

ANNUAL REPORT 2017

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.”

The Division of Environmental Health Services

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

ANNUAL REPORT 2017

This Annual Report for Calendar Year 2017 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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On the cover: The 2017 photo contest winner...
CDR Michael Box testing welding exhaust ventilation
at the Alaska Native Medical Center, taken by Lore'
Olson, Safety & Environmental Health Officer
(Alaska Area; March 2017)



Message from the Acting Division Director

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

Division of Environmental Health Services

It is my honor to present the 2017 Division of Environmental Health Services (DEHS) Annual Report. This report covers activities and projects conducted by Indian Health Service (IHS) and Tribal/Corporation environmental health partners throughout the United States. 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.

MESSAGE FROM THE ACTING DIVISION DIRECTOR

2017 was a year of unexpected events. According to the National Hurricane Center, “Overall activity in the Atlantic basin in 2017 was well above average, with 17 named storms, 10 hurricanes, and 6 major hurricanes.” Hurricanes Harvey, Irma, and Maria left devastation in their paths. At least 10 IHS and Tribal PHS Environmental Health Officers deployed to support DHHS/FEMA hurricane recovery efforts. Officers were deployed to various locations and missions in Texas, Puerto Rico, and the U.S. Virgin Islands; many deployed for four weeks or longer. I am proud of the support our program provided during these national recovery efforts and recognize the hard work of those who did not deploy and continued to provide services.

We accomplished many of the objectives planned for 2017.

- We improved the usability of the DEHS WebEHRs; the WebEHRs change control board met throughout the year, and 16 significant system changes were made which enhanced usability.
- Throughout the year, the TIPCAP monitoring contractor, the University of Colorado, Denver provided technical support to the IHS and TIPCAP programs across the country.
- To assist DEHS programs in developing meaningful interventions, four new reports were added to the WebEHRs reporting functions to provide summary reports of the 2016-2020 Environmental Surveillance Performance Measures.
- The strategic vision element, “DEHS Operational Model,” was completed and is available in the [OEHE Technical Handbook, Volume VIII, Part 112-1](#).
- LCDR John Hansen earned a master’s degree with the completion of the Uniformed Services University/ IHS IEH MSPH and residency program from which his award winning thesis work determined IHS dental personnel’s exposure to nitrous oxide levels in the breathing zone during dental procedures.
- LCDR Dustin Joplin was selected as the new IEH Resident. In July 2017, he entered the two-year Uniformed Services University/IHS IEH MSPH and 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 [DEHS 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.

I hope you enjoy reading about IHS DEHS projects and activities across the country!



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List of Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists	LNF	Level of Need Funded
AI/AN	American Indian/Alaska Native	MAHC	Model Aquatic Health Code
ANSI	American National Standards Institute	NDECI	Notifiable Disease and External Cause of Injury
ANTHC	Alaska Native Tribal Health Consortium	NIH	National Institutes of Health
BIA	Bureau of Indian Affairs	NIOSH	National Institute of Occupational Safety and Health
CDC	Centers for Disease Control and Prevention	OEHE	Office of Environmental Health and Engineering
CFM	Certified Food Manager	OSHA	Occupational Safety and Health Administration
CFPM	Certified Food Protection Manager	OWCP	Office of Workers' Compensation Program
CMS	Centers for Medicare and Medicaid Services	PDMP	Prescription Drug Monitoring Program
DEHS	Division of Environmental Health Services	PHS	Public Health Service
DSFC	Division of Sanitation Facilities Construction	RRM	Resource Requirement Methodology
DOHSM	Division of Occupational Health and Safety Management	RWI	Recreational Water Illness
EHS	Environmental Health Specialist	SFC	Sanitation Facilities Construction
EHSA	Environmental Health Services Account	SNAP	Safe Native American Passengers
EHSC	Environmental Health Support Center	SU	Service Unit
EPA	Environmental Protection Agency	TIPCAP	Tribal Injury Protection Cooperative Agreement Program
EZID	Emerging and Zoonotic Infectious Diseases	TLV	Threshold Limit Value
ICD	International Classification of Diseases	TWA	Time Weighted Average
IEH	Institutional Environmental Health	WebCident	Web-based Incident Reporting System
IHS	Indian Health Service	WebEHRS	Web-based Environmental Health Reporting System
IP	Injury Prevention		

Profile of the DEHS Program



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).

We are Environmental Health Officers, Environmental Health Specialists, Health Care Safety Officers, Institutional Environmental Health Officers, and Injury Prevention Specialists. We provide direct environmental health services and consultation to American Indian and Alaska Native tribal governments and Indian Health Service programs.

We are Environmental Health Officers, Environmental Health Specialists, Health Care Safety Officers, Institutional Environmental Health Officers, and Injury Prevention Specialists. We provide direct environmental health services and consultation to American Indian and Alaska Native tribal governments and Indian Health Service programs.

DEHS Vision Elements

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

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.

In addition to Area efforts to develop policies and plans, program strategic planning continued to be a major national emphasis during 2017. Since 2007 over 45 DEHS staff were involved on teams formed to create significant, tangible progress on the seven Vision Elements. Vision Element Teams were supported by a Core Group of HQ and Area-level staff. The Core Group was responsible for clearly defining the charge to the Team, reviewing work products, and for providing input to each of the teams.

Vision Element 7, Operational Model, was completed in 2017. It is available in the [OEHE Technical Handbook, Volume VIII, Part 112-1](#) and aligns with [Part 3 Chapter 11 of the Indian Health Manual](#). This vision element identifies core services all Areas should provide the tribes.



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.



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 2017 can be found in the [National Focus Areas](#) section of this report.



Program Structure

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 2017, the national DEHS program consisted of a total of 258 staff excluding the headquarters staff listed below. The DEHS at Area Offices were typically staffed with a Division Director and one or two professional staff (e.g., IP Program Manager and/or IEH Program Manager). 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 Rockville, Maryland, is staffed similarly to the Areas.



CAPT David McMahon
Acting Director



CDR Charles Woodlee
Institutional Environmental Health (IEH) Program Manager



CAPT Nancy Bill
Injury Prevention (IP) Program Manager



CAPT Holly Billie
Injury Prevention (IP) Program Manager



CDR Mike Reed
Senior EH Officer



CDR Stephen R. Piontkowski
Senior EH Officer



LCDR John Hansen
IEH resident



LCDR Dustin Joplin
IEH resident

The DEHS is a comprehensive, field-based program.



Program Services

The DEHS staff provide direct environmental health services and technical assistance to tribes on a broad scope of program areas like water quality, waste disposal, food safety, community injury prevention, vector control, and occupational safety and health. More details are in the [DEHS Services](#) section of this report.

SERVICES

- Investigations
- Surveys/Inspections
- Training
- Plan Review
- Policy Development
- Technical Assistance
- Vector Control
- Disease Surveillance
- Project Development

TOPICS

- Water Quality
- Air Quality
- Injury Prevention
- Infection Control
- Sanitation
- Fire Safety
- Occupational Safety & Health
- Waste Management
- Food Safety
- Epidemiology
- Vectorborne/Zoonotic Diseases
- Aquatic Facilities
- Emergency Preparedness



Program Resources

The current budget of the DEHS Program is approximately \$33 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 2017, the DEHS share of the EHSA budget was approximately 40%, or \$32,662,025. Figure 1 depicts a historical comparison of the workload-based Resource Requirement Methodology (RRM) versus the distribution of Program funds from 2008 to 2017. 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 (% Total EHSA Budget)	*DEHS Budget	COSTEP**	Injury Prevention***	Residency**	Injury Prevention Budget Enhancements	Total DEHS Budget
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
2017	\$70,793,387	40.00%	\$28,642,933	\$160,000	\$0	\$125,000	\$2,766,698	\$32,662,025

*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

As Table 2 shows, the DEHS Program strives to accomplish its tasks at a funding level of 35.9% 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)
- Johns Hopkins University
- Consumer Product Safety Commission

Figure 1: RRM (workload) vs. actual DEHS funding from 2008 to 2017.

