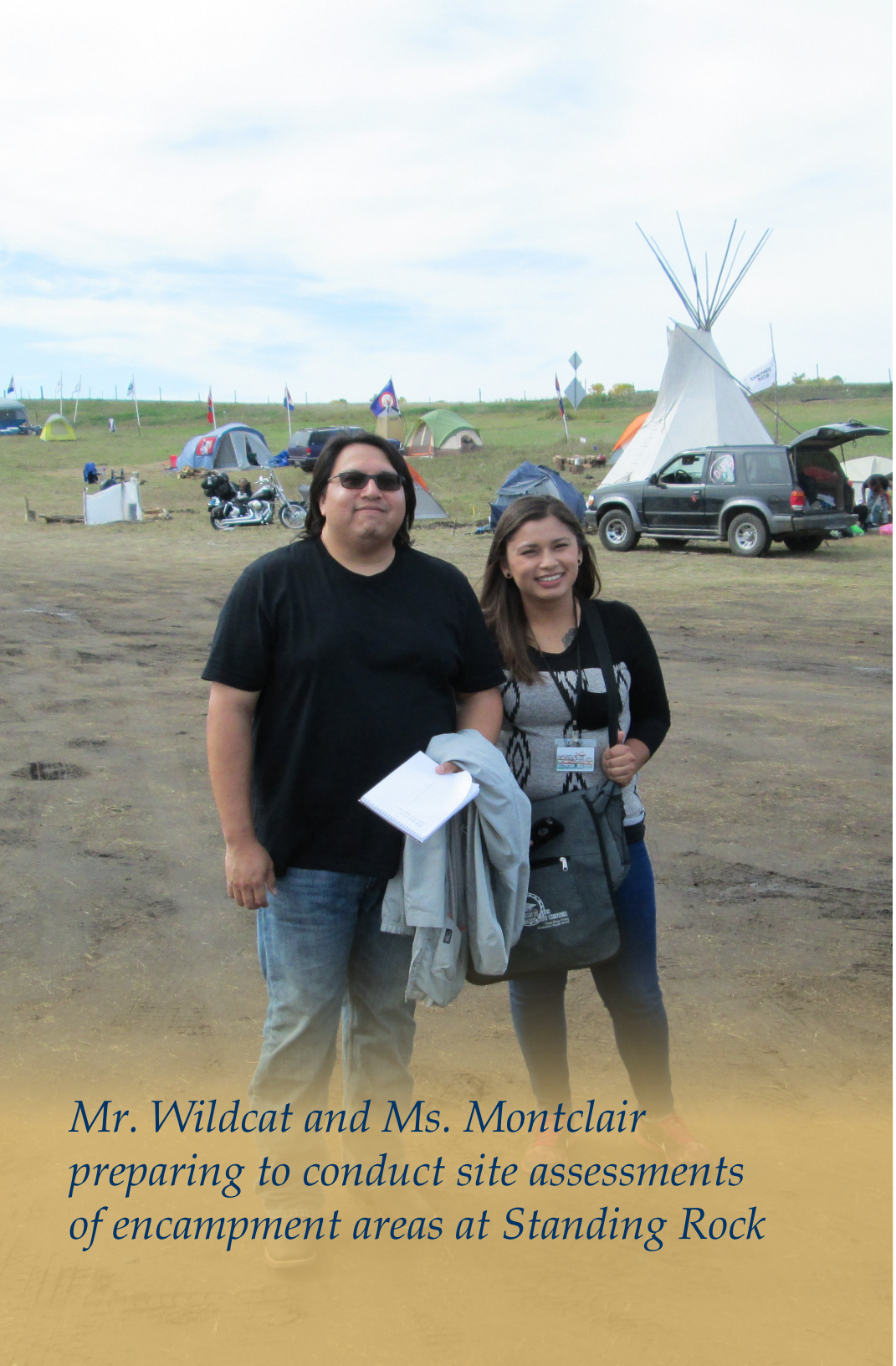
Team 5 – Effective Marketing to internal and External Stakeholders: In 2009, a Vision Element was added to the four Primary Vision Elements. It was found that there was a need to develop communication tools in order to demonstrate to our customers (the communities served, HHS and IHS personnel, and external partners) the breadth of our Program and positive impacts made on the health and well-being of tribal members. The team was charged with the development of a DEHS informational toolbox that provides DEHS personnel with presentation materials for effective communication of Program components, capacity, strengths, and achievements to a variety of audiences. The team produced an informational slide presentation, brochure, publishing tips, "elevator" speech, and business card template.

Team 6 – Workforce Development: In 2012 the directors gathered to revisit the strategic plan and refresh the list of vision elements. From the prioritized list one element was selected to be completed in 2013, workforce development. A workgroup formed to complete the following tasks:

- Create a competency model for staff;
- Create a list of opportunities to develop the workforce; and
- Develop an implementation plan.

The team's products will be practical, utilize current technology and resources, and include consideration of federal/tribal, specialties, and organizational levels. These products will result in a career competency roadmap promoting highly qualified, innovative and effective staff able to meet the DEHS mission. The efforts of this workgroup were slated to be completed in 2013, however refinements continue into 2016, and include recommendations for a competency model, a list of opportunities to develop the DEHS workforce, and suggested implementation steps.

Team 7 – Operational Model: In 2014 the directors selected this vision element to identify core services all Areas should provide the tribes. In 2016 the team continued writing a chapter to be included in the OEHE Technical Handbook defining the operating guidelines for the DEHS and align with Part 3 Chapter 11 of the Indian Health Manual.



Mr. Wildcat and Ms. Montclair preparing to conduct site assessments of encampment areas at Standing Rock

Program Mission

The 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 provides a range of services to the American Indian and Alaska Native (AI/AN) communities.

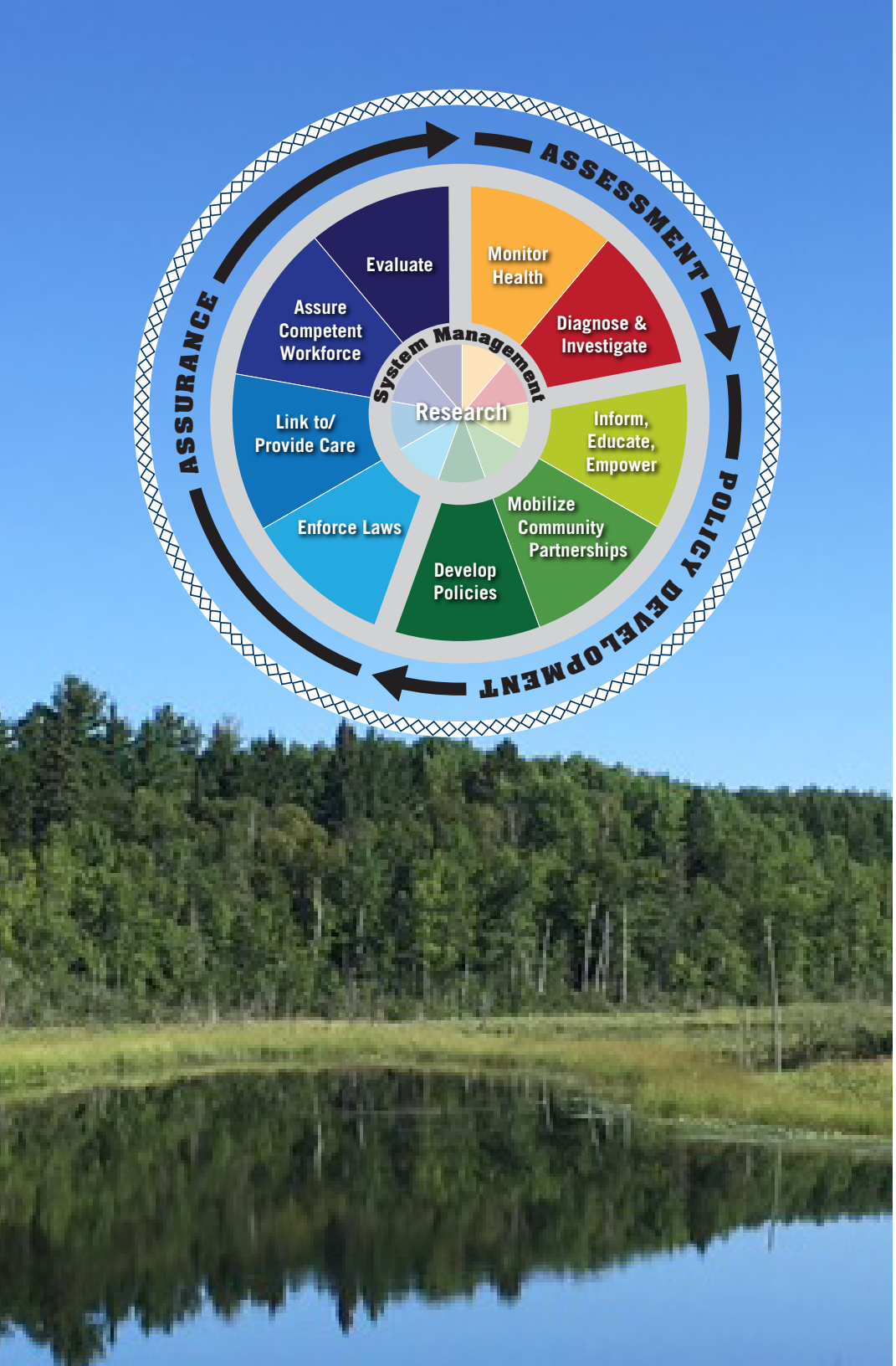
Program History

The roots of the DEHS can be traced to 1921, when Commissioner Charles Burke, Office of Indian Affairs, U.S. Department of the Interiors, issued a circular directing agency physicians to serve as Health Officers for their reservation. Over the next several decades, responsibility for community surveys shifted to 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 of 1954 (Public Law 83-568), which moved the responsibilities for AI/AN healthcare from the Bureau of Indian Affairs (BIA) to the Indian Health Service (IHS), most of the components of the current Environmental Health Services 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 (HQ) Institutional Environmental Health (IEH) Officer was hired and provided advice and technical guidance on all community-based institutions.

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



Our Operating Philosophy

The operating philosophy of the DEHS is based on the Ten Essential Public Health Services first articulated in 1994 by a partnership of local, state, and national public health leaders. IHS adopted them as the Ten Essential Environmental Health Services and incorporated this set of strategies into the methods in which it delivers services to AI/AN communities across the country.

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 environmental health issues.
4. Mobilize community partnerships to identify and solve environmental health problems.
5. Develop policies and plans that support individual and community environmental health efforts.

ASSURANCE

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

SYSTEM MANAGEMENT

10. Conduct research for new insights and innovative solutions to environmental health problems.

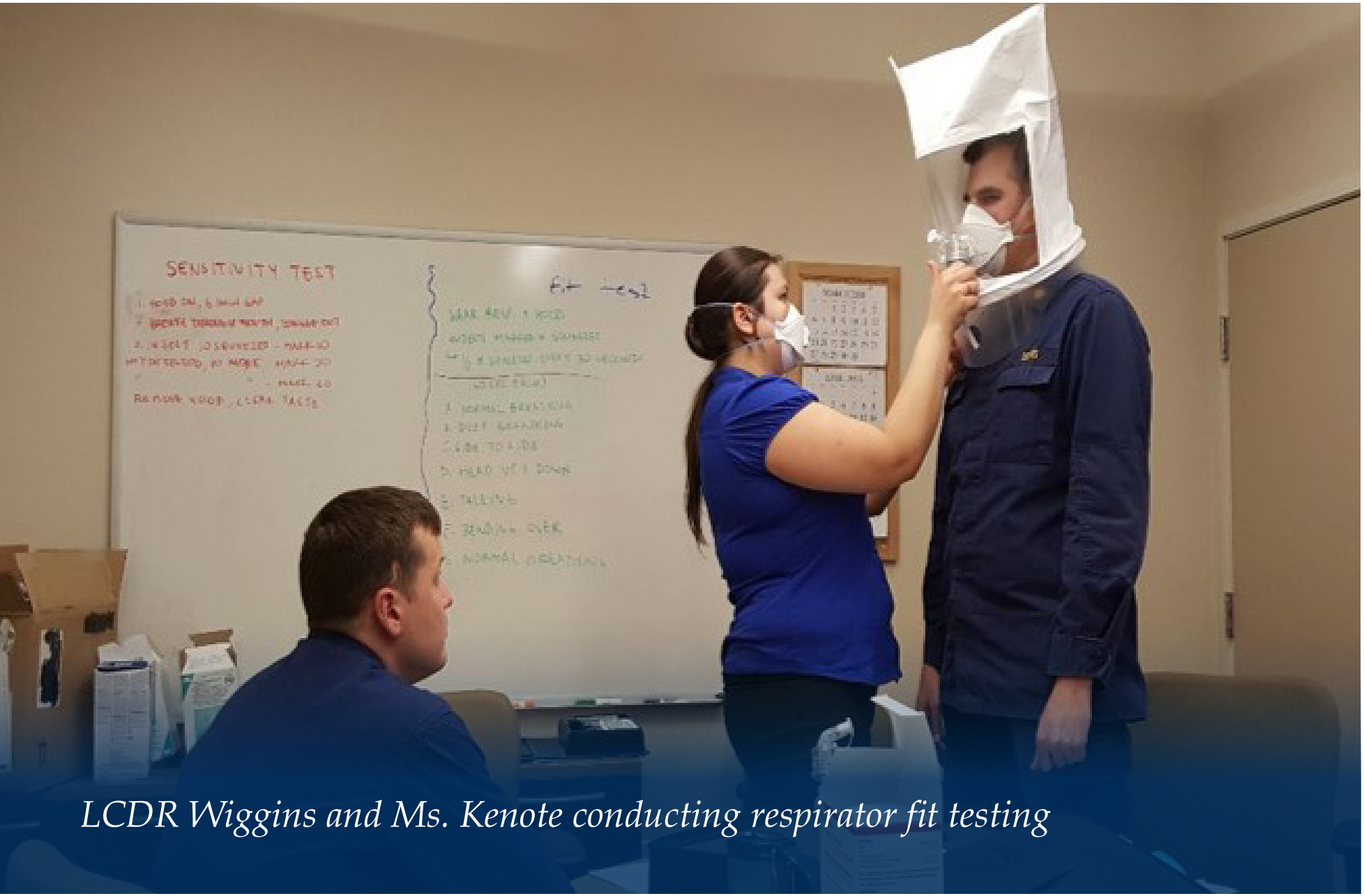
Using the Ten Essential Environmental Health Services as a framework, the IHS DEHS developed five national focus areas: children's environment, safe drinking water, food safety, vectorborne and communicable diseases, and healthy homes. Details on projects conducted throughout the tribal communities served by the DEHS Program in 2016 can be found in the National Focus Areas section of this report.

The DEHS is a comprehensive, field-based program

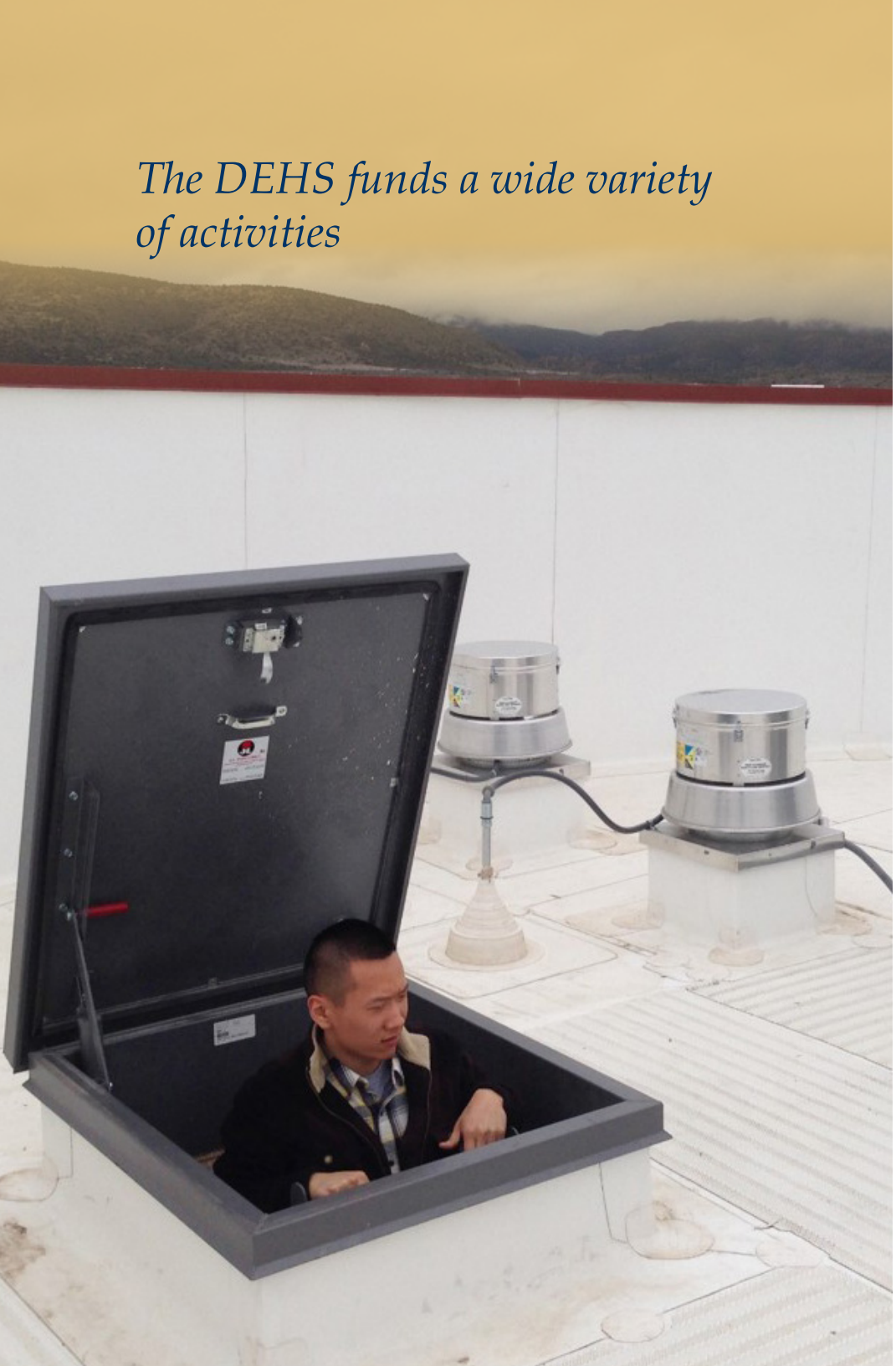
Program Structure

True to its historical beginnings, the DEHS is a field-based environmental health services program that takes pride in supporting the needs of individual tribal communities. The DEHS operates under a decentralized organizational structure, with most of its staff employed in district and field offices throughout the 12 IHS Areas. In 2016, the national DEHS program consisted of a total of 273 staff excluding the headquarters staff listed below. The DEHS at Area Offices were typically staffed with a Division Director and one or two professional (IP Program Manager and/IEH Program Manager) staff. District Environmental Health Specialists (EHS) and their support staff are often located away from the Area Offices and closer to the tribal communities. DEHS HQ, located in in Rockville, Maryland, is staffed similarly to the Areas.

- CAPT Kelly Taylor – Director
- CAPT David McMahon – Deputy Director
- CDR Charles Woodlee – Institutional Environmental Health (IEH) Program Manager
- CAPT Nancy Bill – Injury Prevention (IP) Program Manager
- CDR Stephen R. Piontkowski – Senior EH Officer
- LT John Hansen – IEH resident



LCDR Wiggins and Ms. Kenote conducting respirator fit testing



The DEHS funds a wide variety of activities

Program Resources

The current budget of the DEHS Program is approximately $32 million. This funding is derived from three primary sources: congressional allocation; the IHS Director's Initiatives; and IP budget enhancements (Table 1). DEHS funds support a wide variety of activities, including IP, IEH, safety management, industrial hygiene, food safety, vectorborne disease control, and technical assistance to community water and waste disposal facility operators.

The DEHS 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 2016, the DEHS share of the EHSA budget was approximately 42%, or $32,278,902. Figure 1 depicts a historical comparison of the workload-based Resource Requirement Methodology (RRM) versus the distribution of Program funds from 2002 to 2016. Table 2 displays the current level of need funded (LNF) for each of the 12 Areas; the data represent both IHS staff and tribal staff.

Table 1: DEHS Program Funding Sources.

Fiscal Year	Total EHSA Budget	DEHS RRM Share	*DEHS Budget	OEHE Funds Provided to DEHS	IHS Director's Initiative	Injury Prevention Budget Enhancements	Total DEHS Budget		
				COSTEP**	Injury Prevention**	Residency**			
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
2009	$67,022,000	38.97%	$26,117,871	$228,500	$66,782	$100,000	***	$2,779,000	$29,292,153
2010	$69,196,000	35.74%	$24,730,653	$176,000	$0	$100,000	***	$2,779,000	$27,785,653
2011	$69,057,608	32.00%	$22,098,435	$144,000	$84,000	$0	***	$2,771,942	$25,098,377
2012	$69,703,294	34.00%	$23,699,120	$160,000	$49,000	$100,000	***	$2,763,473	$26,771,593
2013	$66,521,479	38.00%	$25,278,162	$128,000	$0	$100,000	***	$2,280,000	$27,786,162
2014	$70,901,479	41.00%	$29,069,606	$136,000	$63,000	$100,000	***	$2,766,698	$32,072,304
2015	$72,550,497	41.00%	$29,745,696	$176,000	$0	$125,000	***	$2,766,698	$32,512,394
2016	$69,531,437	42.00%	$29,203,204	$184,000	$0	$125,000	***	$2,766,698	$32,278,902

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

**Office of Environmental Health and Engineering 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: RRM (workload) vs. actual DEHS funding from 2002 to 2016.

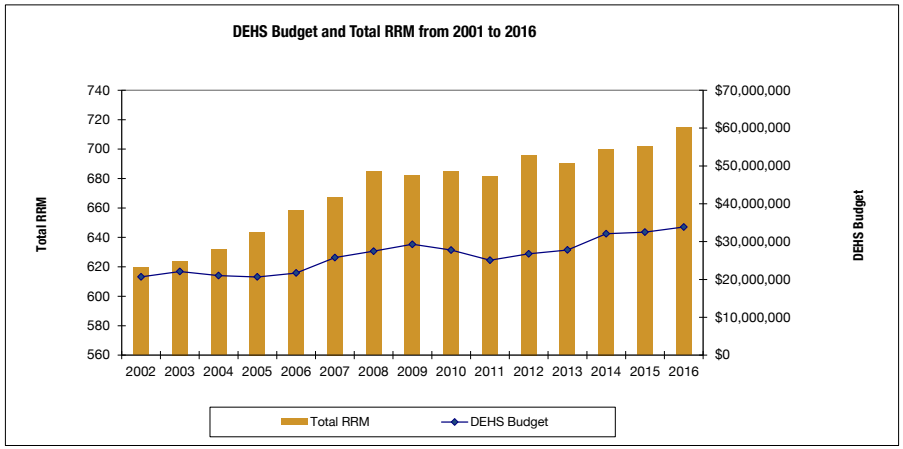


Table 2: Level of Need Funded (LNF) 2016.

Level of Need Funded (LNF) 2016					
Area	Total Staff*	RRM	%LNF	Federal Staff	Tribal Staff
Alaska	37	91.67	40.4%	0	37
Albuquerque	18	37.47	48.0%	16	2
Bemidji	23	53.62	42.9%	10	13
Billings	17	30.38	56.0%	6	11
California	8	51.85	15.4%	5	3
Great Plains	26	56.49	46.0%	16	10
Nashville	16	46.5	34.4%	3	13
Navajo	41	114.1	35.9%	32	9
Oklahoma	34	99.98	34.0%	10	24
Phoenix	38	69.44	54.7%	22	16
Portland	11	50.94	21.6%	6	5
Tucson	4	12.08	33.1%	2	2
Total**	273	714.5	38.2%	128	145
*Includes tribal staff hired with IHS Cooperative Agreement Funds					
HQ staff are not reflected here					
**Total is not exact due to rounding					
Data from 2015 determines the 2016 LNF					

As Table 2 shows, the DEHS Program strives to accomplish its tasks at a funding level of 38.2% of the estimated actual need. In order to maximize the utilization of available resources, the DEHS has established partnerships with federal agencies. Partnerships change as needs are addressed or emerge. A few of the partners over the years include:

- Centers for Disease Control and Prevention (CDC)
- National Highway Traffic Safety Administration
- Uniformed Services University of the Health Sciences
- National Institutes of Health (NIH)
- U.S. Fire Administration
- Consumer Product Safety Commission

Particiapnts of the Introduction to Injury Prevention Course, Sacramento, CA

Education

Education is a cornerstone of any successful public health program because it is the first step in raising awareness and empowering individuals and communities to participate in resolving community health issues. DEHS staff conducted training sessions during 2016 on a variety of topics. The Environmental Health Support Center (EHSC) in Albuquerque, New Mexico provided program management, IP, topic-specific EH, and IEH courses. Webinars were also utilized to maintain staff competencies without requiring travel. In 2016 there were 29 classes and 1 webinar with a total of 625 attendees (Table 3).