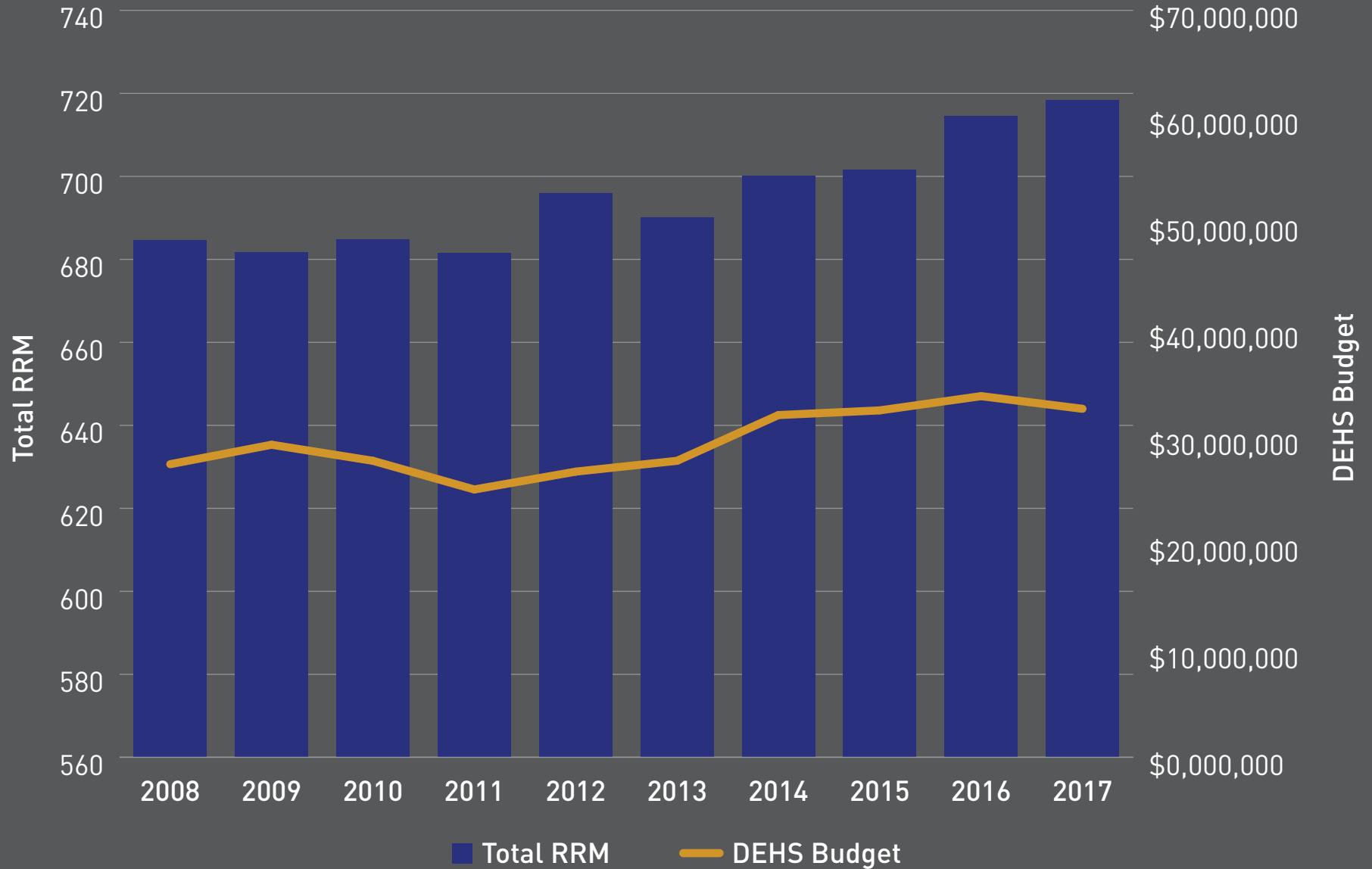


Table 2: Level of Need Funded (LNF) 2017.

Area	Total Staff*	RRM	%LNF	Federal Staff	Tribal Staff
Alaska	37	94.55	39.1%	0	37
Albuquerque	17	38.26	44.4%	16	1
Bemidji	21	56.51	37.2%	11	10
Billings	12	31.25	38.4%	4	8
California	9	53.04	17.0%	6	3
Great Plains	26	54.45	47.8%	15	11
Nashville	16	42.08	38.0%	3	13
Navajo	41	113.53	36.1%	32	9
Oklahoma City	32	101.09	31.7%	12	20
Phoenix	36	70.61	51.0%	24	12
Portland	7	51.25	13.7%	5	2
Tucson	4	11.79	33.9%	2	2
Total**	258	718.41	35.9%	130	128

*Includes tribal staff hired with IHS Cooperative Agreement Funds
 HQ staff are not reflected here

**Total is not exact due to rounding
 Data from 2016 determines the 2017 LNF



Successful delivery of environmental health services to tribal communities rests on the foundation of a competent and motivated workforce.



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 2017 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 2017 there were 29 classes with a total of 608 participants (*Table 3*).

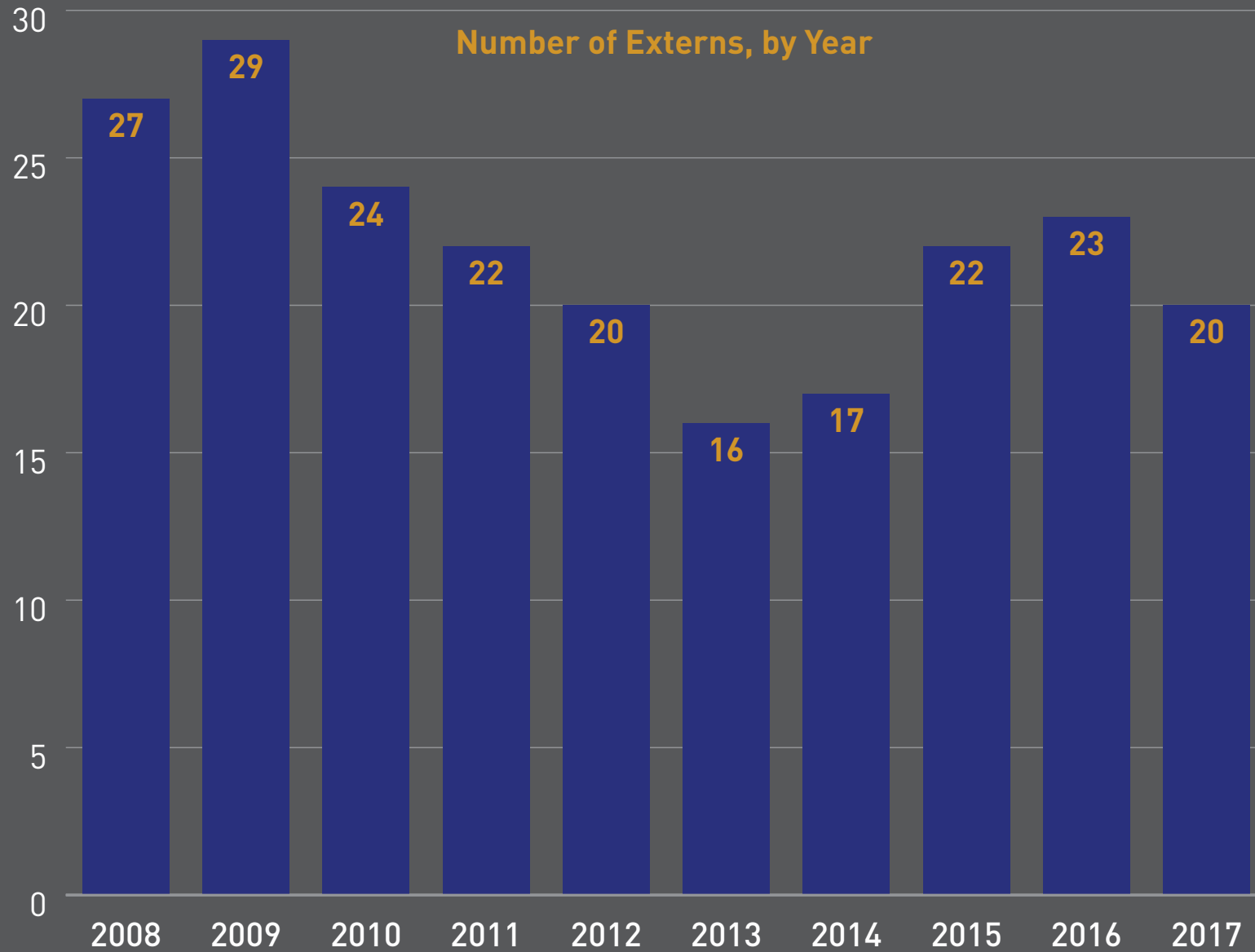
Successful delivery of environmental health services to tribal communities rests on the foundation of a competent and motivated workforce. Figure 2 shows the numbers of student externs hired since 2008. The number of externs hired annually fluctuated from 16–29. During 2017, the DEHS supported 20 student externs.

Table 3: EHSC Sponsored Courses – 2017.

Course	Location	Number of Participants
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
Safe Native American Passengers [SNAP]	Olympia, WA	3
*NFPA 99 Standards for Healthcare	Phoenix, AZ	38
Introduction to Injury Prevention	Albuquerque, NM	12
Safe Native American Passengers [SNAP]	Wadsworth, NV	12
Intermediate Injury Prevention	Albuquerque, NM	14
Safe Native American Passengers [SNAP]	Polacca, AZ	16
Safe Native American Passengers [SNAP]	Chinle, AZ	7
Safe Native American Passengers [SNAP]	Stillwater, OK	10
FDA Food Code Course - FD112	Portland, OR	19
FDA Managing Retail Food Safety - FD215	Portland, OR	24
*Infection Preventionists Housekeeping Fundamentals	Albuquerque, NM	24
*NFPA 101 Life Safety Code	Gallup, NM	35
*NFPA 99 Standards for Healthcare	Gallup, NM	35
*Healthcare Safety Accreditation	Oklahoma City, OK	33
*Healthcare Safety Accreditation	Albuquerque, NM	38
*Healthcare Safety Accreditation	Gallup, NM	36
*Environmental Health & Engineering Orientation, 20 EHS	Albuquerque, NM	20
Intermediate Injury Prevention	Scottsdale, AZ	27
10 Hour OSHA Course for General Industry	Ft. Yuma, CA	10
Fundamentals of Infection Surveillance, Prevention and Control -EPI 102	Albuquerque, NM	25
Introduction to Injury Prevention	Pickstown, SD	12
Infection Control for Ambulatory Healthcare Facilities	Spokane, WA	33
Safe Native American Passengers [SNAP]	Chinle, AZ	1
Assessment Writing	Oklahoma City, OK	7
Epi Info	Oklahoma City, OK	9
Intermediate Injury Prevention	Billings, MT	15
TOTAL CLASSROOM STUDENTS		608

*Includes IEH, Sanitation Facilities Construction, and Facilities Engineering staff

Figure 2: Number of college students participating in the DEHS extern program, 2008 to 2017.



PROFILE OF THE DEHS PROGRAM

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 fifteen DEHS staff funded by IHS for college courses in 2017. Of the fifteen, eleven were federal employees and four were tribal employees. Staff in six of the twelve Areas received long-term training support.

There are 17 IEH Residency Graduates currently active with IHS and tribal programs (Table 4) and a new resident began the program in 2017.

Table 4: Active IEH Residency Graduates.

Graduate	Residency Year
John Hansen	2017
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: Distribution of environmental health within the national program.

2017 Environmental Health Staff (N=258)

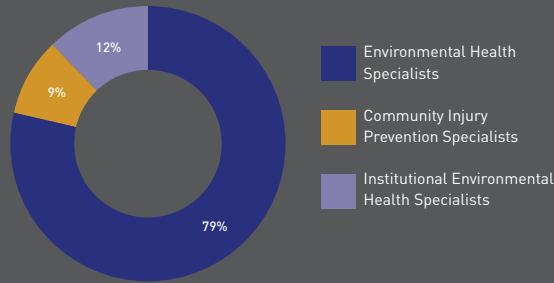


Figure 4: Percentage of environmental health staff with master's degrees.

Percentage of Environmental Health Staff with Master's Degrees (2017)

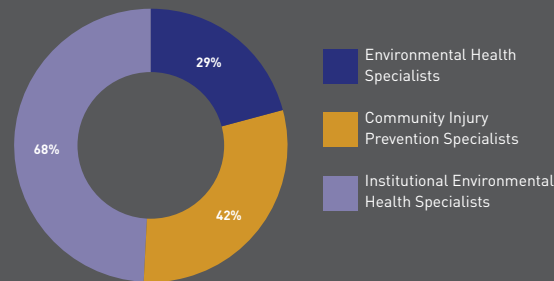
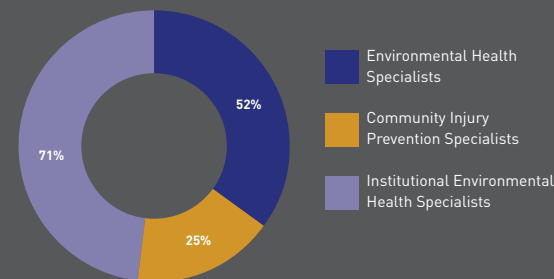


Figure 5: Percentage of environmental health staff with REHS/RS credentials.

Percentage of Environmental Health Staff with REHS/RS Credentials



Distribution of federal (130) and tribal (128) staff (N=258) within the national program (this excludes headquarters staff) (Figure 3).

- Environmental Health Specialists (EHS) – 79% (203/258)
- Community Injury Prevention (IP) Specialists – 9% (24/258)
- Institutional Environmental Health (IEH) Specialists – 12% (31/258)

Federal and tribal staff with master's degrees in Environmental Health or a related field.

- Total – 38% (97/258)
- Federal – 47% (61/130)
- Tribal – 23% (29/128)

Staff with master's degrees by specialty (Figure 4).

- EHS – 29% (59/203)
- Community IP Specialists – 42% (10/24)
- IEH Specialists – 68% (21/31)

Federal and tribal staff who are Registered Environmental Health Specialists or Registered Sanitarians (REHS/RS).

- Total – 52% (133/258)
- Federal – 62% (81/130)
- Tribal – 41% (52/128)

Staff with REHS/RS by specialty (Figure 5).

- EHS – 52% (105/203)
- Community IP Specialists – 25% (6/24)
- IEH Specialists – 71% (22/31)

PROFILE OF THE DEHS PROGRAM

Federal and tribal staff with additional credentials (*Table 5*).

- Child Passenger Safety Technicians – 24% (61/258)
- Certified Pool Operators – 17% (43/258)
- IHS IP Fellowship Program Graduates – 14% (35/258)

Table 5: Summary of Certifications Held by Federal and Tribal Staff.