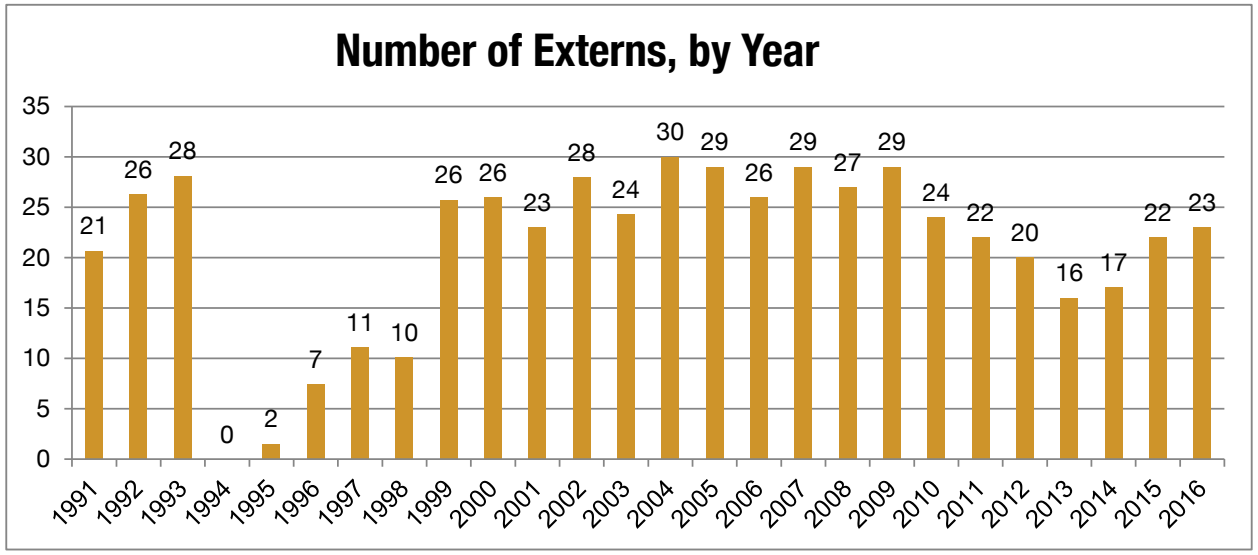
Table 3: EHSC Sponsored Courses – 2016.

EHSC Sponsored Courses - FY 2016		
Course	**Location**	**Number of Attendees**
Emergency Management and Security in IHS Facilities	Albuquerque, MN	35
Introduction to Injury Prevention	Tucson, AZ	21
Introduction to Injury Prevention	Stillwater, OK	9
Intermediate Injury Prevention	Tucson, AZ	20
Introduction to Injury Prevention	Reno, NV	20
Playground Safety Workshop - Playsafe	Tucson, AZ	11
NFPA 101 - Life Safety Code*	Sioux City IA	26
NFPA 99 - Standards For Healthcare*	Sioux City IA	23
NFPA 101 - Life Safety Code*	Billings, MT	18
NFPA 99 - Standards For Healthcare*	Billings, MT	14
Introduction to Injury Prevention	Browning, MT	19
Playground Safety Workshop - Playsafe	Phoenix, AZ	27
NFPA 101 - Life Safety Code*	Albuquerque, MN	31
NFPA 99 - Standards For Healthcare*	Albuquerque, MN	29
Playground Safety Workshop - Playsafe	Albuquerque, MN	23
OSHA 10 hour for General Industry	Phoenix, AZ	15
SNAP - Saving Native American Passengers	Elko, NV	8
Playground Safety Workshop - Playsafe	Billings, MT	9
Supervisors Role in Healthcare Accreditation	Kayenta, AZ	30
Supervisors Role in Healthcare Accreditation	Kayenta, AZ	26
Playground Safety Workshop - Playsafe	Portland, OR	12
Introduction to Injury Prevention	Sacramento, CA	18
10 Hour OSHA Course for General Industry	Ft. Duchesne, UT	38
NFPA 101 - Life Safety Code*	Phoenix, AZ	37
NFPA 99 - Standards For Healthcare*	Phoenix, AZ	38
Introduction to Injury Prevention	Albuquerque, MN	12

EHSC Sponsored Courses - FY 2016		
Course	**Location**	**Number of Attendees**
SNAP - Saving Native American Passengers	Olympia, WA	3
SNAP - Saving Native American Passengers	Wadsworth, NV	12
Intermediate Injury Prevention	Albuquerque, MN	14
TOTAL		**598**
Webinars	Month	Number of Attendees
Leadership Webinar: Leaders Eat Last	January	27
TOTAL ATTENDEES		**27**

Successful delivery of environmental health services to tribal communities rests on the foundation of a competent and motivated workforce. Figure 2 shows the numbers of student externs hired in the past 26 years. In 1994, a mandated reduction in full-time staff resulted in a moratorium being placed on the recruitment of student externs. Since then the number of externs hired annually fluctuated from 17-30. During 2016, the DEHS supported 23 student externs.

Figure 2: **Number of college students participating in the DEHS extern program, by year.**



The DEHS views the opportunity to offer financial support for long-term training as a major retention tool and has supported staff in master's programs for many years. Areas reported thirteen DEHS staff funded by IHS for college courses in 2016. Of the thirteen, nine were federal employees and four were tribal employees. Staff in seven of the twelve Areas received long-term training support.

Another program that builds a competent workforce within IHS and tribes is the IP Fellowship Program. The Fellowship is a 12-month advanced learning experience for individuals who want to address the single biggest killer of young AI/AN – injuries.

Building on the IHS IP Program core courses and the prior experiences of the participants, the Fellowship offers advanced training in community injury intervention strategies, coalition building, injury epidemiology, program evaluation, presentation skills, and field work. Fellows apply the skills they've acquired by working on individual projects involving data collection and/or program implementation and evaluation.

There are two Fellowship tracks; Program Development and Epidemiology. Although the two tracks have a similar structure, their emphasis, content, and prerequisites differ.

Benefits from completing the Fellowship include:

- Project development, implementation, evaluation
- Promote community involvement
- Effective strategies
- Epidemiology
- Data collection and analysis
- Coalition building
- Program evaluation
- Oral/written communication
- Individualized learning experiences
- Field work

There have been 285 graduates from the Fellowship since 1987, however there were no fellows in 2016. A list of the graduates by year can be found in Table 4.

Table 4: List of Injury Prevention Fellowship Program Graduates by Year.

2015	Marc Matteson Kendra Vieira Isaac Ampadu Alyssa Bernido Katie Tompkins Jerrod Moore Martha Maynes	**2014***	Julie Adams John Hansen Adrianna M. Gibson Sharon K. Silvas Gina Yellow Eagle Rea Joyce Miles Lyndee Sue Hornell Gregory A. Sehongva Patrick H. Martinez	**2012***	Chris Chestnut Jennifer J. Jordan Jacqueline Kizer Nicole D. Thunder Desta Walker Donald B. Williams Tina A. Yazzie-Smiley	**2011**	Martin Stephens Tim Balderrama Bryan Reed Hillary Strayer Lisa Nakagawa Jacey McCurtain Dustin Joplin Jason Hymer David Bales Molly Madson Travis Bowser
2009*	Sarah-Jean T. Snyder Rebecca Morris Laquita F. Fish Karen M. Ansera Pamela A. Michaelson-Gambrell Verlee White Calfe-Sayler Bernice Bert Amanda Parris Le Ray Skinner Jennifer L. Franks Annie Phare	**2008***	Fleurette Brown-Edison Mary Robertson-Begay Antoinette R. Short Amy R. Cozad Jason D. Hymer Darcy Merchant, Sr. Lyndon Endischee Robin Lee Janelle Trottier	**2007**	Sherron Prosser Janae Price Siona Willie Stephanie Peebles Coffey Theresa Yazzie Dr. Verlee K. White Calfe-Sayler Susan E.C. Ducore Belinda Aungie Michael E. Reed Jr. Bonny M. Weed Elisa DuBreuil	**2006***	Lisa Aguerro Sherron Prosser Charlotte Ann Branham Samantha Holmberg Bonita Paddyaker Belinda Aungie Kathey Wilson Helen Garcia-Sisneros Angelita Chee Arturo Calvo
2005	Michelle Begay Mark Brewer Kyla Hagan George Hupp Holly Kostrzewski Elvira Martin Ina Mickelson Stephen Piontkowski John Schmitz	**2004**	Larry Carlson Timothy P. Duffy Jim Ferguson Hayden R. Hardie Rebekah Hunkup Robert Morones Mark E. Pike Randolph G. Runs After Charles Woodlee	**2003***	Frances C. Anchondo Andee Beaver Keechi Maria A. Benton Mary Alice Clark Sybil K. Cochran Montell Elliott Eldon R. Espling Helen Gregorio Jodi R. Johnson Danny Joseph Norma McAdams Michael S. Struwin Minnie Yazzie	**2002**	Christopher W. Allen Jeff Dickson Myla Jensen Dan Kinsey Joseph LaFramboise Shirley Peaches Shelli Stephens-Stidham Sara A. Wagner Mona Zuffante
2000	Bruce Etchison Michael Boley Nicole Horseherder Martin Smith Mark Byrd Bobby Villines Sue Hargis Nate Quiring Andrea Horn Sharon John Richard Skaggs Molly Patton	**1999**	Bruce Chandler Arla Stroop Myrna Buckles Brian Johnson Ryan Hill Twyla “Zoe” Benally Dennis Renville Zahid Samad Tina Samm	**1998**	Karen Arviso Gary Carter Casey Crump David Hogner Brad Husberg Karin Knopp James Ludington JoAnn Perank Tish Ramirez Tina Russel	**1997**	Gordon Tsatoke, Jr Marjorie Winters Tom Fazzini Donna M. Nez Kathleen A. O’Gara Nellie Benally Jim Spahr Teri L. Sanddal Patricia Harris Smith Alex Hardin

Table 4: List of Injury Prevention Fellowship Program Graduates by Year.

1996	Holly Billie Robert Bialas Wenonya St.Cyr Rebecca Lawrence Vince Garcia Emily Watchman Jennifer Lincoln Don Williams David Cramer Lynn Cook Sherry Fredericks-King Shirley Brewer Debra Haines	**1995**	Mark D. Miller Diana M. Kuklinski Lovetta Phipps Chris B. Buchanan Barbara A. Spriggs Debra M. Meek Randy Benefield James R. Howell Angela Maloney	**1994**	Hayden Anderson Michael Keiffer Kenny Hicks Willard Dause Albert Locklear Patricia Rouen John Spriggs Dione Bartmess Dan Hanson Mary O'Connor Wayne Hall Mike Halko Phyllis Cooke-Green Sharan Freiberg	**1993**	Alta Bruce Matthew J. Powers Roxanne L. Ellingson Wendy Fanaselle Ward Jones Darla Tillman Shawn F. Sorenson Mark Jackson Mark H. Mattson John D. Smart Cynthia LaCounte Paul T. Young
1992	Michael M. Welch Daniel C. Strausbaugh Virginia Begay Christopher Krogh Jodee Dennison Deanne M. Boisvert Louise B. Wedlock Dale M. Bates Susan McCracken Charles Stewart Watson Margaret M. Simons Joe Maloney Duane Kilgus Theresa Botruff	**1991**	Kelly M. Taylor Evelyne Tunley Vurlene Notsinneh David Robbins Geoffrey G. Langer Craig A. Shepherd Debbie Burkeybile Keith Varvel Linda Thompson Kathi Gurule Gary J. Gefroh Jan Person Kiyomi Bird Steven G. Inserra Meda Nix Mildred Blackmon R. Cruz Begay	**1990**	Carol L. Rollins Malcolm B. Bowekaty John W. Leith Russell L. Savage Bernadette V. Hudnell Brenda J. Demery Dwayne Reed Kevin D. Meeks Vivian Echavarria DeAnne Pete Hardy John P. Leffel Lisa Lincoln Gina L. Locklear David H. McMahon Vanette R. Chase	**1989**	Melvin Clifford Jeffrey J. Smith Sherron K. Smyth Eusibeo Toya Lois Jean Bressette Edward "Ted" Moran Glenn Frew Jimmie V. Stewart David C. Martin Woody K. Begay Fred E. Wiseman Richard A. Sullivan Harold Cully Candice N. Bell Michael Rathsam Darrel N. Whitman L.J. David Wallace III
1988	John R. Weaver Helen A. Hayes Christine M. Jackson Robert S.Newsad David M. Mosier Gary A. Schuettpelz Jerry L. Lee Mark A. Kelty David C. Short B. Kevin Molloy Nancy M. Bill Gail G. Buonviri Elaine R. Bender Alan J. Dellapenna Jon S. Peabody Brian Cagle Douglas R. Akin	**1987**	Ray Van Ostran William Bouwens, Jr. Ronald Perkins Steve McLemore Byron P. Bailey Edwin J. Fluette Jacqueline E. Moore Ralph Fulgham Larry Dauphinais Jack L. Christy				

*This Fellowship year was a Program Development Class.

**There was not a Fellowship class in 2001, 2010 and 2013.

Another advanced educational program offered by the DEHS is the IEH Residency. Originally offered in 1970, the Residency develops the technical skills necessary for staff to address the specialized needs of the institutional environment. In 1992, the IHS entered into a Memorandum of Understanding with the Uniformed Services University of the Health Sciences (USUHS), Department of Preventive Medicine and Biometrics, to participate in the Master of Public Health (MPH) degree program. To follow the MPH degree, a 12-month post-graduate residency was developed to provide training in the area of environmental and occupational safety and health. In 2015, the IHS switched from the USUHS MPH degree to the Master of Science in Public Health (MSPH) degree program to increase the academic rigor of the program. Participants selected for the IHS Long-Term Training Program enter a two-year assignment located in Bethesda and Rockville, Maryland. The first year is spent completing coursework and developing a research thesis project of impact to IHS needs. The second year continues coursework, but focuses on completing the research project, while incorporating opportunities to develop IEH competencies in diverse work environments. These competencies may be developed through training and practical work experience rotations through federal healthcare organizations and other government and private institutions.

There are 16 IEH Residency Graduates currently active with IHS and tribal programs (Table 5) and a new resident began the program in 2015.

Table 5: Active IEH Residency Graduates.

Graduate	Residency Year
Katherine Hubbard	2014
Timothy Taylor	2014
Valerie Herrera	2010
Ricardo Murga	2010
Danny Walters	2009
Charles Woodlee	2008
David Cramer	2005
Mark Strauss	2005
Gary Carter	2003
Brian Hroch	2003
Kit Grosch	2001
Chris Kates	2001
Keith Cook	1999
Jeff Morris	1995
David McMahon	1994
Curt Smelley	1993

Figure 3 shows the distribution of DEHS staff (273) within the national program (this excludes headquarters staff). Of these 128 were federally employees and 145 were tribal employees. The types of staff are Environmental Health Specialists (EHS) (209), Community Injury Prevention Specialists (33), and Institutional Environmental Health Specialists (31).

Thirty-six percent (98/273) of all DEHS staff, including federal and tribal employees, have master's degrees in Environmental Health or a related field. Of the federal staff 51% (65/128) and 23% (33/145) of tribal staff have advanced degree. Figure 4 presents the percentage of DEHS staff with master's degrees by specialty. Thirty one percent (64/209) of generalists, 39% (13/33) of IP Specialists, and 68% (21/31) of the IEH staff have master's degrees.

Of all DEHS staff 52% (143/273) are Registered Environmental Health Specialists or Registered Sanitarians (REHS/RS). Of the federal staff 67% (86/128) were registered and of tribal staff 39% (57/145) were registered. Figure 5 summarizes registration according to specialty.

Fifty-six percent (118/209) of generalists, 65% (20/31) of IEH Specialists, and 15% (5/33) of the IP staff were registered.

Figure 3: Distribution of DEHS staff within the national program.

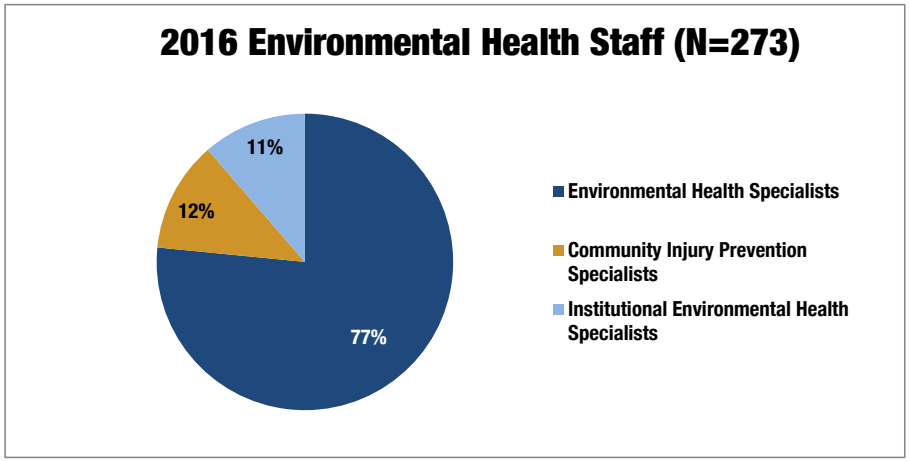


Figure 4: Percentage of DEHS staff with master's degrees.

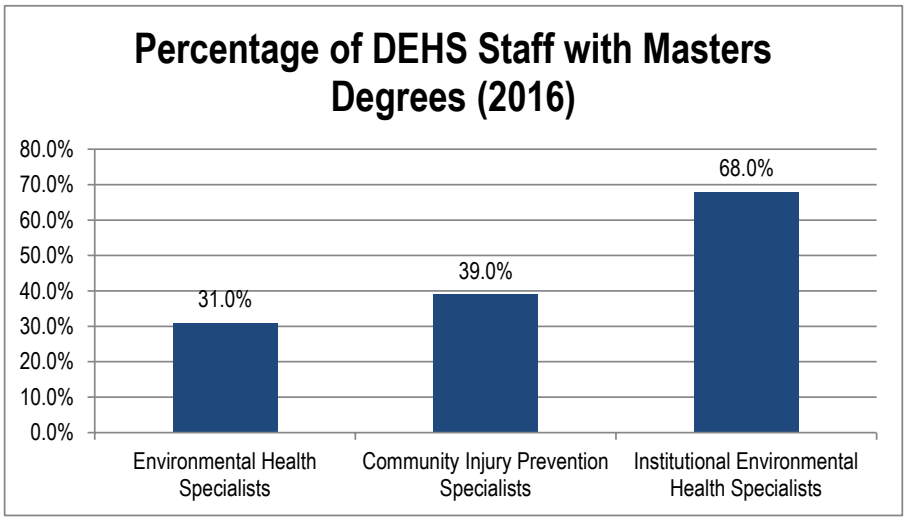
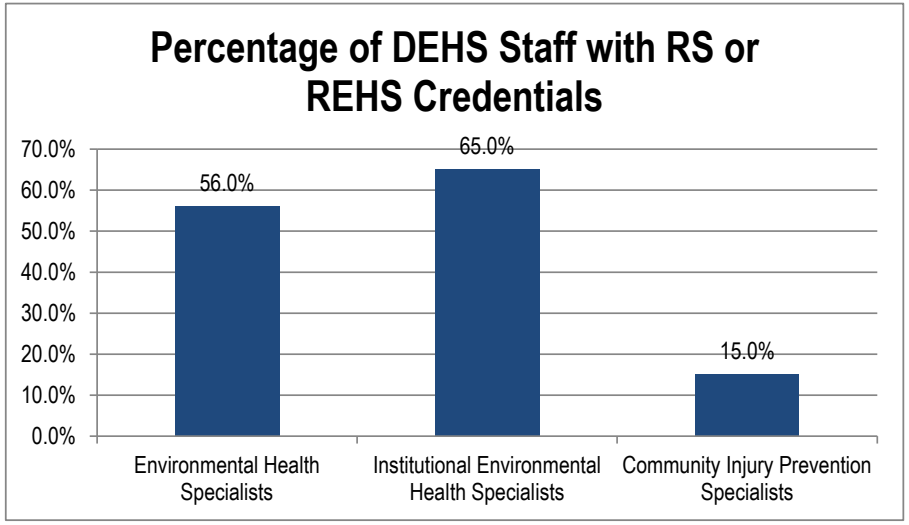


Figure 5: Percentage of DEHS staff with REHS/RS credentials.

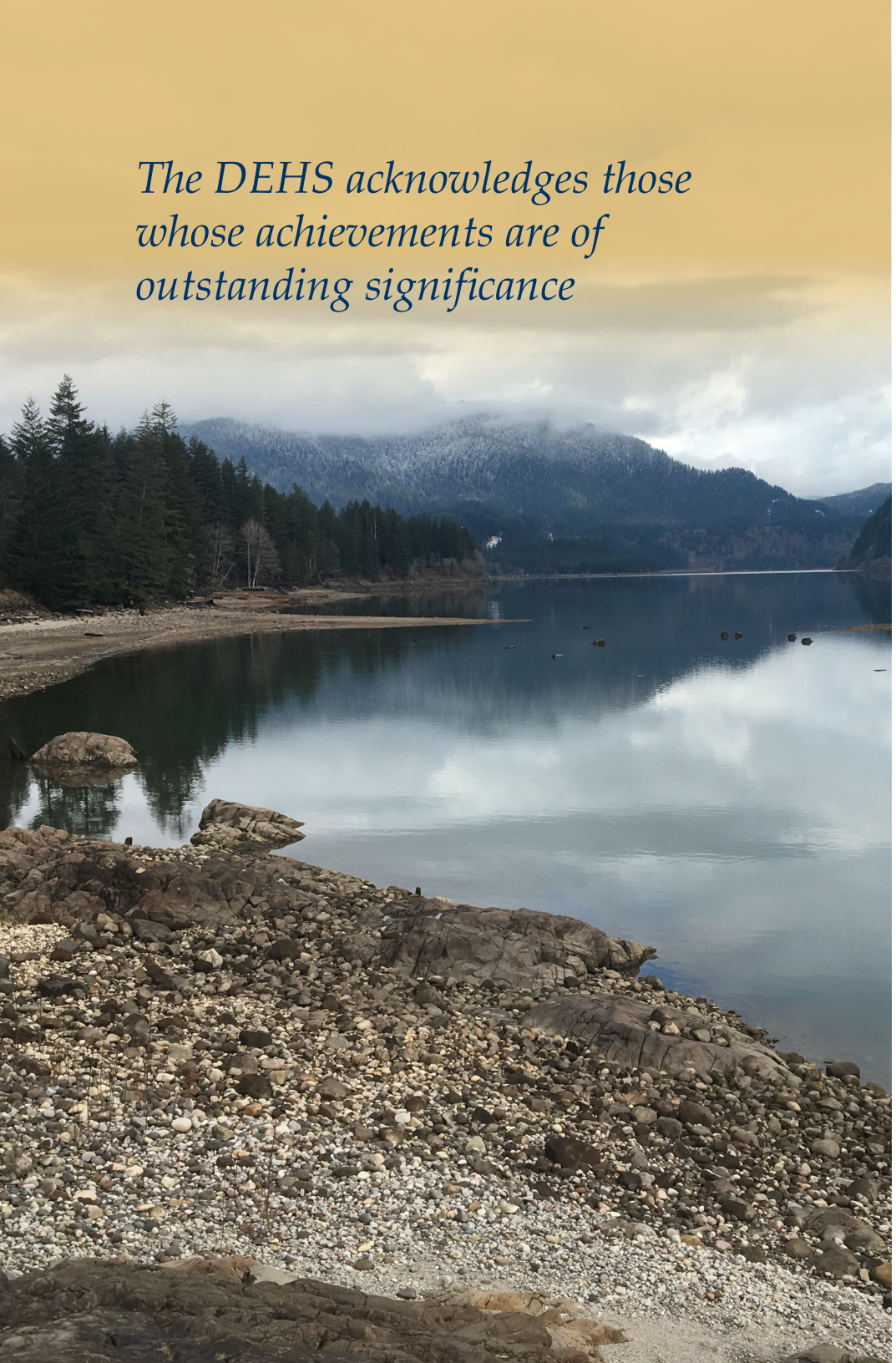


Of all DEHS staff 14% (39/273) completed the IHS IP Fellowship Program, 18% (49/273) were Child Passenger Safety Technicians, and 3% (9/273) met Food and Drug Administration (FDA) standards to conduct retail food service inspections. Table 6 summarizes these and other credentials.

Table 6: Summary of DEHS Staff Certifications.

Certification	Environmental Health Specialist	Community Injury Prevention Specialist	Institutional Environmental Health Specialist	Total	Percent of total
REHS/RS*	118	5	20	143	52%
IP Fellow	27	9	3	39	14%
Certified Safety Professional	10	0	3	13	5%
Certified Industrial Hygienist	0	0	6	6	2%
Certified in Infection Control	2	0	1	3	1%
Child Safety Passenger Safety Technician	36	11	2	49	18%
Certified Playground Safety Inspector	2	1	0	3	1%
Certified Radiation Protection Surveyor	2	6	5	13	5%
Certified Environmental Health Technician	3	0	0	3	1%
Diplomat, American Academy of Sanitarians	0	0	2	2	1%
CHEM**	1	0	1	2	1%
FDA Standard	9	0	0	9	3%
Lead/Asbestos Certification	6	0	4	10	4%
IEH Residency	1	0	12	13	5%
Certified Pool Operator	35	0	0	35	13%
OSHA HAZWOPER	13	0	2	15	5%
Healthy Homes Specialist	4	0	0	4	1%
Certified Professional in Food Safety	9	0	0	9	3%
Other	18	1	0	19	7.0%

*Registered Environmental Health Specialist/Registered Sanitarian
**Certificate of Healthcare Emergency Management



Recognition

There are several awards the DEHS staff may earn in recognition of contributions and achievements towards IHS goals, objectives, and the completion of significant activities. Table 7 summarizes awards received by the DEHS staff in 2016.

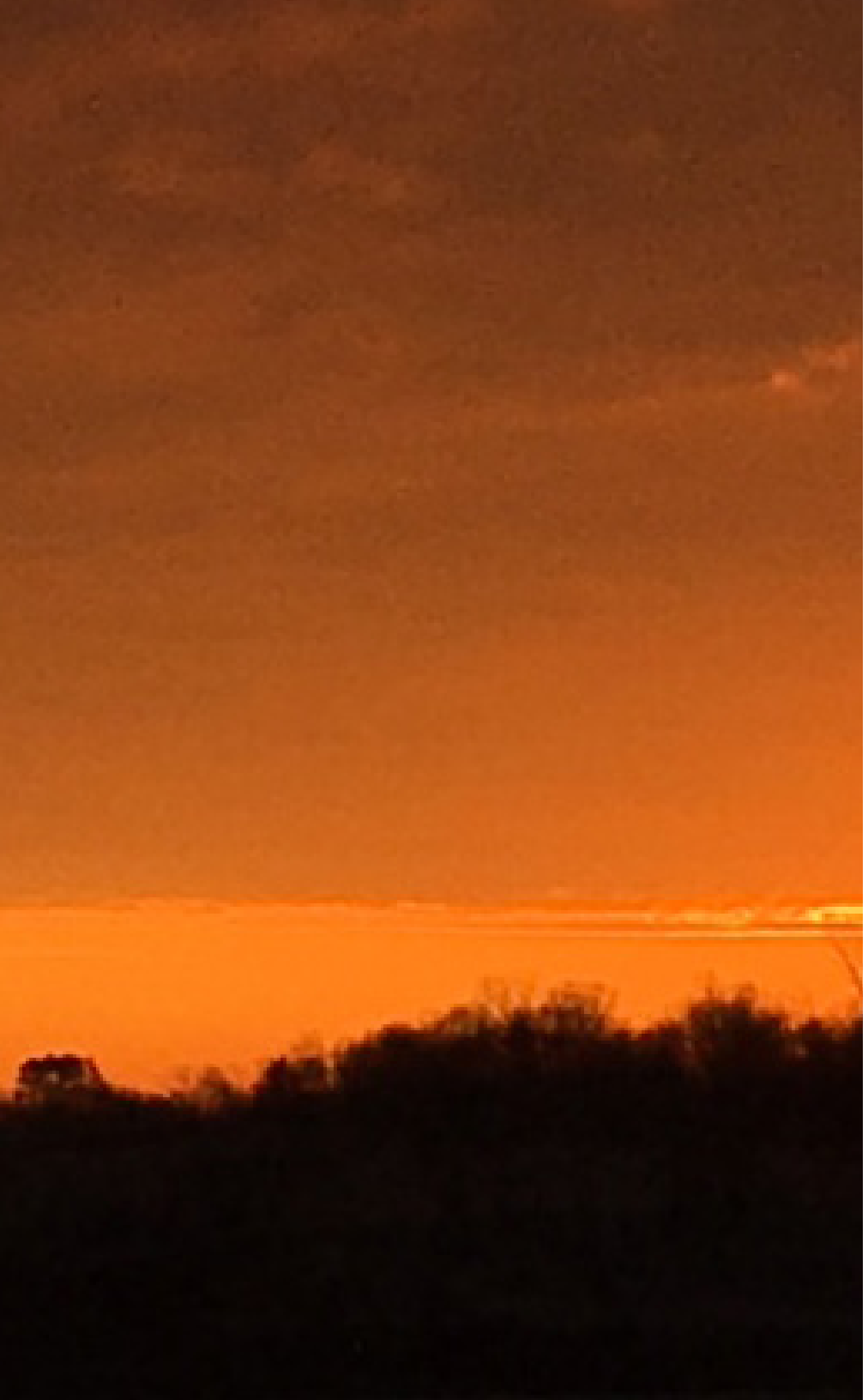


Table 7: **Summary of Awards Received by DEHS Staff.**

Summary of Awards Received by DEHS Staff			
Award Type	Federal	Tribal	Total
Public Health Service Awards			0
OSM	1		1
Commendation Medal			0
PHS Achievement Medal	3	1	4
PHS Citation			0
Crisis Response Service Award			0
Outstanding Unit Citation			0
Unit Commendation	2		2
Isolated Hardship			0
Training Ribbon			0
Field Medical Readiness Badge			0
Foreign Duty Award	2		2
Hazardous Duty Award	2		2
Special Assignment Award			0
Indian Health Service Area Awards	18	2	20
Civil Service Personnel Awards	5		5
National IHS Awards	13		13
Other National Awards			0
Tribal Awards			0
TOTAL	46	3	49

Beginning in 1993, DEHS has annually recognized an outstanding Environmental Health Specialist (EHS) for the year. Nominees are scored on three major categories: special achievements, professionalism, and innovation. The achievements of those individuals who have been selected as EHS of the Year are recognized by their peers as being instrumental in advancing the DEHS Program's vision of improving the lives of AI/AN people through model public health practices. A list of all the national EHS of the Year recipients to date can be found in Table 8.

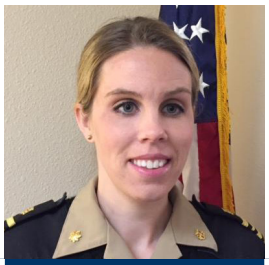
Table 8: EHS of the Year, 2016 through 1993.

2016	Mike Reed, Great Plains Area IHS	2004	Celeste Davis, Albuquerque Area IHS
2015	Sarah Snyder, California Area IHS	2003	Casey Crump, Bemidji Area IHS
2014	Landon Wiggins, Phoenix Area IHS	2002	Pete Wallis, Tanana Chiefs Corporation
2013	Martha Maynes, Bemidji Area IHS	2001	Molly Patton, Tanana Chiefs Corporation
2012	Lisa Nakagawa, California Area IHS	2000	Shawn Sorenson, South East Alaska Regional Health Corp.
2011	Bryan Reed, Bristol Bay Area Health Corp.	1999	Mike Welch, Phoenix Area IHS
2010	Amanda M. Parris, Phoenix Area IHS	1998	Diana Kuklinski, Phoenix Area IHS
2009	Timothy Duffy, Bemidji Area IHS	1997	Mark Mattson, Bemidji Area IHS
2008	Holly Billie, Phoenix Area IHS	1996	Harold Cully, Oklahoma Area IHS
2007	Stephen Piontkowski, Phoenix Area IHS	1995	Keith Cook, Navajo Area IHS
2006	Troy Ritter, Alaska Native Tribal Health Consortium	1994	Carol Rollins, Ho-Chunk Nation
2005	Andrea Horn, Phoenix Area IHS	1993	John Sarisky, Navajo Area IHS

Individuals who received Area EHS of the Year (2016) were:

Albuquerque Area
Alyssa Bernido

Bemidji Area
Pam Thunder

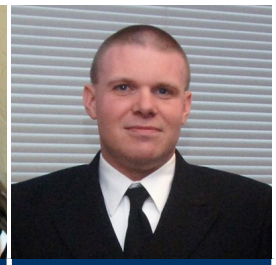


California Area
Molly Madson

Great Plains Area
Mike Reed

Navajo Area
Richard Skaggs

Oklahoma City Area
Katie Tompkins



Phoenix Area
Jason Hymer

These Area EHSs of the Year were nominated for the IHS EHS of the Year (2016) and Mike Reed, Great Plains Area IHS, was selected.

CDR Reed had several collateral duties in 2016 that advanced and promoted the mission of the EHS program.

INDIAN HEATLH SERVICE ENVIRONMENTAL HEALTH SPECIALIST OF 2016

MIKE REED, REHS, MA, MPH

INTRODUCTION

CDR Mike Reed is proudly nominated by the Great Plains Area (GPA) Division of Environmental Health Services (DEHS) for the IHS Environmental Health Specialist of the Year. CDR Reed, REHS, MA, MPH, is the EHS Specialist of the year due to his quality work in the Sioux City District and five month TDY assignment to the Winnebago Service Unit to assist their infection control program.

SPECIAL ACCOMPLISHMENTS

CDR Reed had several collateral duties in 2016 that advanced and promoted the mission of the EHS program. They were:

1. Assisted the Winnebago Service Unit address gaps in their Infection Control program;
2. Great Plains Area COSTEP Recruiter – work resulted in two COSTEP candidates assigned to the Area in 2016;
3. GPA Protocol for Assessing Community Excellence in Environmental Health (PACE-EH) coordinator – work resulted in two Service Unit's with active projects, one nearing completion (Step 12 and Step 7 respectively);
4. TIPCAP Project Officer; and
5. Member of HQ WebEHRS Forms workgroup.

CDR Reed was assigned to the Winnebago Service Unit to assist with fixing gaps in the infection control (IC) program related to CMS survey findings and a third party contractor's assessment of the facility. CDR Reed used comprehensive public health principles to address the issues and concerns. The following outlines the process and outcomes from each element of the 10 Essential Services of EH used by CDR Reed during the TDY. He began the project by conducting a complete assessment of the documented IC findings. Then he carried out several key informant interviews to further diagnose and investigate the IC issues. Once he completed these first steps, he used

the findings and his observations to form a checklist of items to address and working closely with the IC contractor; this became his work plan and evaluation tool. He then moved on to correcting issues of greatest concern. One was to address gaps in how the IC program had been communicating to the Service Unit's IC Committee. He did this by changing the chairmanship of the IC Committee to be someone other than the IC Nurse/Specialist – best practice dictated that the IC Specialist would report to the committee, not direct it. He then mobilized the committee to start working on CMS issues and their own internal findings. This helped the committee focus on key issues and to be more effective. CDR Reed addressed findings that were based on poor information/miscommunication and empowered the facility to resolve these items quickly. For example, the podiatry clinic was serving patients in a room that had a "sterile procedure in progress" sign on the outside, yet the work being performed was not considered a sterile procedure. CDR Reed clarified the list of procedures happing in the room, had a statement written by the podiatrist regarding the non–invasive nature of the procedures, and had the room reclassified to an exam room. Policy development was also lacking and CDR Reed worked with the IC contractor and key staff to complete the required IC risk assessment and IC control plan. These foundation documents were then used to update the IC manual (policies and procedures) which were submitted for review and approval before CDR Reed rotated out of the assignment. Enforcement of Laws. During respirator fit testing work, CDR Reed found that many of the staff identified as requiring respirators had opted out of fit testing, even though their position required one. CDR Reed worked with Employee Relations/Labor Relations and reminded staff that if a position required fit testing it was a condition of employment. He borrowed a port-a-count and was able to arrange over 130 staff to be fit tested with few opt outs. CDR Reed worked to link facility staff to needed resources. In one case he worked with CDC to get the facility a temporary enrollment number so they could meet their mandatory disease reporting requirements through the National Healthcare Safety Network. CDR Reed worked with Service Unit leadership to assure a competent IC workforce be developed on site. Through his efforts, two staff were able to get certified as Infection Preventionist with the Association for Professionals in Infection Control. CDR Reed did a complete assessment of the IC program hand hygiene (HH) evaluation metrics. The rates had lingered in part because the program was measuring inaccurately and used the repeated measuring as an intervention. CDR Reed and staff fixed this issue so they could focus on the problem areas and start to create meaningful interventions. A Plan Do Study Act was implemented to address these HH issues prior end of his TDY.

PROFESSIONALISM

As the Sioux City District EHS, CDR Reed provided environmental health, injury prevention, occupational safety, and institutional environmental health services to 39,000 American Indians on eight reservations in Iowa, Nebraska, South Dakota and North Dakota. He directly supervised three federal Environmental Health Specialists and provided program support to three tribal EH staff in the Sioux City District. Through his leadership, CDR Reed was able to positively address performance concerns in the District in 2016 and as a result, his District ended the year with the highest number of surveys completed. As a professional, CDR Reed has several other certifications: Certified Pool Operator, Certified Pool Inspector, AK Sanitary Survey Inspector, OSHA instructor, and IHS Injury Prevention Fellowship graduate (2008).

As a mentor and leader, CDR Reed has proven himself numerous times in 2016. He assisted District and field staff gain mastery of the PACE-EH process through direct mentoring and providing a webinar to all EHS staff on the subject. Currently the PACE-EH work is paying off with staff taking the lead in assisting their tribes finish current PACE-EH projects. His infection control detail to the Winnebago Service Unit stood up an IC program by the time his TDY ended. As a program leader, CDR Reed does a great job, as evidenced by his leading the 2016 *Salmonella* outbreak response team of nine GPA EHS staff over two weeks. The team received praise from the South Dakota State Department of Health, Service Unit and Tribal leadership as being efficient, professional and a key to preventing secondary spread of *Salmonella*.

SUMMARY

The infection control work carried out by CDR Reed was part of a larger effort to stand up the Winnebago Service Unit following that sites failure to meet CMS conditions of participation. CDR Reed went above and beyond to help the Service Unit in his task and provided outstanding service to the community and Area as a result. His work products are easily transferable to other locations and echo best practices. The OEH&E is viewed as a can do program and it's through the work and activities of individuals like CDR Mike Reed that this reputation is earned.

LCDR Ellis demonstrated exemplary commitment to the mission of the IHS and DEHS

GARY J. GEFROH SAFETY and HEALTH AWARD

CAPT Gary J. Gefroh was a nationally recognized and highly respected Institutional Environmental Health (IEH) Officer. He served the IHS for 20 years providing expert technical consultation in the fields of healthcare accreditation, safety management, infection control, and industrial hygiene. The purpose of the Gary J. Gefroh Safety and Health Award is to recognize significant contributions by an individual or group resulting in improved healthcare safety and/or infection control at an IHS or tribal healthcare program. This award is sponsored annually by the Office of Environmental Health and Engineering.

Table 9: **Gefroh Award Winners, 2016 through 2008.**

Year	Winner	Profession	Area/Facility
2016	Matthew Ellis	IEH Officer	Portland Area
2015	Emily Warnstadt	Dental Hygienist	Portland Area (Team Award)
2015	Angel Daniels-Rodriguez	Medical Technologist	Portland Area (Team Award)
2014	Brian Hroch	IEH Officer	Albuquerque Area
2013	Greg Heck	Safety Officer	Phoenix Indian Med. Ctr.
2012	Jeff Morris	IEH Officer	Chickasaw Nation Div of Health
2011	Tim Duffy	IEH Officer	Bemidji Area
2010	Wayne Keene	Safety Officer	Northern Navajo Med. Ctr.
2008	David Cramer	Safety Officer	Phoenix Indian Med. Ctr.

2016 GEFROH AWARD WINNER

MATTHEW ELLIS, MPH, REHS

SUMMARY OF ACCOMPLISHMENTS

Coordinating wildland fire response including obtaining air scrubbers that allowed health facilities to re-open, and protected vulnerable populations at childcare, shelter, and elder facilities

Leading the response to an identified infection control breach, including coordination with legal and regulatory authorities, development of new policies, and dissemination of results

Tailoring and deploying a standardized environment of care dashboard for the ambulatory setting, and serving as co-lead for the Area Accreditation Service Unit Readiness Team

INTRODUCTION

LCDR Ellis serves as the Portland Area Institutional Environmental Health Officer and Emergency Management Coordinator. His program provides services to six federal service units and thirty-three tribes in three states. LCDR Ellis also served as the Acting Director, Division of Environmental Health Services, Portland Area, IHS, during 2015 and 2016.

COMMUNITY SUPPORT DURING WILDLAND FIRE RESPONSE

In the summer of 2015, LCDR Ellis coordinated in a multi-agency response to the Okanogan Fire complex on the Colville Indian Reservation. As part of this response, LCDR Ellis secured emergency funding, coordinating through IHS-HQ Contingency Ops and Plans, and specified and procured 10 industrial air scrubbers through the National Supply Center for use at health centers, childcare facilities, and shelters. In August 2016, Tribal communities in Eastern Washington were significantly impacted during the Cayuse Mountain Portion of the Hart Fire in Eastern Washington. The efforts of LCDR Ellis were again instrumental in protecting IHS operations and public health, by coordinating the deployment of the industrial air scrubbers on, 8/24/16, to a Federal Service Unit that was closed; impacted with hazardous air quality from the wildland fire. Again, his efforts improved the air quality for patients and staff; minimizing time without access to care and providing a safe working environment for patients and staff. LCDR Ellis coordinated IHS and tribal needs and established support communication channels Washington State Department of Health (DOH), the Federal Emergency Management Agency, the DHHS Office of the Assistant Secretary for Preparedness and Response, and the DHHS Administration for Children and Families.

LEADERSHIP ON CRITICAL INFECTION CONTROL RESPONSE

In December 2015, LCDR Ellis was contacted by a Tribal Health Clinic Dental Chief, requesting technical assistance in responding to an identified infection control breach in the dental sterilization processes. Due to the scope of the issue, LCDR Ellis advised clinic leadership to suspend operations immediately until an investigation and corrective actions could be taken. LCDR Ellis led the Portland Area response, coordinating response efforts with clinic staff, Washington State DOH, clinic liability insurance attorneys, IHS leadership, and a third party consultant that LCDR Ellis secured to conduct an onsite investigation.

LCDR Ellis reviewed clinic policy and identified gaps in regulatory accreditation compliance. In order to assess the level of risks to patients, LCDR Ellis interviewed staff responsible for reprocessing reusable critical and semi-critical devices and conducted a comprehensive gap analysis of the sterilization practices. Due to the scope of onsite findings, and interruption to services, LCDR Ellis lead the required reporting to the Accreditation Association for Ambulatory Health Care (AAAHC). The investigation determined the number of patients seen during the period of concern, and the number of patients with a known bloodborne pathogen diagnosis, to include HIV and hepatitis. LCDR Ellis guided the clinic through the industry standard 14-point protocol for exposure investigation after a failure of disinfection and sterilization procedures.

LCDR Ellis assisted with developing new policy, as well as patient notification and bloodborne pathogen screening procedures at the conclusion of the investigation. LCDR Ellis also worked with the AAAHC tribal liaison to develop improved review of sterilization procedures. At the request of the Portland Area IHS Chief Medical Officer, LCDR Ellis

presented at the Regional IHS Clinical Director's Meeting in April 2015 and provided resource packages on the investigation findings and sterilization requirements. This work has standardized and improved sterilization and infection control processes throughout the region. LCDR Ellis' response efforts ensured utmost patient safety, established comprehensive quality improvement in infection control practices at the clinic, and minimized direct liability risk to the Health Clinic operations.

QUALITY IN SAFETY AND INFECTION CONTROL

To prevent future infection control issues in the region, LCDR Ellis developed an environment of patient care dashboard for the ambulatory setting that includes a broad range of both safety and infection control related accreditation standards. LCDR Ellis deployed the dashboard to clinics throughout the region which allows Governing Boards to obtain a real-time understanding of compliance with key institutional environmental health and environment of care risk management accreditation benchmarks. In his efforts as the Co-Lead of the Portland Area Accreditation Service Unit Readiness Team (ASuRT), he has provided onsite environment of patient care dashboard training and consultation to six Federal Service Units and eight Tribal Health Clinics in the Area.

LCDR Ellis demonstrated exemplary commitment to the mission of the IHS and DEHS to improve AI/AN health and quality of life to the highest level. His efforts have improved healthcare infection control and safety and environment of care conditions at both IHS and Tribal healthcare clinics across the Region. The DEHS proudly awards LCDR Matthew Ellis the 2016 Gary J. Gefroh Safety and Health Award for his exemplary service in improving the health and safety of the communities he serves, through his tireless efforts in emergency environmental public health response and infection control/safety program management throughout the region.

DEHS
Services

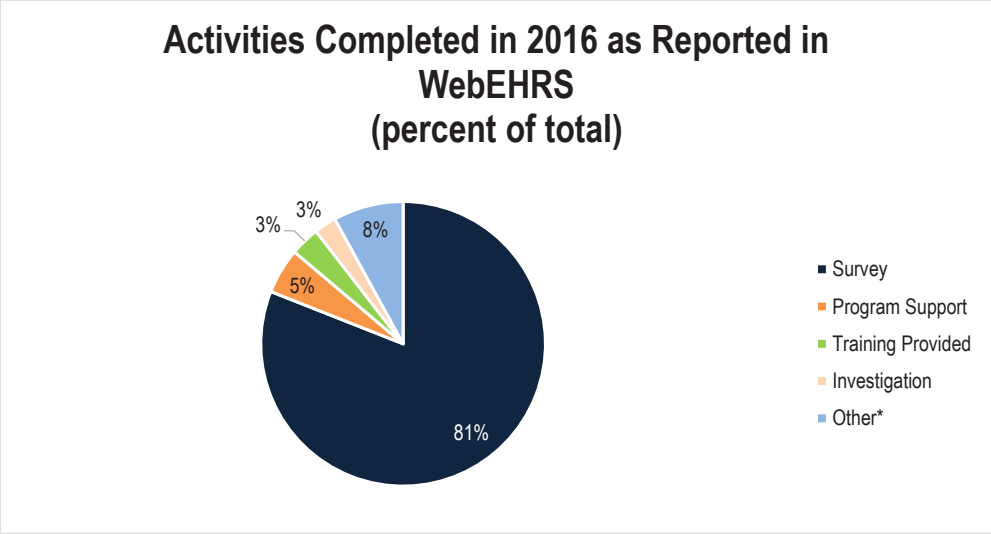
Mr. Sarisky assessing the safety of equipment during a playground survey

Core Services to AI/AN Communities

The DEHS is a comprehensive, field-based program with an overarching responsibility to provide community environmental health support. We are leaders in the environmental health profession who provide a range of services on water quality, waste disposal, hazardous materials management, food safety, community injury prevention, vector control, occupational safety and health, and other environmental health issues.

For the DEHS, health monitoring activities not only include real-time surveys for a variety of public health-related issues but also the use of regional and national information systems to manage, track, and respond to trends and issues. Program staff had EH responsibilities for 19,416 facilities during 2016 (Source: WebEHRS Reports, National Establishment Counts*). Staff recorded 8,731 activities that monitored the environmental health status of these facilities (Source: WebEHRS Reports, Activities Summary). Figure 6 summarizes various types of completed activities. Of the 8,731 activities reported, 81% (7085/8731) were surveys, representing the most common activity. There were 292 training sessions conducted and 221 investigations completed.

Figure 6: Activities completed in 2016 as reported in WebEHRS.



*Other includes mobilize community, policy development, sample/test, evaluation, control, training received, and data collection.
*All reports used a filter that excludes Headquarters items.

The DEHS manages the Notifiable Disease and External Cause of Injury (NDECI) Web-based data retrieval system. The NDECI system retrieves specific injury or disease categories for tracking and reporting using "passively" exported Resource Patient Management System data 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 (SU), facility, and community levels. Data can be retrieved by International Classification of Diseases, 9th Revision, codes used to define the groupings for injuries, asthma, notifiable diseases, intestinal diseases, and vectorborne diseases.

The DEHS uses the Custom Data Processing, Inc., Environmental Health Inspection Management System to operate the DEHS Web-based Environmental Health Reporting System (WebEHRS). Features include electronic survey capabilities, tracking environmental health activities, a myriad of report functions, and a mobile application for field use.

Tara Sloan, COSTEP, testing an eyewash station

Specialized Services to AI/AN Communities

The DEHS provides specialized services in IP and IEH through consultation and technical assistance. IP Specialists take the lead in working with communities to develop public health strategies to reduce the burden of injury experienced by AI/AN communities. IEH Specialists have skills to identify, evaluate, and respond to unique environmental safety hazards found in healthcare, educational, childcare, correctional, and industrial facilities. Accomplishments for the two specialized services can be found in this section of the report.

COMMUNITY INJURY PREVENTION PROGRAM

Implementation of IP interventions using a comprehensive approach is effective. Successful IP interventions incorporating all strategies (education, legislation, enforcement, and environmental modification) can have the most impact to improve public health. There were several comprehensive IP interventions implemented by the Areas in 2016:

- Motor vehicle injury prevention effective strategies
- Unintentional elder falls prevention programs (exercise, home safety assessments, clinical)
- Suicide prevention (youth aimed initiatives, locked gun storage)
- Fire safety (installation of smoke alarms, home safety)
- Advocacy and training targeting tribal leadership

Starting in FY 2014, CDC's Tribal Motor Vehicle Injury Prevention Programs (TMVIPP) funded eight tribes/tribal organizations and the DEHS staff at these tribes provided various levels of valuable technical support that ranged from project design and implementation to data collection and quality assurance. TMVIPPs incorporated at least two interventions from the Guide to Community Prevention Services designed to increase seatbelt use, child safety seat use, and decrease alcohol-impaired driving. These projects are highlighted in several CDC materials like the Best Practices Guide 2016, web sites, and in the Journal of Safety Research.

The IHS Tribal Injury Prevention Cooperative Agreement Program (TIPCAP) started in 1997 to help tribes/tribal organizations build IP infrastructure and capacity. TIPCAP applies the public health approach to employ effective strategies that address education, policy development with enforcement and environmental modifications to ensure effective, and sustainable programs. TIPCAP projects address the IHS IP program priorities of motor vehicle injury prevention and unintentional elder fall prevention. It also supports local tribal community IP priorities such as suicide prevention, violence prevention, drowning prevention, helmet use, poisoning prevention, and fire safety. This year marked the start of a new funding cycle for TIPCAP (2016-2020) in which 23 grantees from eight IHS Areas were awarded.

Since 1997, over $24.5 million has been awarded to 99 tribes or tribal organizations. During the initial 1997 funding cycle, 13 tribes/tribal organizations were each awarded $25,000 for three years to create injury prevention programs, and four were awarded up to $8,000 each for training. As TIPCAP matured so did the funding amount and number of participating tribes. In 2016, over $1.1 million was distributed through 23 cooperative agreements ranging from $20,000 to $100,000. Seven tribes/tribal organizations were awarded $100,000 annually for five years and sixteen tribes/tribal organizations/urban programs each received $25,000 annually for five years.

A summary of this funding, by Tribe, is presented in Table 10.

Table 10: IHS TIPCAP Funding.

Funding Cycle	1997 to 2000		2000 to 2005			2004		2005 to 2010			2010 to 2015			2016 to 2020	
Tribe	$25,000 for 3 yrs	Up to $8,000 for 1 yr	$50,000 for 5 yrs	$15,000 for 3 yrs	$5,000 for 1 yr	$50,000 for 2 yrs	$15,000 for 2 yrs	$75,000 for 5 yrs	$50,000 for 5 yrs	$10,000 for 3 yrs	$65,000 for 5 yrs	$80,000 for 5 yrs	$10,000 for 3 yrs	$100,000/1st Yr $80,000/2nd-5th Yr	$20,000/5 Yrs
Absentee Shawnee Tribe											X				
Ak-Chin Indian Community				X									X		X
Albuquerque Area Health Board														X	
Aleutian Pribilof Islands Association		X													
Aroostook Band of Micmacs							X								
Bad River Band of Lake Superior Tribe of Chippewa Indians			X									X			
Blackfeet Tribe														X	
Bristol Bay Area Health Corporation	X								X			X			X
Caddo Nation			X					X							
California Rural Indian Health Board, Inc.			X					X				X			X
Chickasaw Nation			X												
Chilkoot Indian Association							X								
Chitimacha Tribe of Louisiana										X			X		
Choctaw Nation of Oklahoma									X			X			X
Colorado River Indian Tribes			X								X				
Comanche Nation of Oklahoma			X												
Dakota Center for Independent Living					X										
Eastern Band of Cherokee Indians			X												
Fallon Paiute Shoshone Tribe	X														

Table 10: IHS TIPCAP Funding.