Certification	Environmental Health Specialist	Community Injury Prevention Specialist	Institutional Environmental Health Specialist	Total	Percent of total
REHS/RS*	105	6	22	133	52.0%
IP Fellow	23	9	3	35	14.0%
Certified Safety Professional	7	0	3	10	4.0%
Certified Industrial Hygienist	0	0	6	6	2.0%
Certified in Infection Control	1	0	0	1	0.0%
Child Passenger Safety Technician	49	10	2	61	24.0%
Certified Playground Safety Inspector	4	1	0	5	2.0%
Certified Radiation Protection Surveyor	1	0	7	8	3.0%
Certified Environmental Health Technician	7	0	0	7	3.0%
Diplomate, American Academy of Sanitarians	0	0	1	1	0.0%
CHEM**	1	0	0	1	0.0%
FDA Standard	7	0	0	7	3.0%
Lead/Asbestos Certification	10	0	7	17	7.0%
IEH Residency	0	0	12	12	5.0%
Certified Pool Operator	43	0	0	43	17.0%
OSHA HAZWOPER	11	0	3	14	5.0%
Healthy Homes Specialist	2	0	0	2	1.0%
Certified Professional in Food Safety	8	0	0	8	3.0%
Other	2	0	1	3	1.2%

*Registered Environmental Health Specialist/Registered Sanitarian

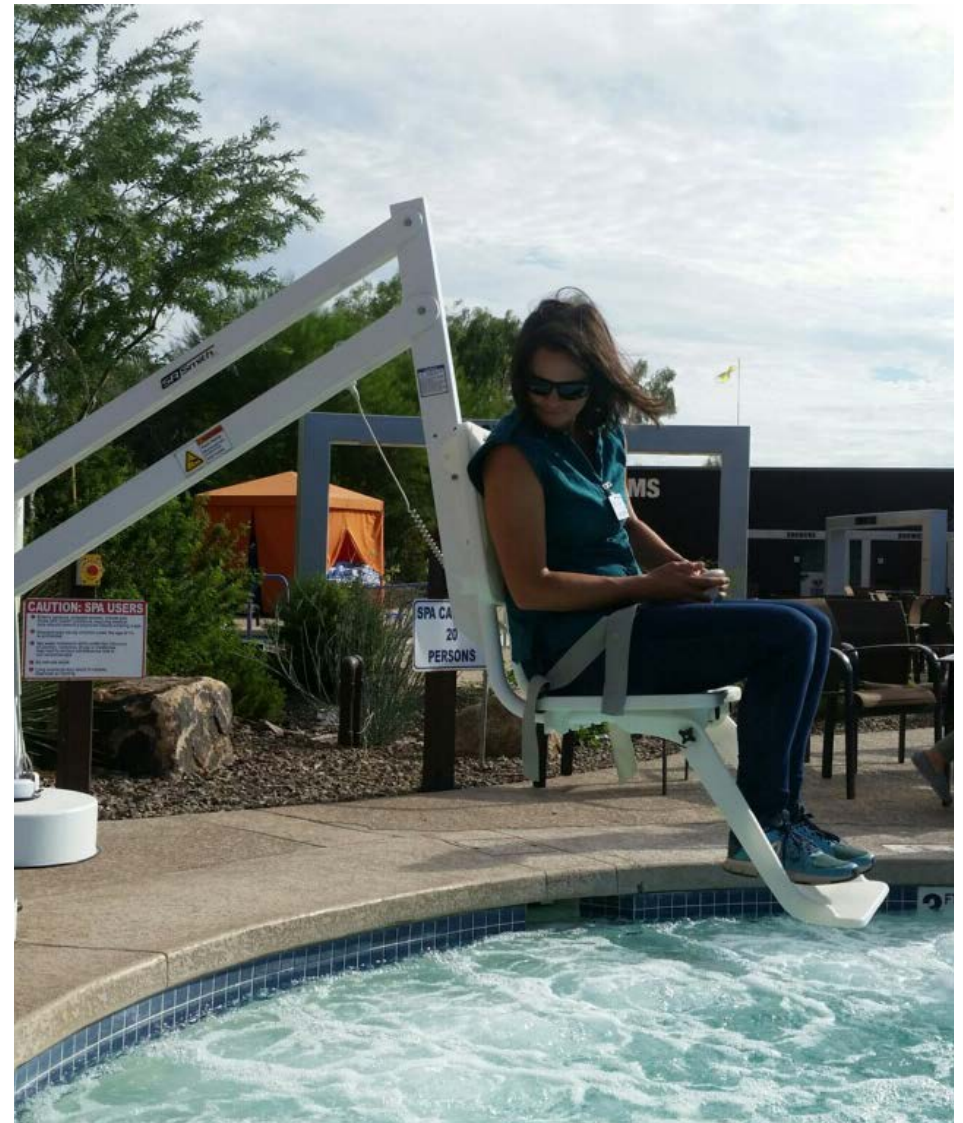
**Certificate of Healthcare Emergency Management

Recognition

There are several awards the federal and tribal staff may earn in recognition of contributions and achievements towards IHS goals, objectives, and the completion of significant activities. *Table 6* summarizes awards received by federal and tribal staff in 2017.

Table 6: Summary of Awards Received by Federal and Tribal Staff.

Summary of Awards Received by Federal and Tribal Staff			
Award Type	Federal	Tribal	Total
Public Health Service Awards			19
Outstanding Service Medal			0
Commendation Medal	3		3
Achievement Medal	6		6
Citation	1		1
Crisis Response Service Award	2		2
Outstanding Unit Citation	2		2
Unit Commendation	4		4
Isolated Hardship			0
Training Ribbon			0
Field Medical Readiness Badge	1		1
Foreign Duty Award			0
Hazardous Duty Award			0
Special Assignment Award			0
Indian Health Service Area Awards	8		8
Civil Service Personnel Awards	3		3
National IHS Awards	11	2	13
Other National Awards	1		1
Tribal Awards			0
TOTAL	42	2	44





Kate Pink conducts an inspection of a swimming pool equipment room.

Individuals who received Area EHS of the Year (2017) were:



Antoinette Toya
Albuquerque Area



David Bales
Oklahoma City Area



Shelby Foerg
Bemidji Area



Kate Pink
Phoenix Area



Tim Shelhamer
California Area



William Burrows
Portland Area



Jack Parisien
Great Plains Area

These Area EHSs of the Year were nominated for the IHS EHS of the Year (2017) and **Kate Pink**, Phoenix Area Area IHS, was selected.

INDIAN HEALTH SERVICE ENVIRONMENTAL HEALTH SPECIALIST OF THE YEAR

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 7*.

Table 7: EHS of the Year, 2017 through 1993.