Funding Cycle	1997 to 2000		2000 to 2005			2004		2005 to 2010			2010 to 2015			2016 to 2020	
Tribe	$25,000 for 3 yrs	Up to $8,000 for 1 yr	$50,000 for 5 yrs	$15,000 for 3 yrs	$5,000 for 1 yr	$50,000 for 2 yrs	$15,000 for 2 yrs	$75,000 for 5 yrs	$50,000 for 5 yrs	$10,000 for 3 yrs	$65,000 for 5 yrs	$80,000 for 5 yrs	$10,000 for 3 yrs	$100,000/1st Yr $80,000/2nd-5th Yr	$20,000/5 Yrs
First Mesa Consolidated Villages			X												
Fond Du Lac Reservation			X					X				X			X
Fort Peck Assiniboine & Sioux Tribes	X			X											
Gerald L. Ignace Indian Health Center				X											
Gila River Indian Community											X				X
Grand Traverse Band of Ottawa and Chippewa Indians					X		X								
Great Plains Tribal Chairmen's Health Board											X				X
Greenville Rancheria													X		
Hardrock Chapter			X					X				X			
Ho-Chunk Nation											X				X
Hoopa Valley Tribe	X		X												
Houlton Band of Maliseet Indians		X		X						X					
Hualapai Tribe											X				
Indian Health Council, Inc.									X			X			X
Jamestown S'Klallam Tribe	X														
Jemez Pueblo															X
Jena Band of Choctaw Indians										X					
Kiowa Tribe of Oklahoma									X			X			
Kodiak Area Native Association			X												
Lac Vieux Desert Band of Lake Superior Chippewa Indians										X					

Table 10: IHS TIPCAP Funding.

Funding Cycle	1997 to 2000		2000 to 2005			2004		2005 to 2010			2010 to 2015			2016 to 2020	
Tribe	$25,000 for 3 yrs	Up to $8,000 for 1 yr	$50,000 for 5 yrs	$15,000 for 3 yrs	$5,000 for 1 yr	$50,000 for 2 yrs	$15,000 for 2 yrs	$75,000 for 5 yrs	$50,000 for 5 yrs	$10,000 for 3 yrs	$65,000 for 5 yrs	$80,000 for 5 yrs	$10,000 for 3 yrs	$100,000/1st Yr $80,000/2nd-5th Yr	$20,000/5 Yrs
Maniilaq Association											X				
Menominee Indian Tribe of Wisconsin											X				
Miccosukee Corporation	X														
Mille Lacs Band of Ojibwe				X											
Mount Sanford Tribal Consortium							X								
Nambe Pueblo										X					
Navajo Nation			X					X				X			
Nevada Urban Indians Inc.							X								
NNAHA Ojibwe Tribes								X							
Northwest Portland Area Indian Health Board											X				X
Northwest Washington Indian Health Board											X				
Norton Sound Health Corporation						X			X			X			
Oglala Sioux Tribe									X		X				
Oneida Tribe of Wisconsin						X			X			X			
Osage Nation of Oklahoma	X								X						
Pascua Yaqui Tribe of Arizona			X												X
Pawnee Nation of Oklahoma						X									
Pokagon Band of Potawatomi Indians	X														
Ponca Tribe of Nebraska		X		X											
Ponca Tribe of Oklahoma		X	X											X	
Pueblo of Jemez	X		X					X				X			
Pyramid Lake Paiute Tribe										X					X
Quechan Indian Tribe									X			X			

Table 10: IHS TIPCAP Funding.

Funding Cycle	1997 to 2000		2000 to 2005			2004		2005 to 2010			2010 to 2015			2016 to 2020	
Tribe	$25,000 for 3 yrs	Up to $8,000 for 1 yr	$50,000 for 5 yrs	$15,000 for 3 yrs	$5,000 for 1 yr	$50,000 for 2 yrs	$15,000 for 2 yrs	$75,000 for 5 yrs	$50,000 for 5 yrs	$10,000 for 3 yrs	$65,000 for 5 yrs	$80,000 for 5 yrs	$10,000 for 3 yrs	$100,000/1st Yr $80,000/2nd-5th Yr	$20,000/5 Yrs
Reno-Sparks Indian Colony			X								X				X
Rocky Boy Tribal Health			X												
Rocky Mountain Tribal Epi Center														X	
Rosebud Sioux Tribe				X											
Sac & Fox Nation	X														
Salt River Pima-Maricopa Indian														X	
San Carlos Apache											X				
San Felipe Pueblo									X			X			
Sapulpa Indian Health Center										X					
Sault Ste. Marie Tribe of Chippewa Indians					X										
Seneca-Cayuga Tribe of Oklahoma										X					
Sisseton-Wahpeton Oyate of the Lake Traverse						X			X			X			
South East Alaska Regional Health Consortium			X					X				X			
Southcentral Foundation				X			X								
Southern Ute Indian Tribe													X		
Spirit Lake Tribe			X												
St. Regis Mohawk Tribe			X										X		
Standing Rock Sioux Tribe									X						
Stockbridge-Munsee Community Band Mohican Indians				X						X			X		
Tanana Chiefs Conference											X				
The Kaw Nation			X					X				X			
Three Affiliated Tribes			X												

Table 10: IHS TIPCAP Funding.

Funding Cycle	1997 to 2000		2000 to 2005			2004		2005 to 2010			2010 to 2015			2016 to 2020	
Tribe	$25,000 for 3 yrs	Up to $8,000 for 1 yr	$50,000 for 5 yrs	$15,000 for 3 yrs	$5,000 for 1 yr	$50,000 for 2 yrs	$15,000 for 2 yrs	$75,000 for 5 yrs	$50,000 for 5 yrs	$10,000 for 3 yrs	$65,000 for 5 yrs	$80,000 for 5 yrs	$10,000 for 3 yrs	$100,000/1st Yr $80,000/2nd-5th Yr	$20,000/5 Yrs
Toiyabe Indian Health Project, Inc.									X						
Trenton Service Area			X												
Tuba City											X				
Tule River Indian Tribe											X				
United Tribes Technical College	X		X												
Ute Indian Tribe						X									
Walker River Paiute Tribe													X		
Washoe Tribe of Nevada and CA														X	
White Earth Reservation Tribal Council				X						X					
White Earth Band of Chippewa Indians															X
White Mountain Apache Tribe				X					X						
Wichita and Affiliated Tribes				X											X
Winnebago Tribe of Nebraska														X	
Winslow Indian Health Care Center, Inc.						X									
Yavapai-Prescott Indian Tribe	X														
Ysleta del Sur Pueblo	X														

Beginning in 2007, the IHS IP Program and The IHS Primary Care Provider collaborated to dedicate each July issue to injury prevention. The 2007-2016 issues presented articles on the cost of injuries, guiding principles of the IP Program, TIPCAP, a case study on partnerships, and strategies addressing issues such as lack of occupant restraint use in motor vehicles, gang violence, suicide, community-based prevention, and tribal epidemiology centers.

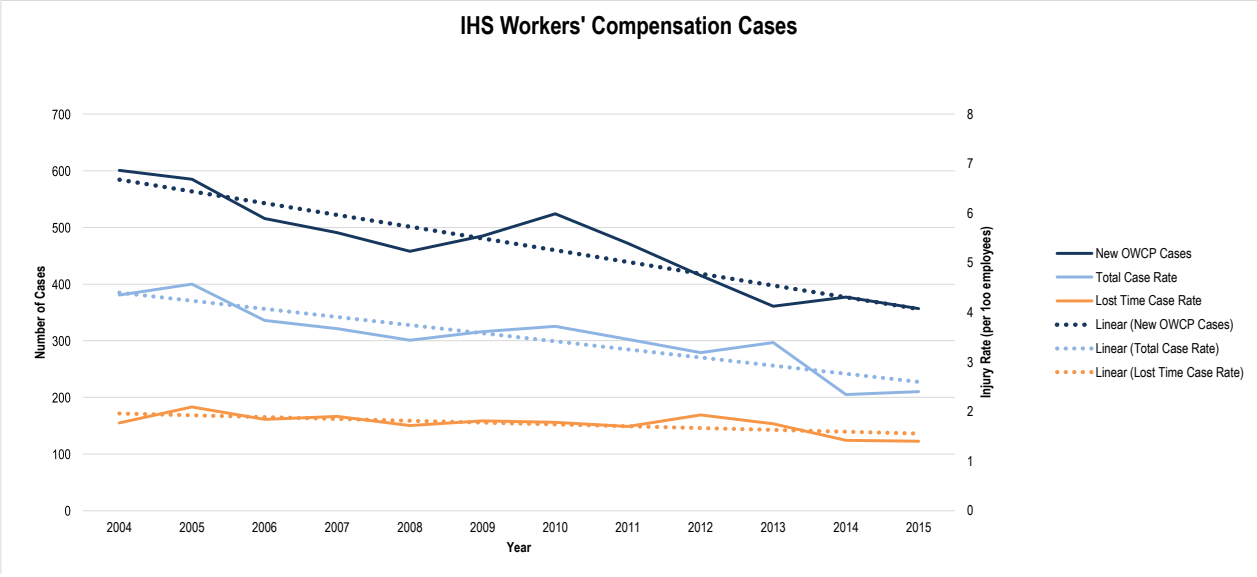
INSTITUTIONAL ENVIRONMENTAL HEALTH PROGRAM

The mission of the Institutional Environmental Health (IEH) program is to provide leadership in the development and implementation of effective environmental health and safety management systems to reduce risks of injury and/or illness to our patients, employees and visitors; to protect our environment; and to minimize property losses. The IEH Program staff offer services in federal and tribal healthcare facilities, as well as a range of community facilities such as childcare, school, and elder programs. One of the primary objectives of the IEH Program is to support local safety programs. This is accomplished by providing education opportunities, onsite technical support, accreditation assistance, and safety program evaluation and by managing the IHS Web-based Incident Reporting System (WebCident).

A metric for measuring success of safety programs is the number of occupational injury cases and occupational injury rates. Figure 7 illustrates the occupational injury case numbers and rates for IHS federal employees. When compared to the Bureau of Labor Statistics data, the IHS injury cases are consistently lower than those in the national healthcare industry. Figure 7 also indicates a trend of decreasing injury cases, total case rates, and lost-time case rates[1] for the IHS from 2004 through 2016.

1 Lost-time injuries are generally considered more severe injuries which result in lost workdays. These injuries are a subset of the total injury case rate.

Figure 7: IHS Workers' Compensation Cases, 2004-2015.

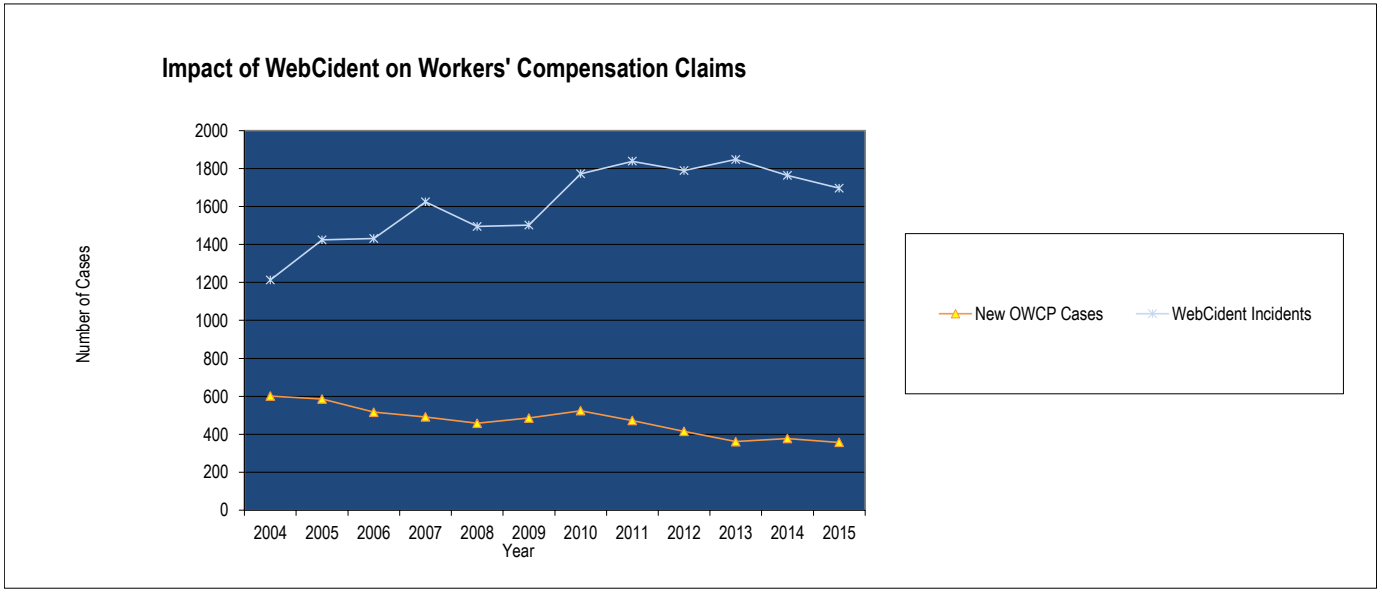


WebCident is a critical data collection and analysis tool supporting healthcare accreditation in the areas of information management, medication management, environment of care, and regulatory concerns for occupational safety and health reporting. Since DEHS launched the system in 2002, WebCident has collected information on more than 38,233 worker, visitor, and patient incidents at over 200 IHS and tribal hospitals, health centers, health stations, dental stations, school health stations, youth regional treatment centers, and Area and other offices. During 2016, there were 3,511 incidents reported.

The reporting of incidents and analysis of WebCident data has an impact on the reduction of risk in the work environment through heightened awareness, the development of interventions such as educational programs, changes to policy and work practices, and environmental modification. These impacts may result in the reduction of occupational injury and workers' compensation cases.

Figure 8, shows the potential impact of incident reporting on the reduction of workers' compensation cases (Source: Office of Workers' Compensation Programs (OWCP)).

Figure 8: WebCident worker injury incidents and Office of Workers' Compensation Programs injury cases; 2004-2015.



DEHS National Focus Areas

5 Focus Areas

	Children's Environment Prevent illness and injury by reducing risk factors where children live, learn, and play.
	Safe Drinking Water Prevent waterborne illness and ensure safe drinking water supplies.
	Food Safety Prevent foodborne illness and promote food safety and security.
	Vectorborne and Communicable Diseases Prevent diseases transmitted by insects, animals, humans, and the environment.
	Healthy Homes Prevent diseases and injuries in homes caused by unhealthy living conditions.

The DEHS delivers a comprehensive EH program to more than 2.2 million AI/AN people in 36 states. We consult with and provide technical assistance to tribes in an effort to provide safe, healthy environments. This section of the report describes each of the focus areas and highlights projects conducted by the IHS Areas in 2016. Evidence-based or promising practices are used most often, but specific projects are also evaluated for effectiveness. Comprehensive interventions use a multi-targeted approach involving education, environmental modification, legislation, and enforcement.

Four common activities related to each focus area:

- Conduct inspections that identify EH risk factors
- Recommend corrective actions to reduce or eliminate risk factors
- Investigate disease and injury incidents
- Provide EH training classes to federal, tribal, and community members

Children's Environment

The DEHS is responsible for ensuring EH settings for AI/AN children are safe and ultimately provide a healthy environment in which to learn, play, and grow. EH issues associated with children are present in schools, HS Centers, and childcare facilities on tribal lands. These issues present an ever-increasing set of complex challenges to be addressed. A few examples of EH related issues of concern are as follows: indoor air quality, lead exposure, child passenger safety, and infectious disease exposure. The DEHS staff provides services to approximately 3,000 child-occupied facilities as well as services in community housing. Comprehensive interventions, based on local surveillance, are conducted to reduce the impact of disease and injury in the communities.

Many indicators of effective programs focus on reducing the number of critical or repeat violations within a particular facility. Critical violations are threats to the public's health that need to be corrected immediately, and repeat violations occurred in more than one consecutive facility inspection. The DEHS staff focus on eliminating risk factors related to fire safety, emergency response, asthma triggers, lead-based paint, communicable disease exposure, and child passenger safety. Projects with an emphasis on the children's environment conducted in 2016 are presented.

Hoopa Battle of the Belts

Molly Madson

California Area

INTRODUCTION

The Centers for Disease Control and Prevention indicates that motor vehicle crashes are the leading cause of death for U.S. teens. In Humbolt County, California, where the population is 77% Native American, the data is no different. According to 2012/2013 data from the CA Department of Public Health, American Indian teens in Humbolt County were 7 times more likely to die from motor vehicle crashes than teens of all races (Figure 1). This disparity inspired a Hoopa Valley High School pilot project to use a peer-to-peer approach to change behavior modeled after the Battle of the Belts program; a program first developed by the Arizona Injury Prevention Advisory Council.

METHODS

Discussions with the Superintendent and Principle of Hoopa Valley High School lead to a classroom presentation as part of a student leadership course at the school. The disparities in motor vehicle crash injury and death rates were presented as well as an overview of the Battle of the Belts approach to increasing seatbelt use amongst teens. The students and teacher decided this was an important initiative and committed to be part of the project. Training was provided to the students on how to conduct seatbelt observation surveys to obtain baseline seatbelt use data. The observation surveys were conducted at various locations near the school and on school grounds.

RESULTS

The Student Leadership Class at Hoopa Valley High School conducted seatbelt observations of 100 cars driving at or near the school. Drivers were observed to be wearing a seatbelt 73% of the time. Passengers were observed to be wearing a seatbelt 52% of the time. Finally, for rear passengers the seatbelt use rate was 50% (Figure 2).

Figure 1.

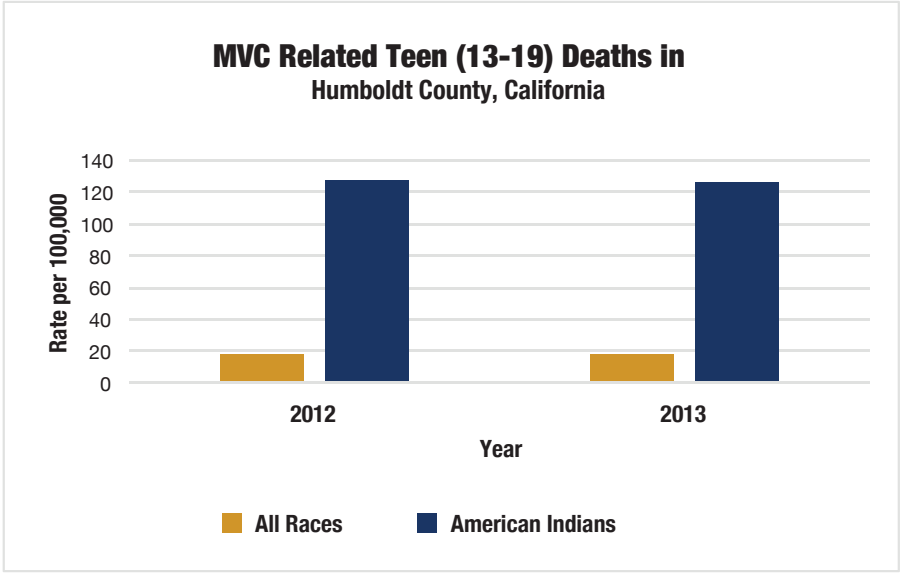
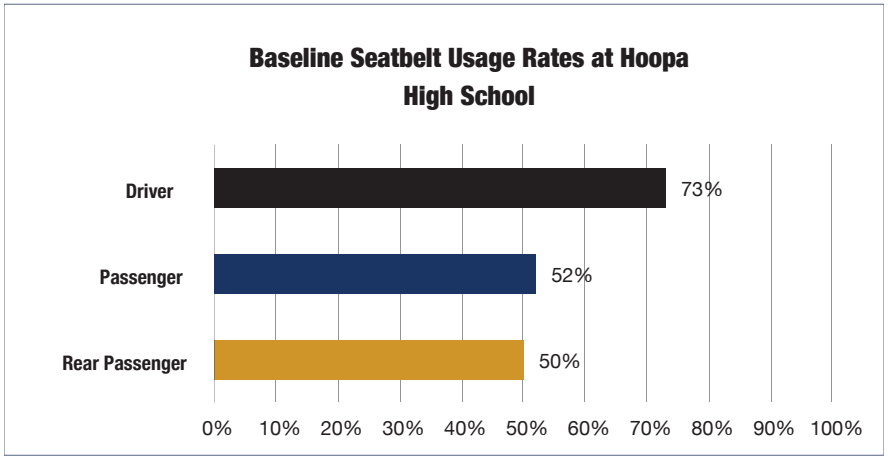


Figure 2.



DISCUSSION

Students who performed the seatbelt observation surveys received training and were provided template forms to record their observations during the survey. Their result found approximately 1 out of every 2 passengers in the Hoopa Valley Tribe do not wear a seatbelt. While the age of the passengers was not recorded, the observation sites and survey times used to create the baseline data were selected specifically to target the teen population in Hoopa. Furthermore, while every car passing by the site was included in the survey, U.S. Census Bureau data estimates 77% of the population living in the Hoopa Valley is American Indian.

CONCLUSIONS/RECOMMENDATIONS

Partnering with the Hoopa Valley High School is just the first step of this pilot project to bring the Battle of the Belts approach as an intervention to reduce teen deaths due to motor vehicle crashes. The Student Leadership Class will continue to partner with the Indian Health Service to develop peer-to-peer based interventions that best meet the needs of the school.

Positive Community Norms in Injury Prevention

Richard Skaggs, Tish Ramirez

Navajo Area

INTRODUCTION

People's behavior is strongly influenced by their perceptions of the attitudes and behaviors of the people around them. Research suggests that as youth more accurately perceive the norms of their peers, they are more likely to make healthy choices themselves. Motor vehicle related injuries kill more people aged 15-19 years than any other single cause in the U.S. (CDC, 2015). Those ages 15-24 years and American Indians have the highest motor vehicle traffic-related death rates in New Mexico (New Mexico Department of Health, 2016). Positive community norms (PCN) is an approach based on the Science of the Positive framework (Linkenbach, 2016) designed to reduce misperception of the norms, which in turn results in a reduction in risk behaviors, such as not wearing seatbelts and driving after drinking. Since 2010, the Shiprock Service Unit (SRSU) has supported a positive norms campaign to increase seatbelt usage, reduce impaired driving, and reduce risk-behaviors related to alcohol and other drug use among Navajo youth. The 2016 SRSU Positive Community Norms project is presented here.

METHODS

The Montana Model of Positive Community Norms Communication (Linkenbach 2003, 2009) was utilized:

1. Planning and Environmental Advocacy
   - The SRSU PCN partnership began with the PCN Institute, held in Monument Valley (2010), Canyon De Chelly (2014), and Monument Valley (2015)
   - Key stakeholders were participants at the institutes
   - In 2016, the campaign goals, objectives, and process were explained to community members, parents and stakeholders
2. Baseline Data
   - Youth Risk and Resiliency Survey data were baseline data and used for messages
   - Pre-perception questionnaire provided baseline data for peer misperception
3. Message Development
   - Six PCN messages were developed and distributed at the high schools and in communities
   - Two of the messages were displayed on local billboards
   - Radio ads were aired on Navajo specific radio stations at specified times during the contact period
4. Communication Plan
   - Communication Plan was developed with a timeline for coordinating the messages addressing alcohol/impaired drinking and driving, seatbelt use, and resilience factors
5. Pilot Test and Refine
   - Messages and designs were tested with a minimum of 250 high school students to ensure appropriateness and appeal
6. Implement the Campaign
   - Campaign timeline was developed and followed
   - Presentations on the PCN process to students, with emphasis on the 9th and 10th graders, to help them understand the purpose of the campaign and the meaning of messages
7. Evaluation
   - The intermediate variable peer perception of the student norms was monitored with a "Perception Poll" prior to and after messages were released
   - Long-term outcomes were assessed with the Youth Risk and Resiliency Survey (YRRS)

RESULTS

Over the past six to seven years, alcohol use among high school students in Shiprock, Newcomb and Kirtland has decreased significantly.

- Self-reported past 30-day alcohol use decreased from 33.7% (2009) to 14.2%. (2015) (source: YRSS)
- Self-reported driving after drinking alcohol decreased from 13.3% (2009) to 9.2% (2015) (source: YRSS)

These positive changes corresponded with decreased misperception of the student norms of alcohol use and related risk behaviors.

- Shiprock high school students estimated alcohol use among their peers decreased from 75% (2009) to 61% (2014) – improvement in peer perception

In 2014, the PCN campaign was expanded from the Shiprock high schools to include all five high schools in Shiprock, Newcomb and Kirtland.

In 2016, messages included student norms related to seatbelt use, as well as substance abuse (alcohol and meth) and risk behaviors (driving after drinking alcohol).

- 60% of students saw or heard a PCN message
- Underestimated seatbelt use among peers: 53% (pre-questionnaire), 45% (post-questionnaire) –improvement in peer perception
- Preliminary results show significant improvements in peer perception of seatbelt and meth use

DISCUSSION

The PCN campaign process strategically reduces deficit thinking around unhealthy life choices by correcting misperceptions of norms of different referent groups. The process is congruent with the Navajo ethos of harmony and beauty. This campaign emphasized and celebrated the positive choices youth and Native communities make. The message development required a substantial amount of research and data collection necessary to understand the norms that existed in the communities.

CONCLUSIONS/RECOMMENDATIONS

The PCN process is highly interactive with message testing where youth and adult input was sought and valued. “Nizhoni” is the Navajo term for beauty and harmony. This word was chosen by students as a logo to personalize their campaign. This personalization of the campaign by the students was an affirmation of the process.