Year	Recipient
2017	Kate Pink, Phoenix Area IHS
2016	Mike Reed, Great Plains Area IHS
2015	Sarah Snyder, California Area IHS
2014	Landon Wiggins, Phoenix Area IHS
2013	Martha Maynes, Bemidji Area IHS
2012	Lisa Nakagawa, California Area IHS
2011	Bryan Reed, Bristol Bay Area Health Corp.
2010	Amanda M. Parris, Phoenix Area IHS
2009	Timothy Duffy, Bemidji Area IHS
2008	Holly Billie, Phoenix Area IHS
2007	Stephen Piontkowski, Phoenix Area IHS
2006	Troy Ritter, Alaska Native Tribal Health Consortium
2005	Andrea Horn, Phoenix Area IHS

Year	Recipient
2004	Celeste Davis, Albuquerque Area IHS
2003	Casey Crump, Bemidji Area IHS
2002	Pete Wallis, Tanana Chiefs Corporation
2001	Molly Patton, Tanana Chiefs Corporation
2000	Shawn Sorenson, South East Alaska Regional Health Corp.
1999	Mike Welch, Phoenix Area IHS
1998	Diana Kuklinski, Phoenix Area IHS
1997	Mark Mattson, Bemidji Area IHS
1996	Harold Cully, Oklahoma Area IHS
1995	Keith Cook, Navajo Area IHS
1994	Carol Rollins, Ho-Chunk Nation
1993	John Sarisky, Navajo Area IHS

2017 ENVIRONMENTAL HEALTH SPECIALIST OF THE YEAR – KATE PINK, MSEH, REHS

Introduction



LT Kathryn “Kate” Pink is proudly nominated by the Phoenix Area Indian Health Service Office of Environmental Health and Engineering for the 2017 Indian Health Service Environmental Health Specialist of the Year. LT Pink is an Environmental Health Officer assigned to the Fort Yuma Service Unit (FYSU), one of three Service Units in the Western Arizona District. As the principal EHO for the FYSU (0-4 billet), LT Pink is responsible for developing and implementing a comprehensive environmental health program serving

the Quechan Indian Nation and Cocopah Indian Tribe (combined pop. 3,500). She also provides services to the Sherman Indian High School in Riverside, CA, and when called upon, provides cross-training or coverage to two other Service Units within the District. She joined the IHS in 2016, reporting to Fort Yuma as a civilian and converting to the Commissioned Corps in late 2017. In just her first IHS assignment, LT Pink’s efforts and contributions toward the advancement of environmental health to benefit the American Indians in the Fort Yuma Service Unit continue to increase, evolve, and impress.

Professionalism

LT Pink has a Master of Science in Environmental Health from Eastern Carolina University (2014). Prior to joining IHS, she served over a year as an Environmental Health Specialist with the Durham County Health Department in North Carolina. She maintains the following professional credentials: Registered Sanitarian/Registered Environmental Health Specialist (North Carolina), Child Passenger Safety Technician (Safe Kids USA), ServSafe Certified Instructor and Proctor, Certified Pool Operator (National Swimming Pool Foundation), and Red Cross Lifeguard/First Aid/CPR Instructor. She has used her extensive training and experience in food safety and aquatics facilities management to cross-train and mentor tribal pool operators and her peers in two Phoenix Area district offices. She serves as the secretary of the local Commissioned Officer Association (COA) branch.

Special Accomplishments

Recreational Water Safety: Preventing recreational water illnesses (RWIs) is a high priority in the Phoenix Area and Western Arizona District with an estimated 60 public and semi-public swimming pools and spas operating within the District. Preventing RWIs requires active participation from competent pool staff, swimmers, and environmental health advisors. Poor maintenance can result in low disinfectant levels that can allow the spread of a variety of microorganisms that can cause gastrointestinal, skin, ear, respiratory, eye, neurologic and wound infections. Considered one of the Phoenix Area’s subject matter experts in swimming pool inspections and plan reviews, LT Pink used the public health approach framework to improve the health and safety of swimmers in the Fort Yuma Service Unit. LT Pink assessed all pools in the Fort Yuma Service Unit (n=11; annual and follow-up assessments) to obtain a baseline of common and critical deficiencies. Her analysis revealed that risk factors contributing to poor pool conditions included absent or outdated swimming pool safety management policies and procedures; inconsistent trainings provided to pool operators; and limited funds to address priority physical facility deficiencies such as anti-entrapment pool drain covers. LT Pink addressed these risk factors by implementing the following strategic interventions:

1. Designing and implementing an internal cross-training program using CDC’s Model Aquatic Health Code (MAHC) as a primary reference, training tool, and survey instrument
2. Timely follow-up assessments to verify recommended corrective actions were implemented
3. Assisting pool operators with developing or revising standard operating procedures
4. Identifying aquatics operations and safety funding resources for tribes to pursue

Noteworthy impacts resulting from these interventions include all pools in the Fort Yuma Service Unit complying with key MAHC recommendations (e.g., all pools equipped with anti-entrapment devices or systems that comply with the ASME/ANSI; proper disinfection levels); field Environmental Health Specialists/Officers from two Phoenix Area districts cross-trained in assessing pools and spas using the MAHC checklist; updated pool safety management SOPs for all Fort Yuma Service Unit pool operations; the Quechan Tribe receiving a \$5,000 grant to improve pool structures,

purchase swim equipment, and establish a swim program to tribal youth to increase safety and competency in the water; mentorship provided to JRCOSTEP in completing a pool inspection training module; and partnership with the Cocopah Tribe in producing an 8-minute video highlighting important pool safety elements to increase the technical capacity of tribal pool operators.

Prevention and Control of Vectorborne and Zoonotic Diseases: The Phoenix Area continues to place a high priority on preventing the transmission of vectorborne and zoonotic diseases to humans. LT Pink played an integral role in leading and coordinating efforts to reduce risks associated with diseases such as Rocky Mountain spotted fever (RMSF), rabies, and West Nile virus. RMSF continues to become an urgent issue for American Indians in Arizona. To illustrate the severity of the epidemic, the CDC estimates that from 2002 to 2014, more than 300 cases of RMSF and 20 deaths occurred on Arizona Indian reservations. There is no vaccine available for RMSF, so disease prevention has focused on preventing tick bites and also controlling the animal population. Another zoonotic disease considered a high priority in IHS is rabies. Left untreated, rabies is 100% fatal in humans. Annually, an estimated 30 people are exposed to rabid animals in Arizona. People exposed must receive vaccine and anti-rabies serum treatment to prevent infection. In response to the risk brought on by RMSF and rabies, LT Pink coordinated the first specialty clinic held in the Fort Yuma Service Unit. She linked the tribal animal control and public health preparedness programs with the Midwestern University College of Veterinary Medicine and the U.S. Army Veterinary Treatment Facility to provide mobile clinic services that included spay/neuter service to dogs and cats as well as vaccines, wellness, and minor medical care. The combined services resulted in over 200 animals receiving rabies vaccinations and 36 pet surgeries at no cost to participants (estimated value of services if obtained from the private sector is \$18,000). In conjunction with the clinics and in response to rising concerns of tick-borne diseases in the southwest, LT Pink coordinated RMSF surveillance with the UC Davis Veterinary Medicine and Epidemiology program. The team collected and tested tick samples from pets brought into the clinic for RMSF. All ticks collected tested negative for *Rickettsia rickettsii*. This activity had the added benefit of providing tribes educational materials, maps of tick density, results on whether ticks are carrying the RMSF bacteria, and protocols for how to deal with tick infestations. Finally, arbovirus disease surveillance

continued to be a high priority in the Phoenix Area. In 2017, LT Pink partnered with the Yuma County Pest Abatement District and tribal environmental protection programs in conducting mosquito testing to monitor diseases such as West Nile, Zika, Dengue, and Chikungunya. She gained proficiency in the use of carbon dioxide baited mosquito traps for West Nile surveillance and Gravid Aedes Traps (GAT) for *Aedes aegypti* surveillance. Recognizing the importance of helping build tribal capacity to perform these tasks, LT Pink provided tribal environmental protection program staff training on how to set these traps and collect specimens for lab submittal. LT Pink's efforts to build advocacy, raise awareness, and increase capacity resulted in enhanced disease surveillance services for the Cocopah and Quechan Tribes and helped community members better understand how to reduce their exposures to disease vectors.

Food Safety Training: LT Pink has elevated EH services in Fort Yuma by increasing the frequency of food establishment assessments, which has resulted in decreased Priority and Priority Foundation violations in high-risk establishments such as casinos, schools, and senior citizens' centers. As co-instructor of our advanced food safety course, she has helped increase the number of certified food protection managers in the Fort Yuma Service Unit and the Colorado River Service Unit. In 2017, she instructed over 20 basic and advanced food safety training to nearly 400 food service workers. By incorporating the principles of adult learning in her trainings, she has provided participants an environment in which mistakes are safe, expected, and a basis for continued learning.

Summary

Public health practice cannot be delivered effectively without the leadership, innovation, and dedication of passionate individuals and public health practitioners like LT Pink. She has consistently demonstrated high integrity and an exceptional ability to work with and gain the trust of tribal officials, community members, and IHS staff. LT Pink exemplifies the highest qualities of leadership and commitment to the mission of the Indian Health Service. Her extraordinary knowledge, expertise, creativity, and dedication have contributed to elevating the health status of American Indians. Without reservation, LT Pink is emphatically nominated by the Phoenix Area for the 2017 Indian Health Service Environmental Health Specialist of the Year.

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 8: Gefroh Award Winners, 2017 through 2008.

Year	Recipient	Profession	Area/Facility
2017	Chris Kates	IEH Officer	Oklahoma City Area
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.



2017 GEFROH AWARD WINNER – CHRIS KATES, MPH, REHS

Summary of Accomplishments

- Coordinated revamping of area-wide radiation monitoring program and began new dental x-ray survey task
- Lead improvements to area-wide emergency management program related to workplace violence, severe weather response, and communication
- Coordinated for IHS HQ alternate emergency operations center, and tribal coordination within State Operations Center
- Assisted in creating new dental sterilization training program to reduce infection control hazards

Introduction



CAPT Kates has served as the IHS Oklahoma City Area (OCA) Institutional Environmental Health Officer since January of 2015. His duties include providing comprehensive environmental health and institutional environmental health services to 31 direct service tribes and 4 urban Indian Health Centers. In addition to his regularly assigned duties, he serves as the IHS OCA Emergency Management point-of-contact, OCA Mock Healthcare Accreditation Survey Team member, and the IHS OCA Safety Officer.

Significant Accomplishments

CAPT Kates coordinated the development of an OCA-wide radiation dosimetry passive monitoring program. This program included seven federal and 13 tribal health facilities, which provide passive dosimetry monitoring services to over 400 employees. CAPT Kates provided technical assistance to each site to determine the exact number of dosimeters needed, to decrease cost and ensure all employees who were required to be monitored received a dosimeter.

CAPT Kates coordinated the purchase of additional radiographic monitoring equipment, to evaluate dental panoramic radiographic units. Currently, there are 23 panoramic units located within 7 IHS and 15 tribal health facilities being evaluated. He received advanced training from a certified health physicist to assist in evaluating these units, which results in a total savings of at least \$10,000 annually to the OCA dental program.

Innovation

CAPT Kates collaborated with the National Weather Service to allow the IHS OCA in becoming a participating partner, which provides real-time weather monitoring updates for all IHS OCA facilities in times of severe weather, increasing the emergency preparedness of the OCA facilities and reducing safety risk to patients, staff, and visitors.

He coordinated with IHS headquarters to allow the IHS OCA to become the alternate site for IHS headquarters operations during a disaster, increasing the emergency preparedness of the IHS at the National Level.

CAPT Kates also partnered with the Oklahoma State Department of Health, which resulted in providing a reserved section for the IHS OCA at the state's Emergency Operations Center during emergencies that potentially affect tribes within the state. He created a Tribal Emergency Point-of-Contact list for every tribe within the IHS OCA. This list is used to quickly communicate and gain status updates from tribes during severe weather or other emergencies.

He assisted in creating a new dental sterilization training session, designed to provide hands-on training to IHS, Tribal, and Urban dental support staff in proper sterilization techniques. The initial training event was attended by 38 staff members from 13 facilities throughout IHS OCA, resulting in a reduction of infection control hazards.

CAPT Kates demonstrated outstanding 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 safety, infection control, and emergency preparedness at both IHS and Tribal healthcare clinics across the Region. The DEHS proudly awards CAPT Chris Kates the 2017 Gary J. Gefroh Safety and Health Award for his exemplary service.



DEHS Services

Laurence Prokopiof, Water Operator,
inspects a water tank, Saint George, AK.



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.

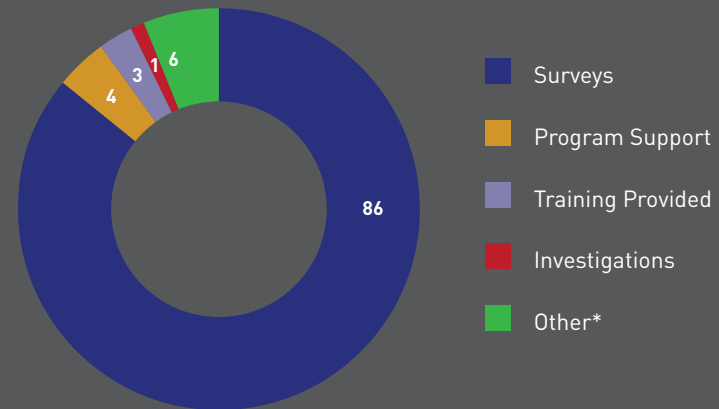
For the DEHS, health monitoring activities not only include real-time surveys for a variety of public health-related issues but also the use of regional and national information systems to manage, track, and respond to trends and issues (*Figure 6*).

- Number of establishments/facilities¹ – **19,715**
- Staff recorded activities – **8533**
 - Surveys – **86%** (7305/8533)
 - Training provided – **3%** (292/8533)
 - Investigations – **1%** (105/8533)

¹ WebEHRS Reports, National Establishment Counts 2017 (excludes Headquarters items)

Figure 6: Activities completed in 2017 as reported in WebEHRS.

Activities Completed in 2017 as Reported in WebEHRS (percent of total)



*Other includes mobilize community, policy development, sample/test, evaluation, control, training received, and data collection.

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 (ICD), 9th Revision, codes used to define the groupings for injuries, asthma, notifiable diseases, intestinal diseases, and vectorborne diseases. In 2017, an initiative began to update NDECI with ICD10 codes and transition to new business intelligence software. The upgrade, scheduled to be piloted in 2018, will provide DEHS staff an environmental health relevant dashboard of key indicators from which to monitor public health status and enhance the ability to run ad-hoc reports tailored to program needs.

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. In 2017 the WebEHRS change control board was revitalized and instituted 16 significant system changes which enhanced usability. Many other system improvements and WebEHRS support features were completed (e.g. Performance Measures reports, hosting virtual learning sessions and the first live training course for users) throughout the year.

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, child care, 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 2017:

- 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

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 second year of the latest funding cycle for TIPCAP (2016-2020). For the first time in TIPCAP’s history, at least one grantee was funded in all of the 12 IHS Areas. In 2017, approximately \$2.0 million was distributed through 32 cooperative agreements ranging from \$20,000 to \$80,000. Seven tribes/tribal organizations were awarded \$80,000 each and 25 tribes/tribal organizations/urban programs each received \$20,000.

Since 1997, nearly \$29 million has been awarded to about 100 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. To capture the first *20 Years of TIPCAP*, an overview of projects, successes, and challenges from 1997-2017 was documented and is available on the [TIPCAP website](#).



20 Years of TIPCAP

Tribal Injury Prevention Cooperative Agreement Program (1997-2017)




TIPCAP is a program of the Indian Health Service designed to address one of the greatest public health issues in Indian Country: injuries. TIPCAP uses cooperative agreements with tribes and other partners to reduce the impact injuries have on American Indians/Alaska Natives (AI/ANs).