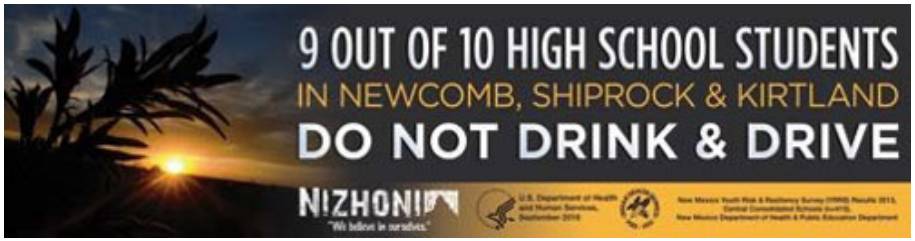


Figure 1. LCDR Wiggins conducting an environmental health survey

Pyramid Lake Paiute Tribe Child Care: Facility Improvements and Adoption of Minimum Standards

Landon Wiggins, Kelli Mohler

Phoenix Area

INTRODUCTION

Over several years, comprehensive environmental health surveys of the Pyramid Lake Paiute Tribe's (PLPT) Little Warriors Childcare Programs (Wadsworth and Nixon sites) identified multiple repeat critical findings. Surveys continually indicated significant policy and procedural issues negatively affecting the health and safety environment for the care of children. The lack of regulations for implementing the Tribe's licensing procedures and the lack of current written and approved childcare standards contributed to these operational compliance gaps. The DEHS staff worked with Tribal administration to advocate for adoption of standards and licensing requirements.

METHODS

In 2016, the DEHS staff partnered with Tribal administration, Childcare and Social Services to develop a quality improvement plan based on:

- A targeted assessment focused on the physical buildings (Figure 1)
- A review of previous environmental health surveys
- A review of existing policy and procedures
- A review of the social services childcare licensing program

Identified priorities were categorized as facility related, procedural gaps, and operational deficiencies.

- Facility related deficiencies were compiled in a request for bid proposal schedule format used in the solicitation of contractors for renovation and repair needs
- Procedural gaps solutions were outlined in formal IHS endorsement

letters of the Minimum Tribal Child Care Standards and Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Early Care and Education Programs
- Operational deficiencies recommended corrective actions and were communicated through onsite staff training and standard operating procedures

RESULTS

- Utilizing both contractors and tribal maintenance, the Pyramid Lake Paiute Tribe completed the following facility repairs and renovations:
  - Installation of two, three-compartment sinks with drain boards and grease traps
  - Relocation of existing chemical dishwasher
  - Installation of two kitchen handwashing sinks
  - Removal of all windows within 3-feet of finished flooring
  - Construction of two partitions to create separate infant rooms
  - Installation of four primary classroom handwashing sinks
  - Installation of two janitorial sinks
  - Installation of two washers and dryers
- The Tribe adopted the Department of Health and Human Services – Minimum Standards for Tribal Child Care, a Health and Safety Guide through Tribal Resolution as basis for the Tribe's childcare licensing program
- Within the same Resolution, the Tribe referenced Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Early Care and Education Programs as a basis for policy development and environmental assessments
- The program's policies and standard operating procedures were comprehensively revised and implemented
- Staff training requirements were updated and implemented, to include following the state childcare training requirements
- At the conclusion of this initiative, the Tribe's Child Care Program was able to achieve a 75% reduction in priority environmental health and safety findings

DISCUSSION

- Tribal Resolution laid the foundation to establish and implement operational standards at the program level, allowing the Tribal Social Services to reinstate the childcare licensing program for the first time in over a decade
- Systems level change promotes tribal capacity for enforcing and ensuring compliance

CONCLUSIONS/RECOMMENDATIONS

- DEHS will continue to promote annual health and safety training for staff as well as priority survey findings

PREPaRE Emergency Response for Schools

Richard Skaggs, Tish Ramirez

Navajo Area

INTRODUCTION

Suicide prevention is a priority for Indian Health Service. Among young adults ages 18 to 24, Native Americans have higher rates of suicide than any other ethnicity. Navajo youth are 2.5 times more likely to complete suicide than their peers of other races. The 2011 American Indian/Alaskan Native National Suicide Prevention Strategy Objective 4.2 called for interdisciplinary crisis response teams at the local level. PREPaRE is a nationally recognized best practice community response training for school-based healthcare professionals, and school administration and support staff. We describe the implementation of a crisis response team in the Shiprock Service Unit.

METHODS

This project began in 2011 as a partnership with the School Mental Health Advocate, Northwest Region, New Mexico Department of Health (NMDOH), and the San Juan County Safe Schools Committee, housed in the San Juan County Office of Emergency Management. The Shiprock DEHS staff had explored suicide prevention efforts with a prevention coalition funded by a Drug Free Communities Grant. The NMDOH partner identified the PREPaRE curriculum as a best practice. Through a Memorandum of Agreement (MOA), the school superintendents agreed to share counseling resources across school districts in San Juan County, NM. The Shiprock DEHS staff facilitated meetings with key school health professionals and administrators across school districts to plan the training. The Shiprock DEHS staff submitted a proposal to the IHS Navajo Area Methamphetamine Suicide Prevention Initiative (MSPI) coordinator who authorized funding for the PREPaRE trainers. The MSPI Purpose Area 2 addresses suicide prevention, intervention, and postvention. The Shiprock Injury Prevention

Specialist served as the Contracting Officer's Representative in ensuring the contracts were executed per the scopes of work. The Shiprock DEHS staff provided logistical support for trainers and participants. In-kind and other fiscal contributors included the San Juan County Office of Emergency Management (logistics and food), San Juan College (training space), and the participating schools (food).

RESULTS

In May of 2012, 93 school-based health professionals were trained in the PREPaRE Curriculum across six school districts and one community college in San Juan County, NM. A suicide postvention component was also included. Individual school districts had to decide how they would implement this curriculum. There were a variety of implementations in the schools from the building level to the district level. The Bloomfield School District instituted a district-wide plan.

In May of 2016, in one atypical week, two student fatalities befell one of the school districts; a homicide and a suicide. The MOA was invoked and staff from other districts deployed PREPaRE trained counseling staff, food service and transportation staff to support the district in crisis. Following this tragedy, the need to update the county-wide school crisis response was identified. The Shiprock DEHS staff reached out to the MSPI coordinator to see if there was the possibility of supporting another round of trainings in an effort to augment the 2012 training. The MSPI coordinator supported the continuation of the effort to meet the MSPI Purpose Area 2, and approved the request. While the Shiprock DEHS staff sought funding, the San Juan County Emergency Manager and NMDOH School Mental Health Advocate approached the school superintendents for continued support. The superintendents agreed to support another training and updated the existing MOA committing to the continuation of this regional effort to prevent the suicide contagion in San Juan County Schools. PREPaRE 2017 is scheduled for Feb. 27 – March 3.

DISCUSSION

This project incorporated a public health approach of enlisting a multi-disciplinary group to implement a standardized emergency response methodology across the majority of the school districts in a large geographic area of Northwest New Mexico. For the DEHS injury prevention program, this project helped crystalize the program's role in suicide prevention. The project built partnerships which endured staff changes and difficult fiscal times for many of the partners, due to the original MOA that built a framework for resource sharing. In hindsight of the 2012 project, not training the administrators in the participating districts was identified as a cause of the varied methods of PREPaRE implementations across school districts.

CONCLUSIONS/RECOMMENDATIONS

The Shiprock DEHS staff, while not mental health providers, forged a role in suicide prevention through facilitative and collaborative team efforts. The 2012 PREPaRE training in San Juan County was sustainable despite the varied implementation across school districts. Key to the effort was the multi-disciplinary county partnerships, and the school district MOA for the process. County-wide tabletop exercises are planned following the 2017 PREPaRE training.

Head Start Indoor Air Quality Assessment: Reno Sparks Indian Colony

Nicole Kenote, Kelli Mohler

Phoenix Area

INTRODUCTION

In 2016, the Reno Sparks Indian Colony (RSIC) Environmental Program partnered with the Reno District DEHS to evaluate and promote indoor air quality (IAQ) in the head start environment as part of a Tools-for-Schools initiative. The quality of air inside a building is directly related to concentrations of contaminants (e.g. gases and particles) and the ability of the building's ventilation system to dilute and remove these contaminants. Monitoring IAQ is essential to ensuring a safe and healthful environment for building occupants, especially children, who are more susceptible to negative impacts of poor IAQ. As an assessment of IAQ, the DEHS conducted baseline monitoring of carbon dioxide (CO2) concentrations.

METHODS

The Head Start was located within the RSIC Education Center and consisted of two classrooms, a receptionist area, a kitchen, office spaces, and a childcare room. Thirty-five children were enrolled during the assessment period.

- CO2 levels were measured with a VelociCalc direct reading meter
- Initial recordings were taken at 7:00AM and then at 2-hour intervals until 3:00PM, to include a time before the building was occupied as well as max occupancy times to compare peak readings between rooms and the outdoor environment
- 12 locations were monitored (3 outdoor and 9 indoor)
- Each measurement reflected a 10 second sample time which was then used in calculating an average of the measures for each space and the sampling period

RESULTS

The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) CO2 recommendation for acceptable ventilation in education centers is 1,000 parts per million (ppm).

- From 9:00AM to 3:00PM, CO2 concentrations in both classrooms [A and B] and the childcare room exceeded the level recommended for educational occupancies (Table 1)
- The reception, administrative offices and kitchen storage also exceeded the recommended level at sampling times from late morning to late afternoon (Table 1)
- The elevated levels in the classroom spaces were the most significant and indicated an insufficient supply of outdoor air for the number of people in the indoor space

Table 1. Carbon Dioxide Levels (ppm) Relative to Time and Location at the RSIC Head Start

	7:00AM	9:00AM	11:00AM	1:00PM	3:00PM
Outside facility - Near Parking Lot	382	346	337	332	339
Outside Front Door	469	398	404	370	400
Outside Back Door (By Childcare)	444	442	401	401	378
Reception	789	974	1173	712	1170
Classroom A	496	1697	1250	1212	1118
Classroom B	492	1348	1488	991	1207
Childcare Room	458	1340	1126	1341	1119
Middle Utility Room (Laundry)	504	1264	1092	1004	1130
Back Offices	504	1122	964	965	1046
Kitchen Pantry room	446	890	859	892	1240
Kitchen	445	829	875	877	730
Hallway Leading to Community Area	510	666	720	691	656
Highlighted cell exceeds 1,000ppm ASHRAE recommended CO2 level.					

DISCUSSION

CO2 concentration is not a reliable indicator of overall IAQ, but rather an indirect measure of how well the building's HVAC system(s) is functioning to provide adequate air exchange. Results exceeding the recommended level of 1,000ppm indicate a potential problem with ventilation systems, as the systems may not be able to effectively address other potential contaminants that pose a health risk. Though CO2 is not a direct health risk to occupants until concentrations exceed 5,000ppm, symptoms related to levels exceeding 1,000ppm include lethargy and headaches in some individuals.

CONCLUSIONS/RECOMMENDATIONS

As a result of this assessment, the RSIC Head Start was advised and initiated efforts to improve ventilation and IAQ in their facility.

- Inspect the HVAC system and create an HVAC maintenance plan to include regularly changing filters
- Update the HVAC system to install fresh air intakes in all rooms
- Operate bathroom fans throughout the day to increase air circulation
- Use the "auto fan" function on the HVAC system so that air circulation occurs during all occupied times
- Implement a "No Idling Policy" for vehicles parking outside, to include parents and buses
- DEHS will conduct a follow-up assessment in the spring of 2017 to evaluate these measures

Safe Drinking Water

The DEHS is one of the partners responsible for ensuring safe drinking water for AI/AN people. EH issues associated with drinking water can be caused by organisms or contaminants spread through water. Examples of waterborne illnesses include Giardiasis, Shigellosis, Cryptosporidiosis, lead poisoning, and copper toxicity. Annually, the DEHS staff report approximately 234 activities related to drinking water.

One significant project with an emphasis in safe drinking water was reported in 2016. The DEHS staff also focused on eliminating risk factors related to the operation and maintenance of water systems.

Greywater Recycling Project

Brian Lefferts, Jennifer Dobson, Bob, White

YUKON KUSKOKWIM HEALTH COORPORATION (ALASKA Area)

INTRODUCTION

In the Yukon-Kuskokwim (YK) Delta of southwest Alaska, 45% of homes do not have in-home piped water and sewer services. Unserved homes typically demonstrate severe water rationing practices (2-4 gallons of water per person per day) and utilize a honeybucket to dispose of human waste.

Health research has documented the link between the lack of in-home piped water service and higher rates of respiratory tract and skin infections. In Yukon-Kuskokwim Delta communities lacking piped water, one in three infants is hospitalized for severe respiratory infections. Community water systems cost millions of dollars to construct and funding sources have essentially dried up in recent years. It is unlikely that these communities will received piped water systems in the near future.

Over 90% of the water used in a home is “wash water” for handwashing, bathing, laundry, and other non-consumption purposes. The project aimed to identify an in-home greywater treatment system with the potential of treating “wash water” for reuse within the home. The design concept was to route greywater from the laundry, shower, and bathroom sink into an in-home greywater treatment system. Once treated, the water could be routed back into the home for non-consumption purposes only. By reusing household greywater, the total amount of water that needs to be delivered to each home will be drastically reduced while simultaneously providing recycled water for “wash water” purposes.

The project objectives were to:

- Identify greywater technologies with the potential of treating “wash water” for reuse within the home
- Operate greywater recycling systems during pilot test period
- Monitor operation & maintenance requirements, water quality parameters, and costs associated with each treatment system
- Analyze data and share with project partners

METHODS

Design Assumptions

Water use design assumptions were developed for the project based on typical water use for a YK village home served with a small vehicle haul system and the water use goal of 21 gallons/person/day (Table 1). Household size and crowding was taken into account, as is common in the region. Expected sanitary events (showers, flushes, handwashing) were calculated based on household size. The project design calculations resulted in more concentrated greywater than other projects.

Table 1: Household Water Allocation (6 persons/home).

Purpose	Water Use/ Event (gal)	Events/ Week	Water Use/ Week (gal)
Handwashing (toilet)	0.33	210	69
Handwashing (other)	0.33	84	28
Toothbrush	0.05	84	4.2
Toilet flushes	1.6	126	202
Laundry	25	6	150
Shower (low flow)	14	24	336
Cleaning Water	5	7	35
Cooking /drinking	1.5	42	63
Total			887

Dosing

The dosing schedule was based on NSF guidelines. It was adjusted to meet specific project needs. Bathing source water was added twice per day, and laundry source water was added twice per week (Tables 2 and 3).

Table 2: Bathing Source Water Dosages.

Components	Dose/ 100 L	Dose/ Shift	Units
body wash	30	18.87	g
toothpaste	3	6.00	g
deodorant	2	1.27	g
shampoo	19	12.17	g
conditioner	21	13.30	g
lactic acid	3	3.83	g
secondary effluent	2	2.55	L
bath cleaner	10	0.14	g
liquid hand soap	23	55.65	g
test dust	10	12.75	g
water	26.42	33.71	gal

Table 3: Laundry Source Water Dosages.

Components	Dose/ 100 L	Dose/ Shift	Units
laundry detergent	40	113.40	mL
test dust	10	28.35	g
secondary effluent	2	5.67	L
liquid laundry fabric softener	21	59.54	mL
Na2SO4	4	11.34	g
NaHCO3	2	5.67	g
Na2PO4	4	11.34	g
water	26.42	75	gal

Testing Schedule

The testing schedule was based on NSF guidelines. It was adjusted to meet specific project needs. Additional testing was included to ensure safety of effluent greywater (Table 4).

Table 4: Greywater Lab Sample Schedule.

Parameter	Sample location	
	Raw influent	Treated effluent
Biochemical Oxygen Demand (BOD5)	X	
Carbonaceous BOD (CBOD5)		X
Total suspended solids (TSS)	X	X
pH	X	X
temperature (°C)	X	
Total coliforms & E. coli	X	X
Turbidity	X	X
Disinfectant1 (System 1)		X
Nitrite (NO2)	X	X
Iron	X	X
Nitrate (NO3)	X	X
Total Kjeldahl nitrogen (TKN)	X	X
Total phosphorous (P)	X	X
Chemical oxygen demand (COD)	X	
Total organic carbon (TOC)	X	
Surfactants	X	
Fats, oil and grease	X	
SAR	X	X

Systems

The test systems worked as a closed loop, returning all treated water to be reused in making the next batch of “dirty” water. To account for toilet flushing, 75 gallons of water every two weeks was sent to waste and replaced with potable water.

The general layout of each system included a 130-gallon “dirty water” mix tank, a motorized flow control valve set up on a timer, a pre-filtration water diverter, a treatment system, and a 130-gallon finished water tank.

Three packaged greywater treatment systems were selected for testing, and one customized system was built by the Yukon-Kuskokwim Health Consortium (YKHC) with off-the-shelf components. Each system was modified during the installation process.

System 1: YKHC-OEHE; developed by YKHC; combination of different technologies including ozone.

System 2: Bio-Microbics; membrane filtration; NSF 350 certification.

System 3: Aqua2use; biologic filter process with no membrane; certified and used in Australia.

System 4: WiseWater; membrane filtration; certified and used in Australia.

Stress Testing

Each system was operated during a series of stress tests to evaluate system performance during non-ideal conditions including vacation stress, water efficiency stress, kitchen waste, oil/grease, oil/fuel, and cleaning chemical stress.

RESULTS

Operations

System operations were continual during the testing period from January to June 2016. Stress testing as outlined in NSF was completed at the end of the project to mimic real world scenarios.

Effluent water quality

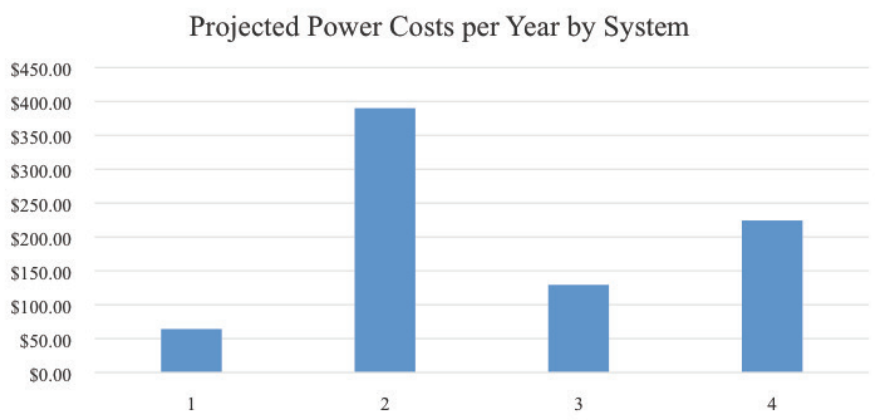
Water quality data analysis is ongoing.

Costs

Due to the closed loop system, minimal potable water was added to each system once operations began which kept water/sewer haul costs to a minimum. Routine operation & maintenance will be required on a regular basis.

The team estimated approximately 24 hours per year per system but was unable to determine costs. The projected power costs to operate each system ranged widely from $64/year to $390/year (Figure 1).

Figure 1: Annual Power Costs by System.



DISCUSSION

This project represented a first-time effort to identify, test, and evaluate four greywater treatment technologies for potential use in rural Alaskan homes. The team faced numerous challenges during initial set up and extending through the project period.

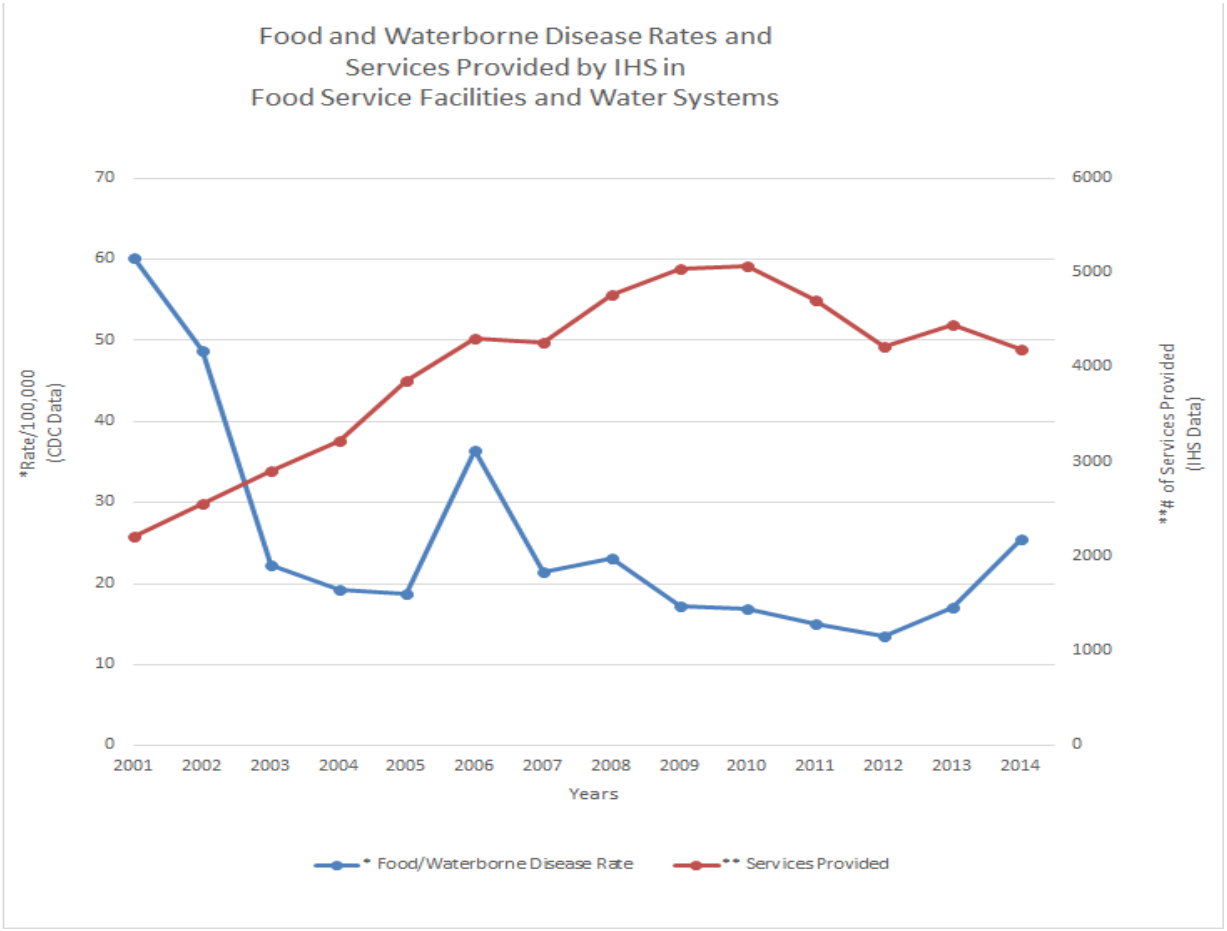
- Due to oversees technology, two systems did not having standard U.S. pipe sizes and had to be retrofitted
- During initial testing, feed rates did not match water use patterns which caused high feed rates through the filter systems and overflow to waste
- High soap events due to an initial miscalculations; the data from the initial overfeed and additional stress testing were used as a proxy for a real-life user event
- Slow buildup of foaming agents through the closed loop system that showed need for pre-filtration of foam causing agents which we accomplished through foam fractioning
- Team learned biological additives must be manually dosed and dye free
- Membranes serviced every 90 days to prevent plugging from biofilm

A second round of lab testing is scheduled to begin during winter 2016/2017 with alterations to the systems to address challenges faced in the first round of testing.

CONCLUSIONS/ RECOMMENDATIONS

In this initial evaluation of greywater treatment technologies, the team documented operation and maintenance requirements, water quality parameters, and costs associated with continuous operations of the systems. Further lab testing is required before considering an in-home pilot test of a greywater system.

Figure 9: Trends in services and reportable food and waterborne illnesses.



Sources: * CDC MMWR, Summary of Notifiable Diseases, United States.

** IHS WebEHRS Data System.

Food Safety

The DEHS staff provide services at more than 5,000 food service facilities across the country. The CDC estimates over 48 million cases of foodborne illness occur in the United States annually,128,000 of which require hospitalization and 3,000 of which are fatal. Organisms that result in the most common foodborne illnesses include Norovirus, *Salmonella*, *Clostridium perfringens*, *Campylobacter*, and *Staphylococcus aureus* (CDC, Estimates of Foodborne Illness in the United States, 2011, available at: http://www.cdc.gov/foodborneburden/2011-foodborne-estimates.html).

Effective programs focus on reducing the number of critical or repeat violations within a particular facility. Critical violations are threats to the public's health that need to be corrected immediately, and repeat violations occurred in more than one consecutive facility inspection. Some DEHS staff focus on eliminating risk factors related to inspector bias through standardization of the inspection process. Other staff work to persuade tribal councils to pass food code legislation, whereas others focus on eliminating specific deficiencies (e.g. temperature control, hand washing, and/or employee health).

Implementation of effective EH strategies can substantially reduce disease and injury rates. For instance, from 2001 through 2014, as the number of services provided by IHS to food service establishments and drinking water systems increased 89% (2214 to 4190), the incidence of food and waterborne diseases in the United States decreased 58% (60.2 to 25.52) (Figure 9). Projects with an emphasis on food safety conducted in 2015 can be found on the following pages.

Foodborne Illness Outbreak Of *Salmonella Javiana*

Brandon Parker, Mike Reed, Chris Allen, Great Plains Area; Lon Kightlinger, Dustin Orthbahn, South Dakota Department Of Health

Great Plains Area

INTRODUCTION

The Great Plains Area DEHS Food Safety and Mass Gathering Programs work to prevent and control foodborne illness outbreaks. Between June and July 2016, 112 cases of *Salmonella Javiana* occurred among an estimated 1,100 people who attended a 3-day weekend event on a central South Dakota reservation in which one free evening meal was provided on Saturday and Sunday. The outbreak resulted in 46 confirmed cases by positive stool culture and 66 probable cases. The State of South Dakota Department of Health (DOH), DEHS, and the impacted tribe worked in collaboration to control and investigate the outbreak. *Salmonella* is spread by eating or drinking contaminated food or water, or by contact with infected people or animals.