By the Numbers

- #1** leading cause of death for AI/ANs aged 1-44 years is unintentional injury. It's the third leading cause of death for AI/ANs of all ages.
- 1997** was TIPCAP's first year to partner with AI/AN communities.
- \$29M** awarded from 1997-2017.
- 99** tribes and tribal organizations funded among all 12 IHS Areas.
- 94** dedicated injury prevention positions funded in AI/AN communities.


Key Components




Tribal Capacity Building




Workforce Development



Education And Outreach



Lasting Partnerships



Policy Development









TIPCAP increased seat belt use

45%

from 2005-2015



TIPCAP developed

18

elder fall prevention programs

Read the full 20 year report at www.ihs.gov/injuryprevention

Figure 7: IHS Workers' Compensation Cases, 2008-2017.

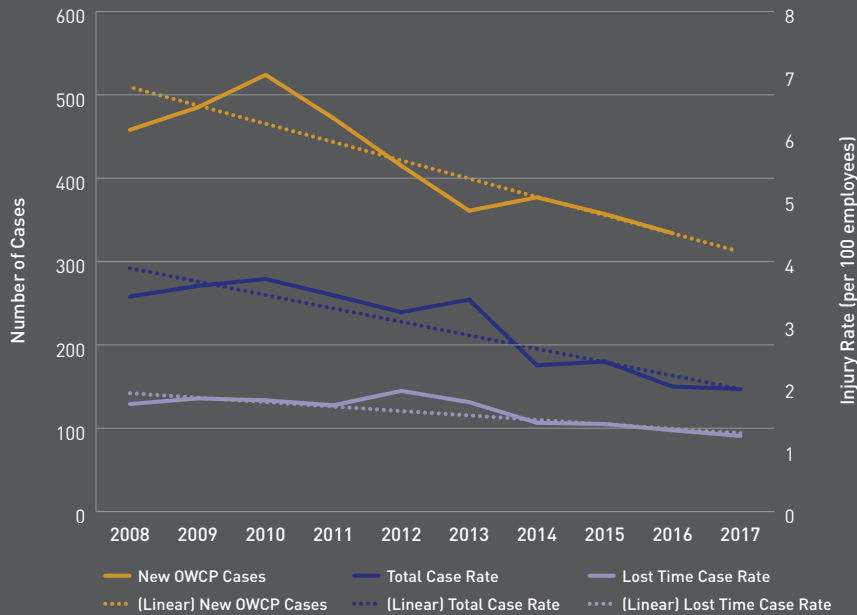
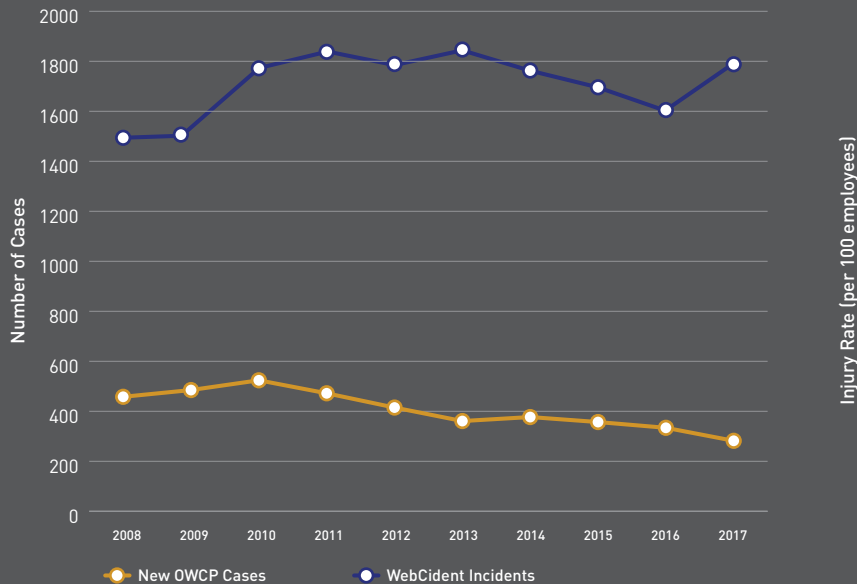


Figure 8: WebCident worker injury incidents and Office of Workers' Compensation Programs injury cases; 2008-2017.



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: 1) reduce risks of injury and/or illness to clients, employees and visitors of community institutions; 2) to protect our environment; and 3) 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. A primary objective is to support local safety programs by providing education, onsite technical support, accreditation assistance, 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 rates are consistently lower than national healthcare industry rates. *Figure 7* also indicates a trend of decreasing injury cases, total case rates, and lost-time case rates¹ for the IHS from 2008 through 2017.

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 38,235 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 2017, there were 3,909 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)).

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



DEHS National Focus Areas

LTJG Francis Park conducts mosquito surveillance.



DEHS Services



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 2017. 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 are 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

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.

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, Head Start 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 2017 are presented.



GRAND PORTAGE PLAYGROUND PROJECT

Connie Giroux

Bemidji Area

Introduction

In the Fall of 2015, a request was received to complete a comprehensive assessment of a playground located at the community center and charter school complex and to provide a letter of support for the Grand Portage Band of Lake Superior Chippewa to apply for grants to replace the equipment. The site consisted of two separate playground areas: a small playground for younger children and a larger playground for the older children. A letter of support was written outlining the findings of the assessment. The Grand Portage Band submitted that as a part of their application for the Minnesota Super Bowl Legacy Fund, which provides grants to help fund projects that will improve the health and wellness of children in Minnesota.

Methods

The U.S. Consumer Product Safety Commission Public Playground Safety Handbook was referenced, each piece of equipment was assessed and use zones were measured to determine if clearances were adequate. Wood chips were noted as the surfacing material for both playgrounds.

Results

In the Spring of 2017, the Grand Portage Band was notified that they were a recipient of the Minnesota Super Bowl Legacy Fund (press release available at: <https://www.mnsuperbowl.com/Lake-Superior-Chippewa>). The award was for \$100,000 to replace the playground located at the community center and charter school complex. The support letter, which included a comprehensive assessment of the playground, was one of the determining factors in being selected for the Legacy Fund grant. On May 16, 2017, representatives from the Legacy Fund presented the grant to the Grand Portage Band as part of their 52 Weeks of Giving initiative. The Minnesota Vikings football team mascot (Viktor the Viking) made an appearance as part of the award presentation and ground breaking ceremony, which included dozens of children donning hard hats and shoveling dirt. The new playground was installed in the Fall of 2017. Even the wood chips were replaced with poured-in-place rubber surfacing material.

Discussion

The comprehensive playground assessment was completed to identify and document hazards. The extent of these hazards, as documented through the letter of support, provided justification on why the playground equipment and surfacing material should be replaced. The positive working relationship and trust that was developed were key factors in completing this project and securing the Legacy Fund grant.

Conclusions/Recommendations

Our work as environmental health specialists includes more than just completing routine surveys. We need to build trust with the tribes we serve and have a sincere interest in developing and participating in projects leading to positive outcomes. It's through these relationships that doors open to more opportunities to improve the health of the communities we serve.

INDOOR AIR QUALITY INVESTIGATION OF AN EARLY HEAD START CENTER

Charles Mack

Great Plains Area

Introduction

The DEHS received a referral from Early Head Start staff in June 2017, and we investigated the indoor air complaint. The combustible gas/carbon monoxide (CO) detector was calibrated outside in fresh air, prior to entering the Early Head Start. Investigators smelled some type of methane and/or sewer gas odor upon entering the center.