METHODS

A case-control study was conducted to evaluate specific food items served at the event that may have been associated with the gathering. After collecting a list of food items served by vendors and during the evening meals, a focused questionnaire was developed to administer to ill cases and non-ill cases (controls). Ten Environmental Health Specialist from Great Plains Area and a team from DOH conducted interviews with cases and controls both in-person and by phone. Completed questionnaires were entered into the South Dakota Electronic Disease Surveillance System (SDEDSS). Follow-up interviews were completed on a select basis. A case was defined as a person whom *Salmonella Javiana* with the outbreak PFGE pattern was isolated and who ate event food or who was epidemiologically linked to a confirmed or probable case. A probable case was defined as a person who became ill after eating food from the event or after having contact with a confirmed case.

RESULTS

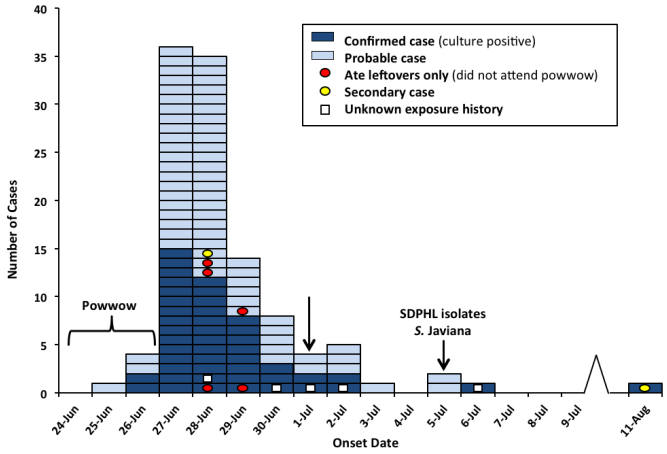
Findings from the case-control study are revealed in Table 1, while Figure 1 shows the Epi curve, and a summary includes:

- Cases: 112; 46 confirmed, 66 probable
- Gender: 62% female; 36% male
- Age: median age of cases 40 years; range 4-84 years
- Race: 96% AI; 4% white or other
- Hospitalizations: 31 cases hospitalized; no deaths
- Geography: majority of cases spanned 12 South Dakota counties; cases found in three states
- Food sampling: no food was available for testing

Table 1: Analysis of Food Served, June-July 2016

Food/Drink	Ill Persons		Well Persons		OR	95% CI	P value
	Yes	No	Yes	No			
Macaroni Salad	68	30	12	54	10.2	4.8 – 21.8	0.000
Baked Beans	55	42	11	55	6.5	3.1 – 14.0	<0.001
Brisket sandwich (beef)	64	35	16	49	5.6	2.8 – 11.3	<0.001
Mixed Fruit Salad	72	25	24	42	5.0	2.6 – 9.9	<0.001
Kool-Aid	43	54	10	56	4.5	2.0 – 9.8	<0.001
Soup (any type)	61	37	19	47	4.1	2.1 – 8.0	<0.001
Cake	54	42	19	47	3.2	1.6 – 6.2	<0.001
Hominy	38	59	11	55	3.2	1.5 – 6.9	0.002
Pork loin sandwich	38	56	13	53	2.8	1.3 – 5.8	0.005
Fried Bread	39	57	16	50	2.1	1.1 – 4.3	0.03
Turkey sandwich	12	81	3	62	3.1	0.8 – 11.3	0.10
Dinner Roll	19	76	8	58	1.8	0.7 – 4.4	0.21
Potato Salad	14	80	6	59	1.7	0.6 – 4.7	0.29
Hamburger	7	89	2	64	2.5	0.5 – 12.5	0.31
Water	41	57	23	43	1.3	0.7 – 2.6	0.37
Cheesy Hash Browns	19	76	11	55	1.3	0.6 – 2.8	0.59
Chili	15	77	10	55	1.1	0.4 – 2.6	0.88
Hot Dog	4	92	2	64	1.4	0.2 – 7.8	0.96
Salsa	5	88	3	62	1.2	0.3 – 5.1	0.88
Chili Fries	7	86	5	60	1.0	0.3 – 3.2	0.97
Lemonade	21	75	18	48	0.7	0.4 – 1.5	0.43
Soda pop	19	77	18	48	0.7	0.3 – 1.4	0.27
Indian taco	13	83	14	52	0.6	0.3 – 1.3	0.20
Chicken sandwich	2	92	0	65	Undefined	Undefined	0.51

Figure 1: *Salmonella Javiana* by Onset of Illness Date, June-July 2016



DISCUSSION

Foods statistically associated with the outbreak were only served from one common location locally referred to as the “cook shack”. In addition to the event organizers cooking and serving soups on both days, the event organizers also hired a licensed grocer to cater Saturday and Sunday evening meals. Food flow processes of all implicated foods were conducted. According to SDEDSS analysis, pre-packaged macaroni salad, that was only served on Sunday, demonstrated the highest odds ratio (OR=10.2; 95% CI, 4.8 to 21.8; p=0.000). Despite this, just 13 cases ate ONLY on Saturday therefore they did not have the opportunity to eat the macaroni salad. The DOH staff conducted a traceback investigation on the out-of-state manufacture of the macaroni salad with no findings.

CONCLUSIONS/RECOMMENDATIONS

The primary purposes of this investigation was to control and identify the cause of the outbreak. Ultimately, the investigation was not able to clearly identify a responsible food item(s). Nevertheless, the likely contributory factor for food contamination may have been either an unidentified infected food worker or an infected event attendee who might of unintentionally cross-contaminated the food(s) or serving utensils.

Vectorborne & Communicable Diseases

Diseases transmitted through humans, insects, or animals present an ever-increasing burden on human health. A few examples of vectorborne or communicable diseases include West Nile virus, H5N1 (Avian Influenza), hantavirus, Rocky Mountain spotted fever, and plague.

The DEHS staff work on the elimination of risk factors through identifying H5N1 in bird populations, conducting spay, neuter, and rabies clinics for dogs and cats, and investigating prairie dog die-offs to prevent human plague cases. Projects with an emphasis on vectorborne and communicable diseases conducted in 2016 can be found on the following pages.

Continuous Accreditation Readiness Program

Brian Hroch, Gary Carter, Melvina Murphy, Vanessa Vicenti, Tom Plummer (retired)

ALBUQUERQUE AREA

INTRODUCTION

The Continuous Accreditation Readiness Program (CARP) is the Albuquerque Area's proactive approach to ensuring continuous healthcare accreditation readiness and preparedness among all of its Service Unit healthcare facilities. This program for managing continuous accreditation readiness in the Albuquerque Area became evident as a means to address and advance the Quality of Care, Environment of Care and Health Care Accreditation. It also became necessary to address various needs that we encounter in our delivery of services from the Area Office. These needs are those of our customers (i.e., patients, visitors, staff and contractors at the SU healthcare facilities). The SU healthcare facility staff are a critical part of the team. Their desire for leadership and the existence of a larger system is what drives many of the CARP activities. This program is also what is needed to follow the direction of our Area Leadership and their Leadership through Headquarters.

METHODS

It is important to know that CARP is a work in progress, which evolved over the last 5-15+ years. An example of this evolving program is how the Area mock survey process grew from a couple of staff at the Area level performing individual mock surveys, to what is now a significant element of CARP. The bottom line is that carp did not instantaneously start with all of the activities included. It developed over the years, at a steady but manageable rate. It was through communication and interaction with staff throughout the Area that we realized we wanted to be able to provide a method for communicating our accreditation activities and their various programs, frequencies, and scope. We recognized that there is a tiered or stratified approach to accreditation readiness and support throughout the Area. Some significant activities occur once every three years, like official accreditation surveys. Other activities occur continuously, like phone and email consults (almost like tech support) and monitoring for hazardous conditions through WebCident and environmental rounds.

DISCUSSION

CARP is the program the Albuquerque Area developed that fits our Area's program needs, organizational culture, and operating environment. This approach requires the Area to have a "consultative" relationship with the Service Units, instead of an "auditor" relationship.

One of the benefits of this Area coordinated and Service Unit engaged approach is broader situational awareness that the Area Office shares with the Service Units. With the Service Units engaging the Area Office in their official accreditation surveys and in their day-to-day operations, the Area Office has a greater awareness of the details of accreditation surveys and operational challenges that can then be shared with other SUs. Additionally, this approach expands the network of the facility staff, where they now have increased contact and professional relationships with their peers in the other facilities.

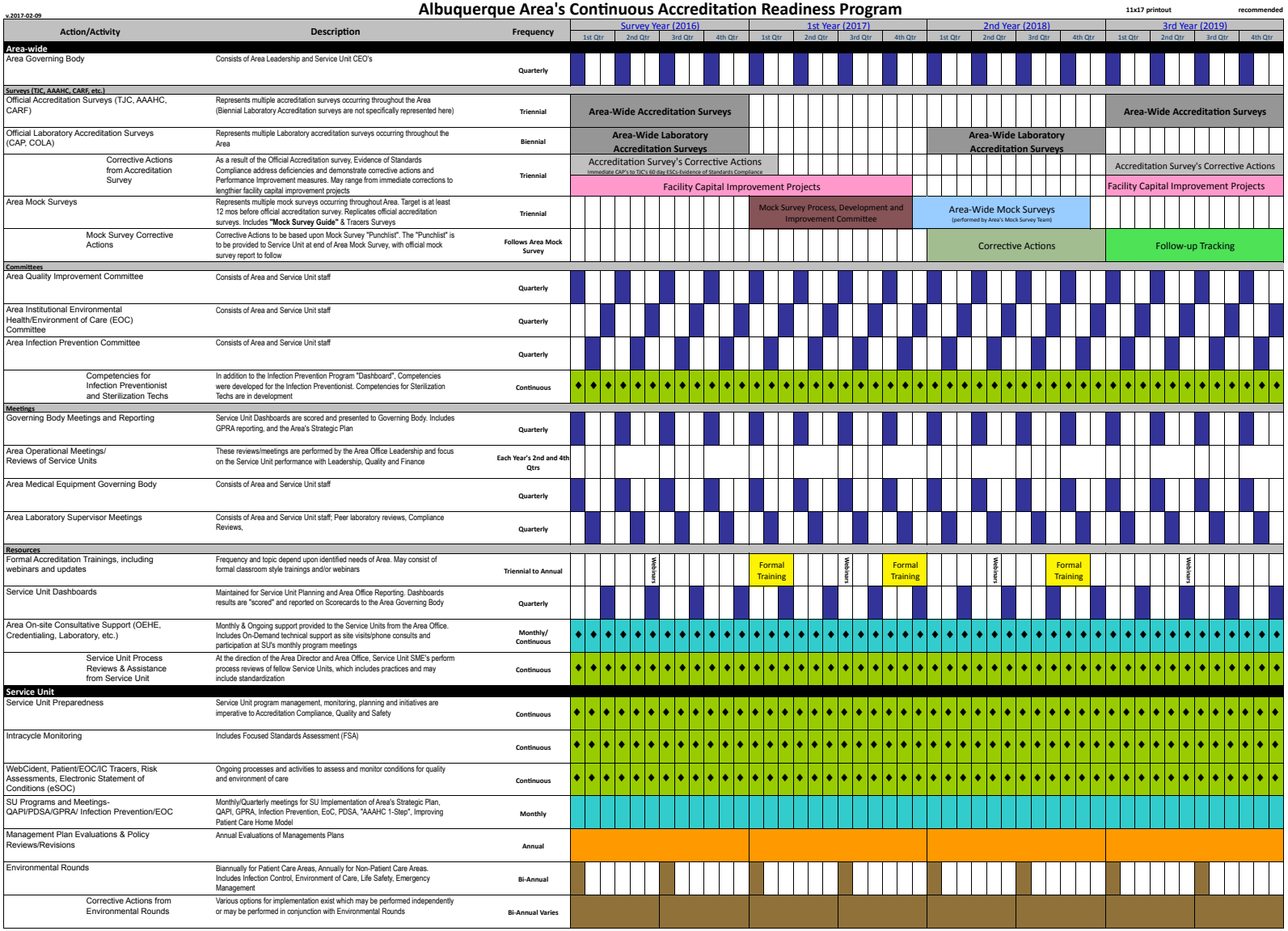
This team approach allows for enhanced planning to resource allocation for program improvements and advancements. We found the team approach is a successful method to address accreditation and competency challenges that have occurred in the past.

CONCLUSIONS/RECOMMENDATIONS

CARP is not perfect, so we continue to monitor, assess, modify, and improve at the SU's and Area Office. Some topics identified with our mock survey process, include adding more disciplines and subject areas, and revising the environment of care/infection control reporting templates for the Area Governing Body. Other Governing Body reporting templates under development include Quality and Laboratory Accreditation. These opportunities for improvement and change may occur through monitoring and assessing: 1) requirements from the Agency, Department, Accrediting Bodies and applicable disciplines and subject areas; 2) customer feedback from the mock survey process; and 3) ongoing interactions and involvement with all staff, as well as through observations and ideas generated through our current delivery of services.

RESULTS

Figure 1: CARP.



Integrated Pest Management in Head Starts

Shelby Foerg

BEMIDJI AREA

INTRODUCTION

The children in the communities we serve need a safe and healthy place to learn, play and grow. Integrated pest management (IPM) is a growing topic on how to create and maintain a healthier school environment by reducing pesticide exposure while keeping facilities pest free. The goal of IPM is to implement multiple physical control strategies that are cost effective, and to reduce the use of chemicals/pesticides to the minimum amount necessary to eliminate and reduce harm to the environment and human health. This project is currently in the assessment phase with short and long term goals to help create, improve, and maintain IPM best practices and policies within the Head Starts for all of the Bemidji Area communities.

METHODS

As a part of the routine Head Start assessments an IPM focused survey tool was added to the process. Assessment tools were created and provided using the following references: Portland Area IPM, Model School IPM Policy, and EPA Managing Pest's in Schools. Facilities had their first IPM assessments in 2015, and follow-up assessments in 2016. Follow-up surveys focused on areas of concern at the facility to determine if the necessary corrections were made or what can be improved.

Using the follow-up survey reports, trends were observed that may help develop training and reference materials to assist our communities in implementing IPM policies, best practices and procedures.

RESULTS

In Summer of 2015 there were an initial 18 IPM assessments done at Head Starts amongst three tribes in Minnesota. Unfortunately due to staff turnover and tribal request only six follow-up surveys within one of those tribes were conducted in 2016.

On a positive note this tribal Head Start program took it upon themselves to correct nearly 80% of the environmental factors that were noted on the initial survey.

On Going trends (2015-2016) observed include:

- Need for individual facility policies, education to staff, contractor evaluations and resources within facilities
- Facilities overall do not need to make major structural changes
- Keeping facilities tidy, clutter free and weed free were the only minor changes that need to be made; one tribe made great strides in this area for improvement

Challenges

- Tribal buy in to implement IPM where it currently does not exist
- Communicating with IPM program managers during surveys
- Very few options to select a contractor

The Leech Lake tribe that has 10 Head Start facilities receives broadcast application of pesticides every three months instead of as needed; the contract has not been negotiated between the tribe and the contractor to have this changed

DISCUSSION

Moving forward follow-up surveys are to be conducted with the annual Head Start surveys starting in mid-2017. Results of those assessments should be expected around Winter 2017 potentially for all the original facilities, as well as some additional facilities to be added. On-going surveys will be conducted by the Bemidji Area DEHS staff.

CONCLUSIONS/ RECOMMENDATIONS

Short Term Goals

- Using the baseline surveys work with communities to correct and develop IPM policies as needed
- Continue to provide feedback and be recognized by the BAIHS communities as a resource to them in the development and maintenance of IPM programs in Head Start facilities

Long Term Goal:

- Expand the IPM surveys outside of Minnesota into Michigan and Wisconsin and continue efforts to develop an IPM culture within Head Start programs across the Midwest

Tools For Addressing Bed Bugs In Rural Alaska

Katie Bante[1], Jennifer Skarada[2], Mary Schneider[3], Racheal Lee[1]

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[2]Bristol Bay Area Health Corporation (Alaska Area)

[3]Alaska Native Tribal Health Consortium (Alaska Area)

INTRODUCTION

Environmental health programs from Alaska's regional tribal health corporations have seen rural Alaskans struggle to deal with bed bugs over the last 5+ years. Access to pest control professionals, treatment equipment, prevention supplies and bed bug expertise, coupled with a high prevalence of shared community spaces make rural Alaskan communities particularly vulnerable to bed bug infestations. BBAHC and TCC staff have been providing outreach to communities in their respective regions of southwestern and interior Alaska to mitigate bed bugs by using an integrated pest management (IPM) approach. Unavailability of tools to carry out IPM efforts has remained a barrier to effective bed bug management. In 2015 Bristol Bay Area Health Corporation (BBAHC) and Tanana Chiefs Conference (TCC) secured U.S. EPA funding to provide tools for bed bug eradication to rural Alaskans statewide, with an aim to determine the viability of this approach and remaining knowledge gaps.

METHODS

Homeowner "toolkits" were developed by BBAHC and TCC with input from an advisory board comprised of pest management professionals, rural Alaska community members, and public health professionals who were in frequent contact with rural Alaskans dealing with bed bugs issues. Research-based efficacy and practicality were key factors behind selection of toolkit items.

Toolkit Items

- Caulk sealant
- Mattress encasements
- Passive monitoring devices
- CimeXa desiccant dust
- Bellows hand duster
- N-95 masks
- Nitrile gloves
- Extra large trash bags
- Flashlight

Each toolkit included educational materials about bed bugs and IPM along with instructions for using each toolkit item safely and effectively. Toolkits were shipped directly to households upon completion of a pre-outreach survey, which was developed to capture Knowledge, Attitudes, and Practices (KAP) of toolkit recipients before receiving a toolkit and several months after employing toolkit items and IPM efforts. Analysis of pre- and post-outreach KAP surveys will be completed at the end of the project.

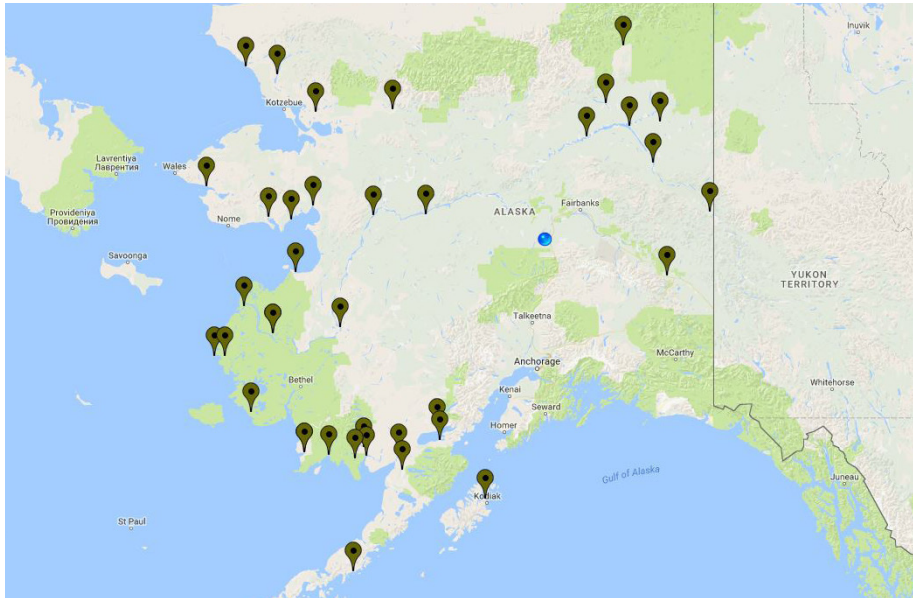
RESULTS

111 toolkits were distributed to homes across 36 rural Alaska communities. Preliminary KAP survey results indicate increased knowledge of eliminating infestations through application of IPM method and increased knowledge or reliable resources for bed bug management information.

Participants identified most useful tools within the kit as mattress encasements and the desiccant dust.

Figure 1. Contents of a bed bug toolkit.

Figure 2. Map of villages that received toolkits.



DISCUSSION

People living in rural areas generally have very limited resources, making it more difficult to manage a bed bug problem than the average homeowner.

- For most participants the toolkits were the only source of assistance received to mitigate bed bug issues
- Preliminary KAP survey results indicate approximately 40% of homes participating did not own a vacuum cleaner
- After receiving toolkits, participants appeared emboldened and were no longer as cautious to discuss bed bugs with project team or fellow community members; some became the local "bed bug expert" by disseminating sound IPM advice
- A small number of participants did not properly utilize toolkit items and did not have the financial resources to replace them, which likely resulted in a prolonged battle with their bed bug infestation

Providing a materials list and stocking tools locally or regionally could be beneficial to other homeowners dealing with bed bug infestations in tribal communities. Education is important, but lack of tools is a major challenge. The project was limited by the amount of funding provided. Similar projects should consider the inclusion of vacuum cleaners within the toolkit; vacuums are an important tool for homeowner IPM efforts against bed bugs.

The project noted that bed bugs remain a taboo subject for many rural Alaskan villages, and this can work to exacerbate bed bug infestations throughout a community. Incorporating peer education via local "experts" might be an important component of future toolkit outreach. Future projects should consider some in-person education regarding how to specifically utilize each item within the toolkit to prevent misinformation about utilizing tools effectively.

CONCLUSIONS/RECOMMENDATIONS

Toolkit recipients have reported increased success in combatting bed bug infestations and preventing future infestations. Successful bed bug management depends on a combination of IPM efforts and behavior change. Behavior change is difficult to affect and assess. This project removed some of the barriers to behavior change by putting necessary tools in homeowners' hands.

Recommendations for similar projects

- Consider how the method of distributing toolkit items (postal delivery versus in-person) will impact how participants use the toolkit
- Ensure education will properly address how to use toolkit items; more frequent follow-up with participants may be necessary
- Determine need for other tools, such as vacuums
- Include capacity-building efforts, such as peer education, to support prevention and mitigation efforts community-wide

The next steps for this project include evaluating pre- and post-outreach KAP survey data to determine most useful tools and remaining knowledge gaps regarding IPM. Year 2 of the project also includes development of village action plans to guide community-wide prevention and mitigation efforts. In Year 2 we will also provide a limited number of mobile heat treatment rooms to assist selected communities in applying thermal treatment to homes and large pieces of furniture.

IPM remains the best approach for preventing and eliminating bed bugs, and the provision of tools to carry out these measures is an important component in areas of the country where resources are limited or non-existent.

Animal Control Ordinance Development

Sarah Snyder, George Carroll

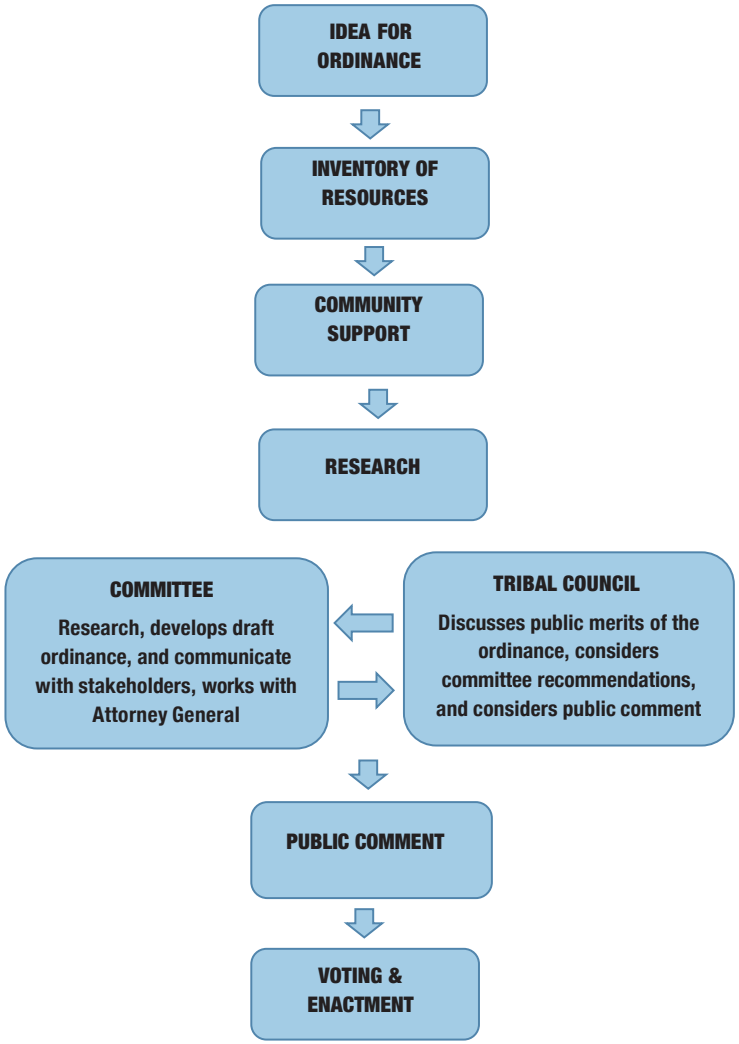
Phoenix Area

INTRODUCTION

Public health policy through an animal control ordinance is an important protective factor for dog bite-related injuries and diseases such as rabies and Rocky Mountain spotted fever (RMSF). Animal control is a challenge for some tribal communities, where a high proportion (over 80% in some communities) of free-roaming dogs increase public health concerns over dog bite injuries and disease exposure. The development of an animal control ordinance is often difficult and unclear. The purpose of this poster is to describe one eastern Arizona tribe's process for developing an animal control ordinance that was enacted in 2016.

METHODS

Steps to Develop an Ordinance



RESULTS

Application of Steps

IDEA FOR ORDINANCE	
Event Trigger	**Positive Human RMSF Case (2012)**
Supporting Data	Increase in number of bite reports (2008-2013) Dog observation survey (n=440) Free roaming 82% Unneutered (male/female) 79% Tick infested 38%
INVENTORY RESOURCES	
Ordinance	Draft from 1997
Resolutions	1973 Tribal Resolution focused on vaccinations and quarantine
Policies	Three villages had a policy date ranging from 1981, 1983, and 2011
Stakeholders	Veterinary, Wildlife, Natural Resources, Rangers, Police, Health, Emergency Services, Environmental Health, and Tribal Council
COMMUNITY SUPPORT	
Conduct community survey(s) to gauge knowledge, attitudes, and beliefs	Total members surveyed = 228
	Have you been bitten? 47% = yes
	Are you a dog/cat owner? 69% = yes Do you keep your pets tied up? 7% = yes Would you be willing to spay/neuter your pets? 96% = yes
	Should immunizations be required? 98% = yes Should registration be required? 89% = yes Should the tribe approve an ordinance? 94% = yes
	Should the tribe fund an animal control program? 91% = yes
RESEARCH	
Other tribes	Reviewed 37 other tribal ordinances
COMMITTEE and TRIBAL COUNCIL	

IDEA FOR ORDINANCE	
Event Trigger	**Positive Human RMSF Case (2012)**
Meetings	Core Group meetings (15+) Village leader meetings (3) Law Enforcement Task Force meeting (8) Legal Counsel review (3)
Work with Council	Obtain approval for committee
PUBLIC COMMENT	
Outreach	Community Presentations (8) Radio talk show (2) Newspaper articles (1) YouTube interview: https://www.youtube.com/watch?v=iBEP62qS-g0
Comment Period	60 days
VOTING and ENACTMENT	
Tribal Council	Presentation to Council and unanimously passed on April 26, 2016
Grace period	Six month focus on community education and outreach
Implementation	Development of the Animal Control Advisory Board Building the Animal Control Program

DISCUSSION

The development of an ordinance can take many years and involve the efforts of several discipline.

CONCLUSIONS/RECOMMENDATIONS

The experiences and process employed by one tribe's successful enactment of an animal control ordinance resulted in several lessons learned:

- Use local public health data to build your case: local data related diseases posed by animal overpopulation (e.g. rabies statistics, wildlife rabies trends, tickborne disease case numbers) or dog bite-related injuries (e.g., # of ER visits, hospitalizations, deaths, treatment costs) will help local decision makers to act
- Get community support: survey the community to gauge support of ideas and practices; consider questions to assess attitudes regarding fees (e.g. vaccinations, spay/neuter procedures), as well as support of various policies such as limits on the number of animals a person can own, or willingness to support a leash law
- Patience and perseverance: This ordnance was first started almost 40 years ago; it was picked-up and put down many times' an undertaking like this is a group effort with many stakeholders, if possible have a dedicated position to coordinate the work

Healthy Homes

EH issues associated with housing on tribal lands present an ever-increasing set of complex challenges to be addressed. A few examples of EH related issues of concern are: lead exposure, asbestos exposure, mold, disease vectors, lack of potable water, radon gas, solid and liquid waste disposal, injuries (e.g. fires, electrocution, and slips/trips/falls), chronic chemical exposures, and asthma triggers.

Many programs focus on capacity building and education related to reducing asthma attack rates, mold and moisture problems, chemical exposure, and other events that are documented through health surveillance systems and through a home inspection program. Home inspections identify threats to the health of occupants and the DEHS staff focus on identifying and eliminating related risk factors. Projects with an emphasis on healthy homes conducted in 2016 can be found on the following pages.

Elevated Blood Lead Level Investigation – Shiprock District

Shirley Peaches, Tish Ramirez, Richard Skaggs

NAVAJO AREA

INTRODUCTION

Lead (Pb), a toxic heavy metal, is an environmental contaminant that causes serious health problems in the U.S. The threat is especially dire for children as there is no safe blood level for Pb. Low levels of Pb are shown to affect a child's intellectual development, behavioral development, and their ability to concentrate.

Humans are exposed to lead from numerous sources and many pathways including air, food, dust, soil and water. The common sources of Pb exposure include the use of products containing lead, traditional folk remedies, cosmetics, artisan ceramics, environmental emissions containing lead and occupations involving Pb use such as certain aspects of jewelry making.

In September 2016, the Shiprock DEHS received a lead investigation request from the Northern Navajo Medical Center for a 1-year old child. At the time of the investigation, the child's blood Pb level was 13 µg/dL. The child resided off reservation in an early 1900 Victorian-styled two story house.

METHODS

- ATSDR form "Taking an Exposure History" used to interview family
- LeadCheck™ Swabs were used as a presence/absence test for general interior surfaces (photos)
- A portable X-Ray Fluorescent (XRF) analyzer was used to analyze Pb in painted surfaces
- Water and soil were tested by an environmental testing laboratory
- HUD reference "Collecting Soil Samples for Lead Determination" was used as a protocol for collecting soil samples

RESULTS

The XRF analyzer identified multiple surfaces throughout the house that were positive for Pb.

- Levels in paint on the interior walls of the child's bedroom and on interior window sills were 1.7 – 1.8 mg/cm^2 and 11.4 mg/cm^2, respectfully
- Levels in excess 1 mg/cm^2 were found throughout the house on the interior window frames and lower walls; similar levels were identified on a food storage cabinet and the interior walls of the kitchen

Water and Soil Samples

- Levels in water samples were 0.0008 – 0.0027 mg/L (0.8 – 2.7 ppb)
- Levels in residential soil were 18.4 mg/kg – 368 mg/kg (18.4 ppm – 368 ppm)

DISCUSSION

The HUD/EPA standard for Pb in painted surfaces is 1 mg/cm^2 or less. Painted surfaces on the interior of the home were the most likely source of lead contamination. The dusty ceilings and carpet in the child's bedroom were sources for lead contaminated dust. Pb test results were below actionable thresholds for water and soil.

CONCLUSIONS/RECOMMENDATIONS

- Encase the walls, ceiling, flooring, and window frames with high lead readings
- Reduce dust in the home with dust-free cleaning methods (damp cloth, steam cleaning of carpet and furniture) and use of HEPA bags for vacuum cleaners
- Caulk around windows and openings in walls to limit entry of dusts in the home
- Handwashing before eating was strongly encouraged
- Continue to monitor elevated blood lead levels
- Consider testing all other home occupants for elevated blood Pb levels


OKLAHOMA
LORDS OF THE PLAINS
WORLD WAR II
"WE WERE THERE"
KOREAN WAR
"WE WERE THERE"

Fire Safety Collaboration

Dustin Joplin, Katie Tompkin

Oklahoma City Area

INTRODUCTION

The Division of Environmental Health Services (DEHS) for the Oklahoma City Area (OCA) had the unique opportunity to collaborate with the Oklahoma American Red Cross (OARC) to implement a fire safety project with OCA tribal partners. As part of the collaboration, the OARC provided the DEHS program with 250 free smoke detectors to be installed in tribal homes where children resided. In addition, the project would target specific counties in Southwest Oklahoma, based off of injury data that showed a higher number of fire related injuries and deaths. This project was a great opportunity to not only provide fire safety detection equipment and education, but also to determine the level of fire safety preparedness in tribal member homes.

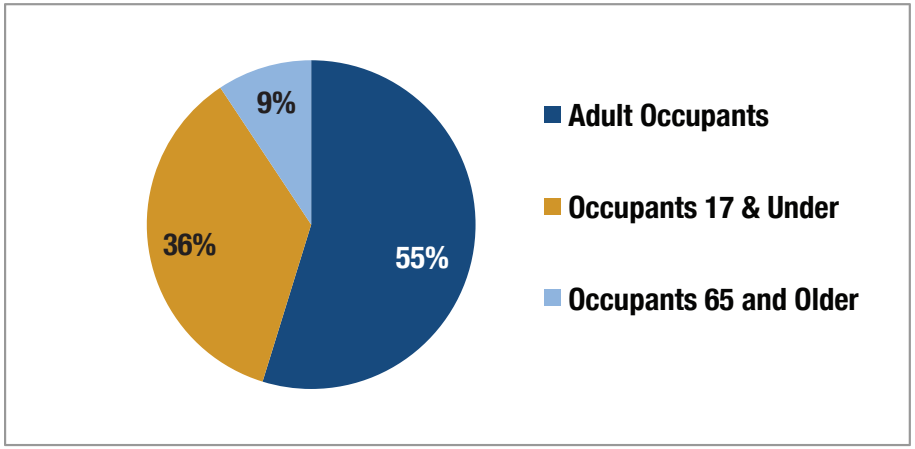
METHODS

Before the smoke detectors could be installed, the Kiowa Tribe Head Start Program (KHS) and DEHS staff had to receive proper installation training, data collection and fire escape plan implementation from the ARC representatives. In addition, KHS personnel compiled a list of families in need of a smoke detectors. To assist in capturing vital pre-implementation injury prevention data, DEHS staff developed a data collection form to supplement the ARC form. Teams of 2-3 persons from DEHS and KHS divided the list of families and began home visits, which were located in Kiowa, Caddo and Comanche counties. A typical home visit included smoke detector installation, data collection, fire safety training and development of a family fire escape plans.

RESULTS

Post-installation data showed that 250 smoke detectors where installed in 110 homes, which provided detection to 429 persons (Figure 1). In addition, the data gathered showed that of the 116 smoke detectors that were present before the project was implemented, that only 39 were operational.

Figure 1: Age of Recipients.



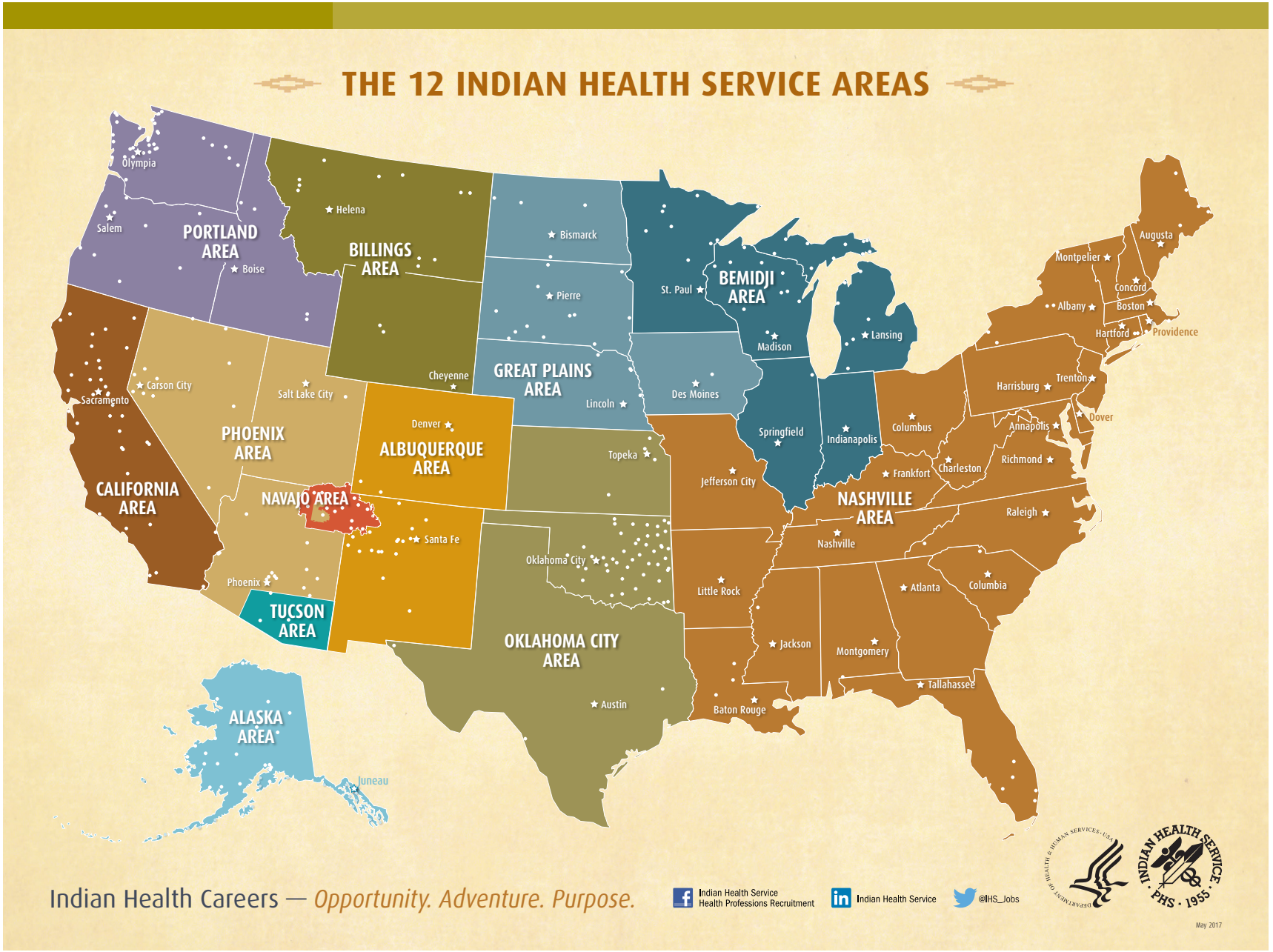
Additional metrics showed that there were 36 persons with disabilities, including 12 persons in need of a bedside alarm for deaf or hard of hearing individuals. Fire escape plans were developed and practiced in all 110 homes.

DISCUSSION

It is important to note, that many homes included in this project had a smoke detector in place; however, the vast majority of them were not operational. From feedback obtained from field staff, most of the homeowners did not have a fire escape plan in place, but were very receptive to the on-site training that they received as part of this project.

CONCLUSIONS/RECOMMENDATIONS

The data collected showed that the majority of tribal homes are not effectively guarded against the potential of fire. This project clearly shows the need for a continuous home fire safety program within tribal communities, such as reinstating the IHS Sleep Safe program.


THE 12 INDIAN HEALTH SERVICE AREAS
Olympia
Salem
PORTLAND AREA
Boise
Helena
BILLINGS AREA
Bismarck
Pierre
GREAT PLAINS AREA
Cheyenne
Lincoln
Des Moines
St. Paul
BEMIDJI AREA
Madison
Lansing
Augusta
Montpelier
Concord
Albany
Boston
Hartford
Providence
Harrisburg
Trenton
Dover
Annapolis
Columbus
Springfield
Indianapolis
Carson City
Salt Lake City
Sacramento
PHOENIX AREA
Denver
ALBUQUERQUE AREA
Topeka
Jefferson City
Frankfort
Charleston
Richmond
CALIFORNIA AREA
NAVAJO AREA
Santa Fe
NASHVILLE AREA
Raleigh
Nashville
Oklahoma City
Phoenix
TUCSON AREA
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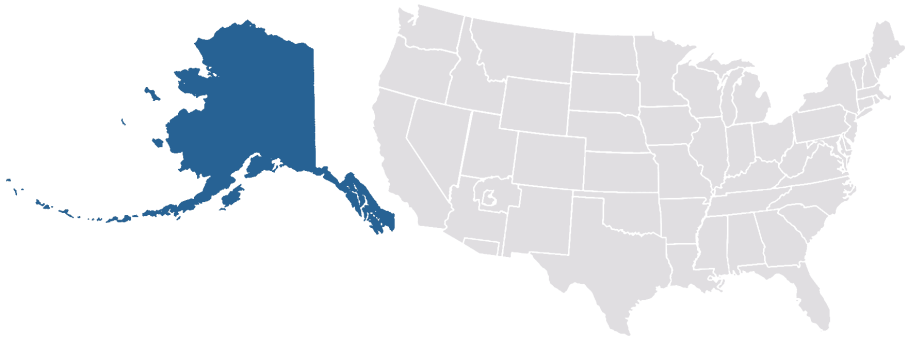
Area
DEHS
Programs

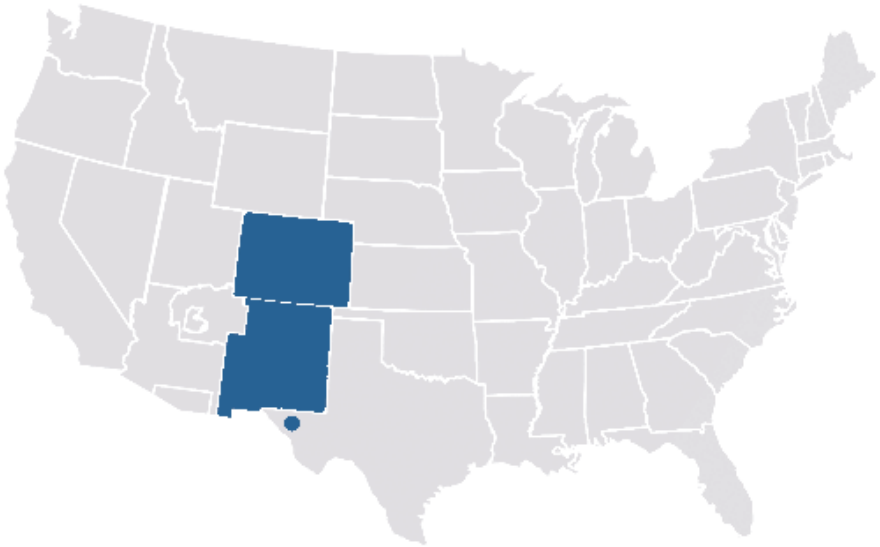
Alaska



EH programs in the Alaska Area are all tribally managed under the authority of the Indian Self-Determination and Education Assistance Act (Public Law 93-638), as amended. Seven regionally-based EH programs serve a specific geographical area. These organizations include the South East Alaska Regional Health Consortium (Sitka), the Bristol Bay Area Health Corporation (Dillingham), the Yukon- Kuskokwim Health Corporation (Bethel), the Norton Sound Health Corporation (Nome), the Maniilaq Association (Kotzebue), the Tanana Chiefs Conference (Fairbanks), and the Alaska Native Tribal Health Consortium (ANTHC, of Anchorage).

Typical services include assistance related to water, sewer, solid waste, air, and vector control activities. Other services include disease outbreak investigations, support for community- based clinics related to infection control and safety, and IP efforts. Additionally, several of the tribal EH programs operate State of Alaska certified drinking water laboratories that assist communities in ensuring the safety of their drinking water and ensuring compliance with state and federal regulations.

The regional EH programs, together with ANTHC, offer communities and tribes a comprehensive set of environmental health services that protect and enhance the well being of AI/ANs.

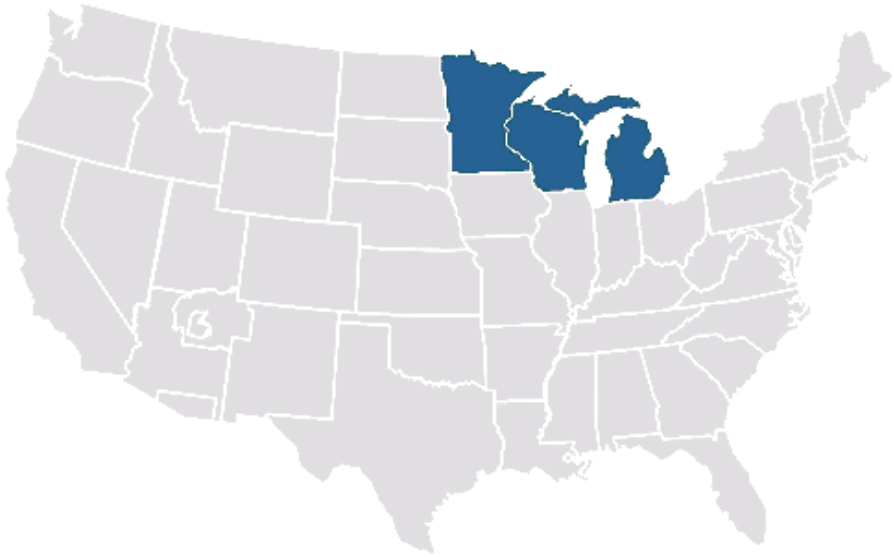


Albuquerque

The Albuquerque Area DEHS Program serves 27 federally recognized tribes in Colorado, New Mexico, Texas, and Utah. The Area's service population of over 100,000 members comprises 20 Pueblos, three Navajo Nation Chapters, two Apache Reservations, and two Ute Reservations. The Area's EHS staff is stationed at the Area Office and six Service Units. Professional positions include the DEHS Director, District and Service Unit Environmental Health Officers, Environmental Health Technicians, an Industrial Hygiene and Safety Manager, and an IEH Specialist.

The Albuquerque Area DEHS is responsible for a wide range of general EH services, including surveys, investigations, consultations, assessments, and technical assistance. The DEHS staff provide training and community outreach on a broad range of topics. Additional services are provided in IP and IEH. The IEH Manager serves as the Area Emergency Management point of contact, providing needed coordination in emergency situations. Staff often participates in national program work, as well as working in partnership with many tribal, federal, state, county, and local groups.

The Albuquerque Area DEHS implements creative methodologies to provide high quality services to their tribal partners. The Area is committed to program excellence and staff expertise. With consideration of tribal needs and priorities, extensive long range planning is conducted to ensure the provision of necessary and timely services. The Albuquerque Area DEHS Program strength is in its staff's commitment to continuous program, team, and individual improvement, collaborative partnerships, and innovation in providing quality services to tribes in a myriad of programmatic areas.

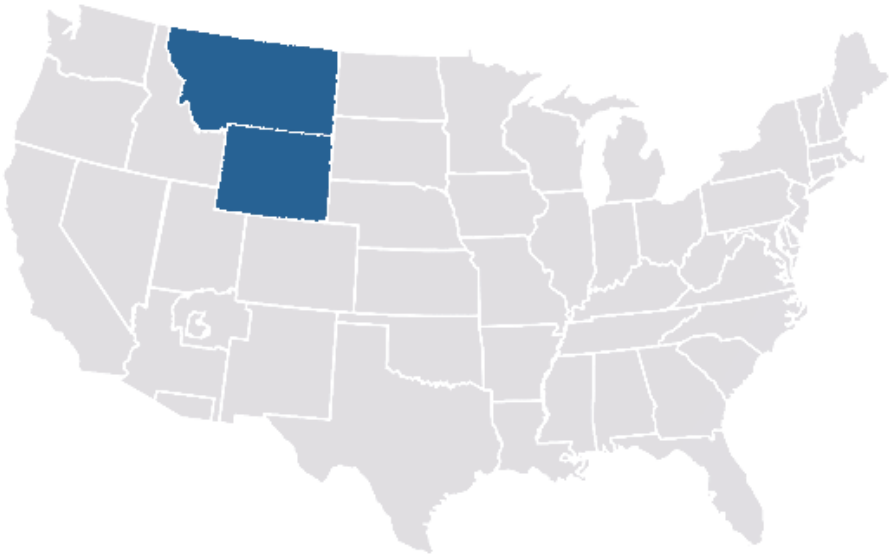


Bemidji

The Bemidji Area DEHS program serves 32 federally recognized tribes and over 100,000 American Indians in an area covering 5,183 square miles throughout the states of Minnesota, Wisconsin and Michigan. Staff includes five field EHS, one staff EHS, two District EHS, one DEHS Director, and one Area IEH Specialist within four offices. Both the Area office and a district office is located in Bemidji, Minnesota. The second district office is located in Rhinelander, Wisconsin and there is a field office in Ashland, Wisconsin.

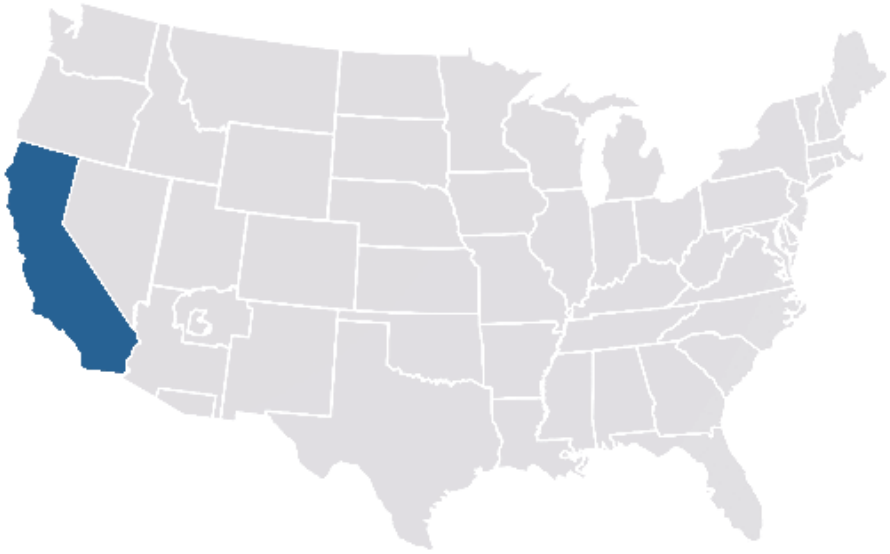
The Bemidji Area provides EH services in the form of surveys, investigations, testing and monitoring, training, policy development, program support and facility plan reviews. This is done in effort to improve food safety, solid and liquid waste management, water quality, hazard communication, epidemiology, vector control, recreation/celebration sanitation, indoor/outdoor air quality, home sanitation and safety, and childcare environments. The DEHS is also responsible for specialized services in injury prevention, environmental sustainability and institutional EH.

The Bemidji Area emphasizes: a shared decision making process to champion the systems change necessary to create vital, healthy tribal communities by preventing environmentally related diseases and injury through environmental health practices.



Billings

The Billings Area DEHS serves nine tribes (totaling 70,000 people) on 8 reservations throughout Montana and Wyoming. Fully staffed, the Billings Area DEHS Program consists of the DEHS Director, an Area Environmental Health Officer, an IEH Officer and an IP Specialist. The Billings Area has three direct service tribes, four Title I tribes that have contracted the DEHS Program and two Title V tribes that have compacted all IHS services. Field staff in the area include three federal EHSs, five tribal EHSs, and two tribal EH Technicians. Although the tribes and reservations of Montana and Wyoming are diverse in their cultures, landscapes and communities, the Billings Area DEHS Program seeks to provide comprehensive services that address environmental health, including the two specialty areas of IP and IEH. The focus of the program includes food safety, vector control, health and safety at schools, Head Starts, IHS hospitals and clinics and other community facilities, technical assistance to the hospital and clinics safety officers, and prevention of injuries from falls, motor vehicle crashes, assaults and suicides. Implementation of the DEHS Program consists of technical assistance, training, health and safety inspections, and communication and coordination between the tribes, other government agencies, and the IHS.

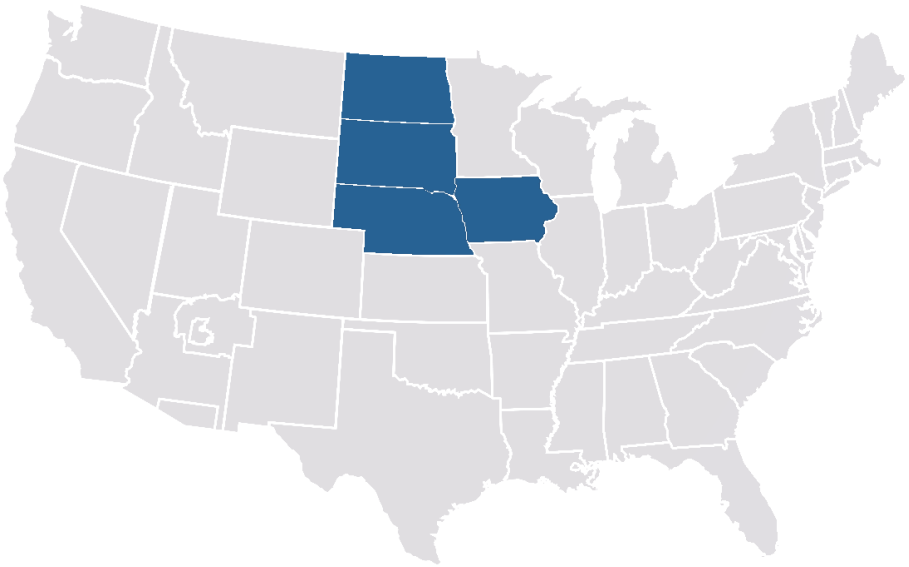


California

The California Area serves approximately 104 federally recognized tribal governments in the state of California who represent a service population of 151,242 persons in nearly 1685 facilities. The California Area DEHS is comprised of career tribal employees, federal civil service and PHS Commissioned Corps Officers. Staff directly employed by the IHS are stationed in the Area office located in Sacramento, district offices located in Redding and Escondido, and field offices located in Clovis and Ukiah. All of our staff are registered environmental health specialists who possess a bachelor's degree or higher in environmental health or a related discipline.

The majority of services provided by California Area DEHS fall into the category of general environmental health. Technical consultation, training, surveillance and investigative services are provided in the following program areas: children's environmental health, communicable disease control and epidemiology, food safety, recreational water, community facilities and institutions, operation and maintenance sanitation facilities and solid waste management. The California Area DEHS also provides IEH services to support partner tribal programs in their efforts to reduce chemical, biological, radiological and ergonomic work place hazards. Healthcare accreditation, infection control and compliance are priorities for our IEH Program.

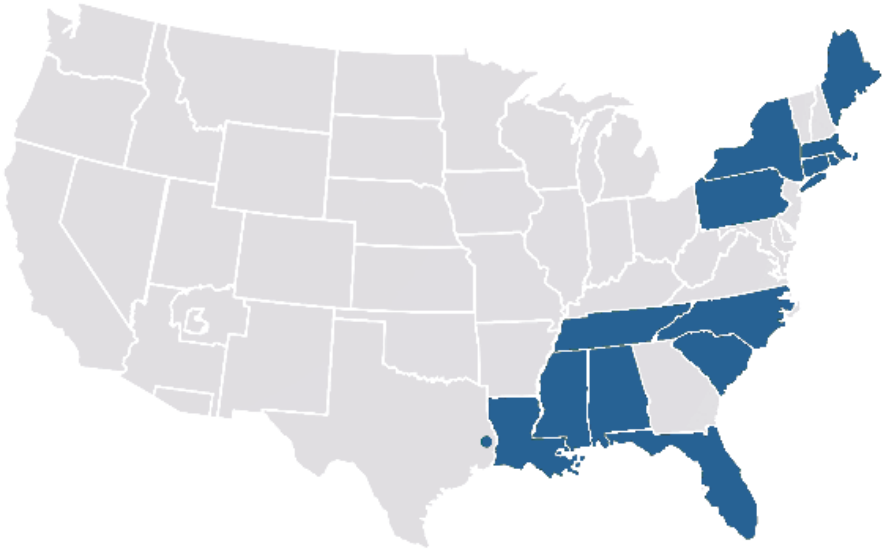
The California DEHS injury prevention program is dedicated towards increasing the capacity of tribes to reduce injury problems within their community. Our program currently provides technical assistance, funding and other resources to tribes for use in the collection of injury data, training and the development and implementation of interventions based on best practices.



Great Plains

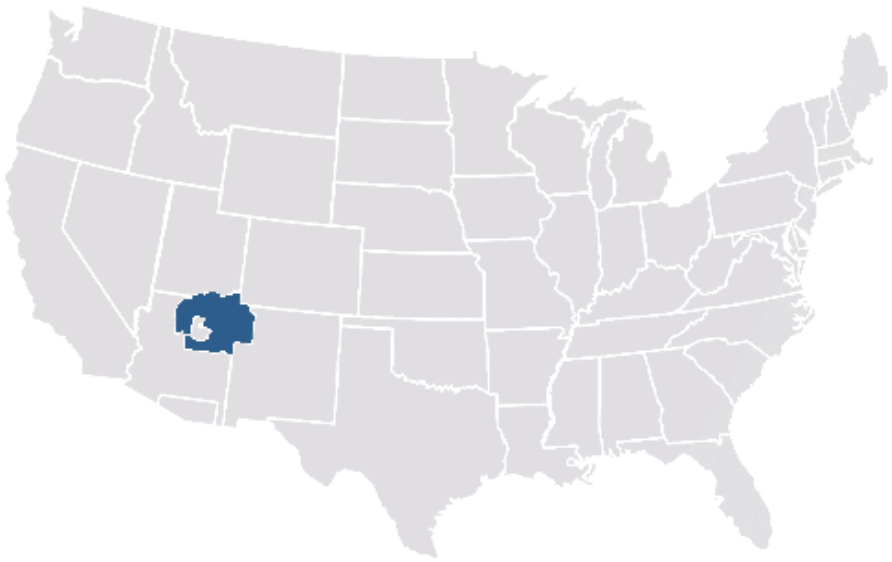
The IHS Great Plains Area encompasses 18 tribes in four states (Iowa, Nebraska, North Dakota, and South Dakota) totaling 281,459 square miles and is the fifth largest Area in the IHS. The DEHS is one of three divisions (DEHS, DSFC, and Facilities Management) within the Great Plains Area OEHE. The DEHS program is comprised of career tribal employees, federal civil service, and PHS Commissioned Corps Officers. At the Area level, Great Plains has a DEHS Director, an Area IP Specialist, and a Staff Environmental Health Specialist. In addition the DEHS Program funds one IEH Officer which is managed through the Area Chief Medical Officer and works closely with the compliance program. At the district level, the DEHS Program has three staff located in Minot, North Dakota; Pierre, South Dakota; and Sioux City, Iowa. At the field level, the program has 13 offices with Field EHS and/or IP Specialists. Seven of the field offices are contracted programs which are managed by the tribes. The other six field offices are direct service programs and staffed with Civil Service or PHS Commissioned Corps staff. All DEHS district and field staff are responsible for providing environmental health and safety surveys of facilities listed in the WebEHRS database, technical consultation and trainings to tribal programs and beneficiaries, and carrying out epidemiological investigations as necessary. The remaining facility survey work is covered by the IEH Officer. District and field staff spend approximately 60% of their time working on general EH issues and 40% of their time engaged in IP activities related to data collection and assisting communities with implementing proven interventions. Injuries have had a significant negative impact on the health of Great Plains Area communities and as a result, IP is a significant focus for the DEHS Program.


OLE·TRIBE·OF·FLORIDA
PRE-SCHOOL
ES-CO-NEC-KV



Nashville

The Nashville Area serves a vast region across 14 states, 29 tribes and three urban areas serving an AI/AN population of approximately 52,000. Fourteen states are covered: Alabama, Connecticut, Florida, Louisiana, Maine, Maryland, Massachusetts, Mississippi, New York, North Carolina, Rhode Island, South Carolina, Tennessee and Texas. Staff includes one Director and two EHOs. The Nashville Area DEHS provides EH training courses that train both federal and tribal employees in the FDA Food Code, hazard communications/bloodborne pathogens, and WebCident. Annual surveys of numerous facilities, including casinos, hotels, pools, food service venues, and healthcare facilities are conducted. The Area IEH Specialist is part of a comprehensive team that conducts The Joint Commission and Accreditation Association of Ambulatory Health Care mock surveys to ensure federal facilities are ready for accreditation. All Area federal facilities except the newest Service Unit have received and maintained accreditation. This Service Unit will be scheduling their first accreditation survey soon. The EHOs are Project Managers for IP grants.



Navajo

The Navajo Area DEHS is a large comprehensive EH program serving more than 250,000 members of the Navajo Nation and the Southern Band of San Juan Paiutes. EH services are provided to Indian communities on reservations encompassing more than 25,000 square miles of land in northeast Arizona, northwest New Mexico, and southern Utah.

The DEHS staff plan and provide EH programs and services in many areas such as food safety, prevention of elder falls, motor vehicle injuries, emergency preparedness, water and sewer sanitation, and prevention of zoonotic diseases including plague, rabies, hantavirus, and West Nile virus. Public health assessments in the form of facility surveys, training, investigations, sampling, and technical assistance (i.e. participation on facility and community committees, facility plan reviews) are just a few services provided by the program to tribes.

The Navajo Area DEHS also provides an IP Program and IEH services through the Division of Occupational Health and Safety Management (DOHSM). The IP Program provides services that address traumatic injuries that can often greatly affect communities while the DOHSM deals with IEH issues in healthcare facilities. Both programs rely heavily on assessments, surveillance, and best practice interventions to target health risks in communities. Training is also offered to build tribal capacity for IP and occupational health and safety issues.

These programs and services are provided through multiple offices including the Navajo Area Office in Window Rock, Arizona; three district/field offices in Fort Defiance, Arizona, Shiprock, New Mexico, and Gallup, New Mexico; and field offices at three Service Units in Kayenta, Arizona, Many Farms, Arizona, and Crownpoint, New Mexico. The professional, technical, and clerical staff of the Navajo Area DEHS and tribal EH programs work as a team in partnership with tribes to promote healthy environments in Indian communities.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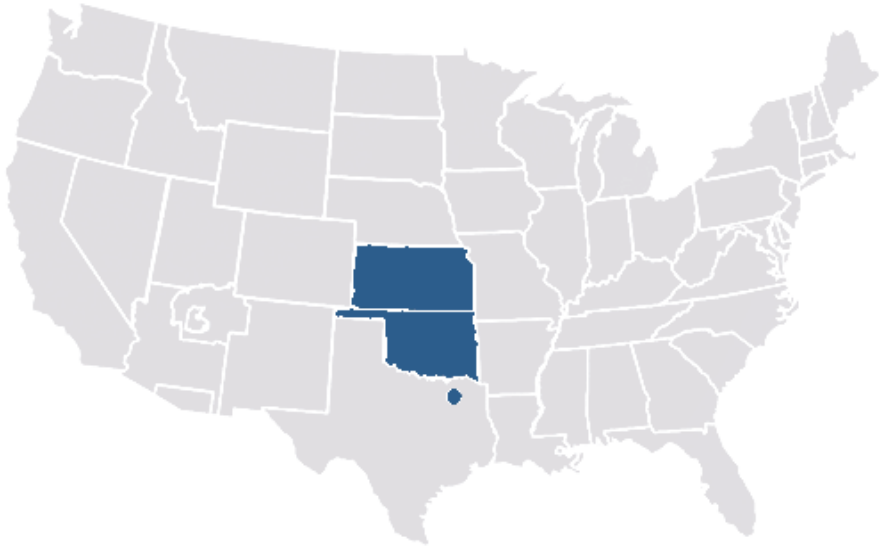
IHS

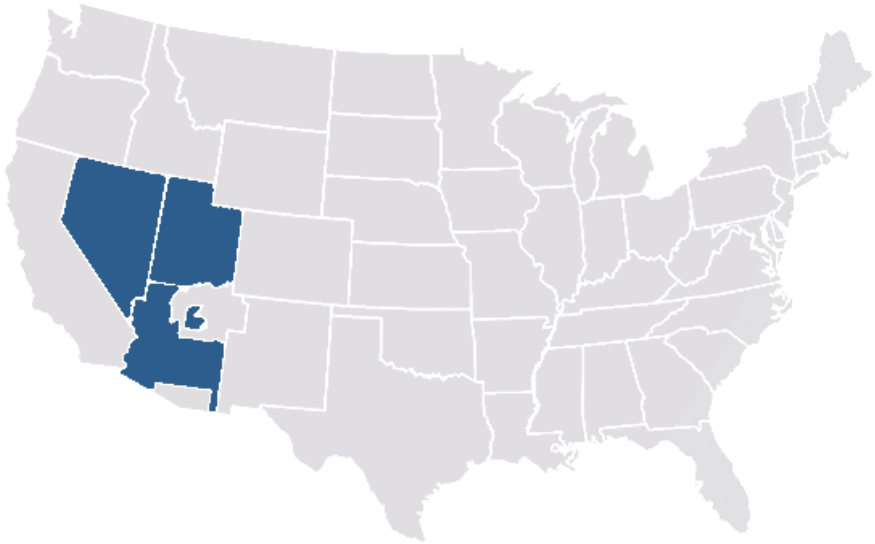


Oklahoma City

The IHS Oklahoma City Area serves 43 tribes with a service population of nearly 350,000 AI/AN people. The service area covers the States of Kansas, Oklahoma, and Texas. The DEHS provides direct EH support services to 31 Tribes and has five field offices located in Okmulgee, Shawnee, Clinton, Lawton, and Pawnee, Oklahoma, and one in Holton, Kansas.

The DEHS Program includes eleven staff members: one Director, one IEH Specialist, one Injury Prevention Specialist, one District Environmental Health Officer, and seven field staff, that provide a wide range of EH services that include, but are not limited to: food safety, solid and liquid waste management, water quality, hazard communication, epidemiology, vector control, emergency management and response, infection control, recreation/celebration sanitation, indoor/outdoor air quality, home sanitation and safety, Head Start and childcare food and safety, in addition to meeting a wide selection of specific training needs.

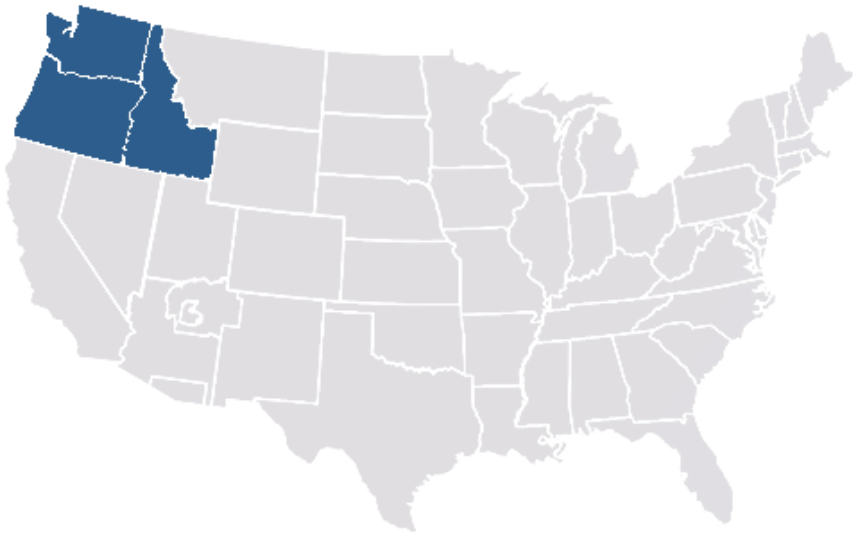
The DEHS is also responsible for specialized services in the areas of IP and IEH. The goal of the Oklahoma City Area IP program is to reduce the incidence and severity of injuries and deaths within the tribes they serve and work in collaborations with. IP services include training, partnership building, and IP grant funding technical assistance. In addition, an Area IP specialist provides direct oversight to ensure an effective implementation and completion of established program goals and objectives. Program objectives are met by conducting injury surveillance surveys and by identifying problem areas that can be solved through direct intervention and through community activities. The IEH Program assists healthcare facilities provide a safe environment for patients, visitors, and staff. The IEH Specialist provides direct technical assistance to safety officer and committees, infection control officers and committees, facilities management and leadership. In addition, the IEH Specialist is responsible for conducting annual radiation protection surveys of all x-ray equipment within IHS and tribal hospitals and clinics to ensure safe levels of radiation are used and maintained. Also to conduct comprehensive industrial hygiene surveys within those facilities to ensure that a safe environment is being achieved and maintained.



Phoenix

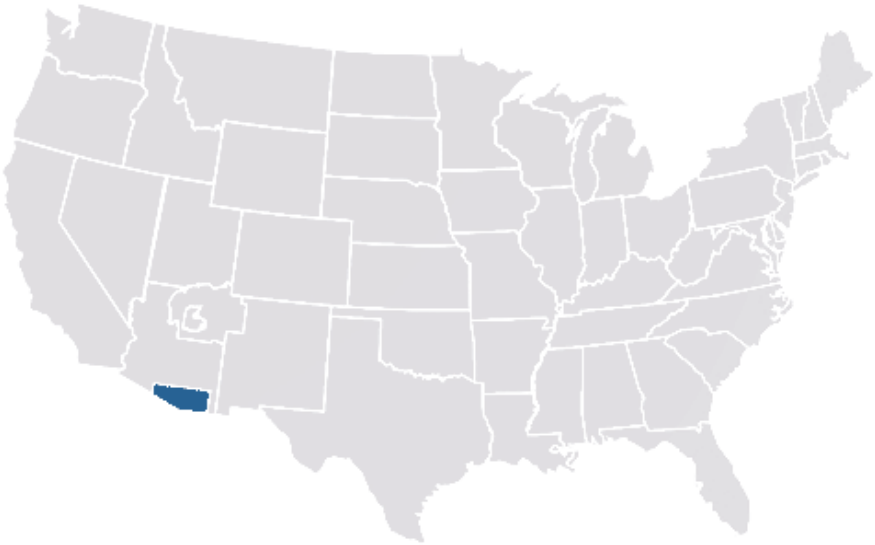
The Phoenix Area serves 46 tribes/tribal organizations with a combined population of nearly 170,000 and over 2,000 facilities in four states (Arizona, California, Nevada, and Utah). A cadre of EH professionals accomplish the work of the DEHS. The staff is located in the Area Office; three district offices; and nine Service Units/field offices.

The DEHS provides a breadth of technical and consultation services that include facility hazard assessments, policy development, investigations, and training. The diverse technical scope of the program includes food sanitation, vector control, water quality, waste management, air quality, infection control, and occupational safety. Specialized services are provided in IP and IEH. The IP services include epidemiology, training, partnership building, and the development of proven intervention strategies for community-based injury prevention. The IEH services include industrial hygiene, occupational health, emergency preparedness, and healthcare accreditation consultation.



Portland

The IHS Portland Area provides a health system for an estimated 150,000 American Indian residents of Idaho, Oregon, and Washington. Health delivery services are provided by a mix of health centers, health stations, preventive health programs, and urban programs. The Portland Area DEHS works in partnership with tribes, the six Service Units, and other organizations/agencies to implement a comprehensive service delivery model that includes the following: monitor and assess environmental hazards and conditions in AI/AN homes, institutions, and communities; educate and inform residents about EH issues; develop policies for addressing EH and injury concerns; evaluate programs, plans, and projects; and conduct projects and studies to determine best practices and solutions to environmental public health problems. The outcomes and impacts of these services control and prevent environmentally related disease and injury and improve personal and overall community wellness. The Portland Area DEHS Program has enhanced services in pesticide safety through an interagency agreement with EPA Region X. In the Portland Area, many of the 43 tribes have assumed all or a portion of the DEHS Program under the authority of the Indian Self- Determination and Education Assistance Act (Public Law 93-638, as amended). The direct service tribes are provided services through a DEHS Director and IEH Specialist at the Area Office as well as EHS positions in district and field offices. This organizational structure maximizes the delivery of direct services to 23 tribes. The Portland Area IEH Officer also serves as the Area Emergency Management Coordinator, providing services in emergency preparedness and response and continuity of operations planning.



Tucson

The Tucson Area Environmental Health Services Branch (EHSB) serves the Pascua Yaqui Tribe which has a total population of about 20,000. The EHSB program consists of an Environmental Health Director and an Environmental Health Officer. The program strives to provide comprehensive EH support by including IP, industrial hygiene, and general EH areas. The specific services include, but are not limited to, food safety, vector-borne disease surveillance, accreditation assistance, life safety surveys of public buildings, child safety seat installations, exposure analyses, and clinical referrals pertaining to environmental health.

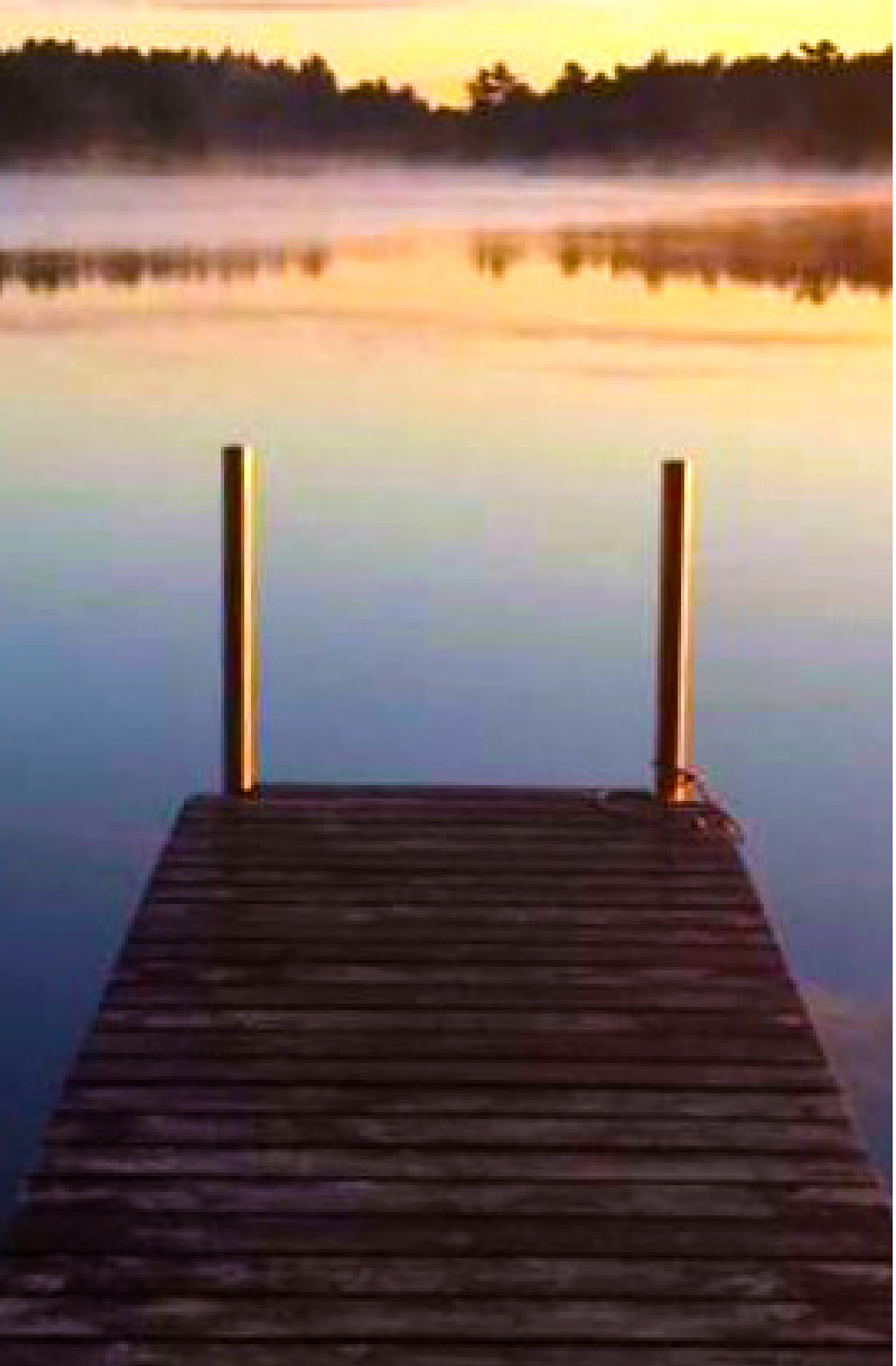
The EHSB staff also provide training in bloodborne pathogens, food handling, and multiple vector related issues. The IP and industrial hygiene sections of the program assist the tribe by collecting injury statistics and exposure assessment data to determine the most appropriate evidence-based intervention strategy. The intent of which is to both preserve health and wellness as well as reduce morbidity and mortality. Great emphasis is also placed on strengthening external partnerships (i.e. collaborating with federal, state and local stakeholders) and building capacity within the respective tribal programs.

CAPT Kates conducting air monitoring for formaldehyde in a tribal member's home

Looking Ahead *into* 2017

For 2017, the DEHS looks forward to accomplishing the following:

- Improving the usability and data quality of the DEHS WebEHRS
- Successful implementation of the TIPCAP monitoring contract to support tribal and IHS injury prevention projects and programs
- Improving the WebEHRS reporting functions of the 2016 through 2020 Environmental Surveillance performance measures to assist DEHS programs in developing meaningful interventions
- Complete the remaining strategic vision element, “develop an operational model for DEHS that describes the core services all IHS Area programs should provide”
- Identify a plan for the future of the Indian Health Service Injury Prevention Specialist Fellowship advanced training
- Select at least one Indian Health Service (IHS) Environmental Health Officer to begin the two-year Uniformed Services University of the Health Sciences/IHS IEH MSPH and residency program



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The Division of Environmental Health Services

–of the–

INDIAN HEALTH SERVICE
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Annual Report **2016**

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Environmental Health Services

● *Healthy Environments = Healthy People* ●