Methods

After further investigation that lasted multiple days, DEHS staff partnered with a third party contractor and discovered a plethora of problems as relating to indoor air quality. Various experiments were conducted to figure out what was causing the problems. In the end, four (4) main concerns plagued the Early Head Start: 1) an oversized 750 cfm kitchen hood vent with no return air (serious negative pressure); 2) CO gas from twelve large pilot lights on a commercial stove; 3) manufacturer installation error in sewer gas vent plumbing; and 4) insufficient heights of five sewer gas roof vents.

Results

Four “new” Early Head Start Centers were affected; this particular one was a high priority. Head Start Administration removed staff and children from this problem center prior to investigations. Other centers had staff and children removed as a precaution.

The oversized 750 cfm kitchen hood vent with no “return air” system caused immense negative pressure that made it difficult to open the exit doors.

Early morning tests of CO indicated 12 pilot lights on a commercial cook-stove off-gassed considerable amounts of CO the night before.

This building was set in a “wind-break” area, causing minimal wind, which in turn affected the atmospheric negative pressure needed to sufficiently pull out sewer gasses from roof vents.

The contractors replaced faulty crawl-space plumbing and extended the roof vents above the roof peak for better venting of sewer gasses.

All commercial cook stoves and hood vents were replaced with smaller units.

Discussion

Teamwork was key during this investigation. Head Start Staff listened closely to all recommendations. The contractor was a certified plumber whose cooperation and input is to be commended. DEHS made “placard signs” and placed them on the hood vent electrical panel switches, informing NOT to turn on, to minimize sewer gases inside. A “Final Report” was shared with the Head Start Director.

Conclusions/Recommendations

Patience was a virtue during this tedious investigation. Teamwork with the contractor aided immensely, as DEHS and the contractor had many in-depth discussions. Keeping Head Start informed aided the Director in her plan to replace the commercial stoves and hood vents. Lastly, working the weekend helped expedite the solution.

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 over 200 activities related to drinking water.

One significant project with an emphasis in safe drinking water was reported in 2017. The DEHS staff also focused on eliminating risk factors related to the operation and maintenance of water systems.



IHS/EPA PARTNERSHIP INITIATIVE – LEAD IN DRINKING WATER IN CHILDREN’S ENVIRONMENT

Kelli Mohler, Landon Wiggins, Pat Brown, Francis Park, Nicole Kenote

Phoenix Area

Introduction



The DEHS is responsible for helping tribes ensure that drinking water is safe and meets applicable regulatory standards. The program provides assistance on meeting health and safety performance standards to programs serving children. Routine surveys of childcare and education programs within the Reno District in 2016 identified that 100% were not meeting testing requirements to ensure drinking water was free from elevated lead levels. This affected 53 childcare programs in the district, serving more than 1,100 children.



Lead is a toxic metal that can be harmful to human health even at low exposure levels over a short time period. Physical and neurological damage affects young children and infants at lower exposure levels than in adults and can result in damage to the central nervous system, learning disabilities, and impaired formation and function of blood cells, among other impacts (source: <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>). While public drinking water systems are

monitored as part of regulatory requirements, non-residential facilities are not included in those requirements. Although program operating standards for schools, Head Start, and childcare programs do require periodic testing, no policies or procedures were in place to ensure this occurred.

To address this public health gap, the DEHS partnered with the U.S. EPA Region 9 Drinking Water Quality Program in 2017 to conduct sampling in children’s environments as part of the EPA Lead in Schools initiative to reduce lead exposures.

Methods

- U.S. EPA Lead in Schools Initiative to reduce children’s exposure to lead in childcare and education environments
- U.S. EPA: Secured tribal approval; developed a sampling protocol; covered lab fees; notified tribes of results and provided follow-up consultation
- DEHS: Developed the approved facilities list, and sampling plan; conducted sampling; shipped samples to lab; and when lead levels exceeded >15 ppb, followed up with IHS Sanitation Facilities Construction (SFC) and public works

Results

- 95% (38/40) of target facilities in U.S. EPA Region 9 Service Units were sampled
 - 120 samples collected
- 4 facilities/12 taps with elevated lead levels
- Facilities replaced fixtures or provided alternate drinking water source
- \$10,000 project (90% U.S. EPA; 10% IHS)
- U.S. EPA Enforcement Program and SFC supportive of including sampling in drinking water system sampling plan for sustainability
- Partnership allowed for expanded sampling opportunity and capacity building within DEHS

Conclusions/Recommendations

- In 2018, explore partnership opportunity with U.S. EPA Region 8 for tribal facilities at one Service Unit
- Formulate “local jurisdiction” approved sampling frequency for children’s environments
- Partner with SFC and tribal utilities to re-evaluate public works’ sampling sites to include these sites

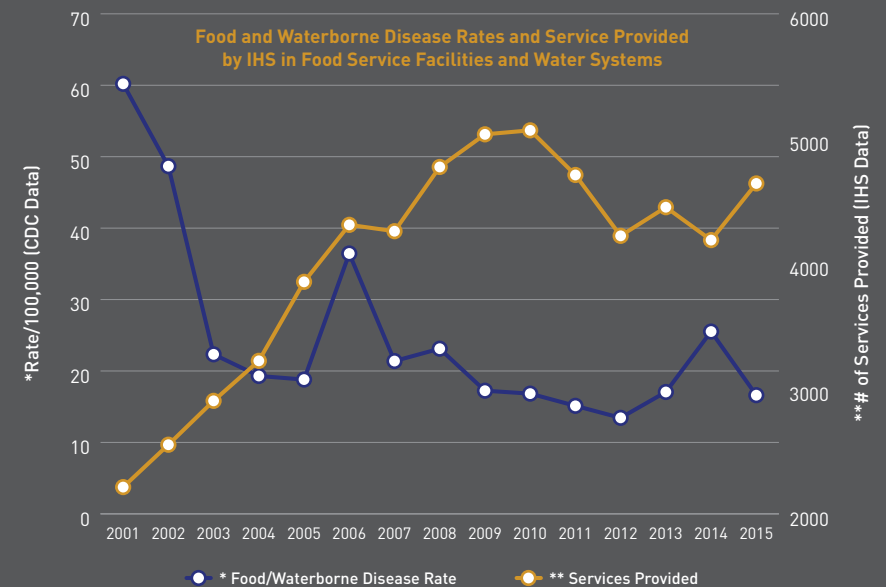
Food Safety

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 2015, as the number of services provided by IHS to food service establishments and drinking water systems increased 110% (2214 to 4643), the incidence of food and waterborne diseases in the United States decreased 72% (60.2 to 16.61) (Figure 9). Projects with an emphasis on food safety conducted in 2017 can be found on the following pages.

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



Sources:
 * CDC MMWR, Summary of Notifiable Diseases, United States.
 ** IHS WebEHRS Data System.



CERTIFIED FOOD PROTECTION MANAGER TRAINING

Danny Walters, Chris Kates, David Hogner, Jamison Honeycutt, Jordan Cox, Kayla Davis, Katie Tompkins, Calvin Underwood, James Isaacs

Oklahoma City Area

Introduction

FDA’s Food Risk Factor studies have suggested that there exists a strong positive correlation between having a Certified Food Protection Manager (CFPM) on-site during operations and having active managerial control of certain food safety Risk Factors in certain types of facilities. A CFPM is defined as a person who has successfully completed an ANSI (American National Standards Institute) accredited CFPM training course. In a 2004 meeting of the Conference for Food Protection, it was decided that persons in charge should acquire an ANSI CFPM to help aid in the overall food safety practices of day-to-day operations. The DEHS, Oklahoma City Area, noticed a high number of risk factor violations in certain types of facilities; and similarly, that those facilities lacked the presence of a CFPM. The division established goal was to provide an ANSI CFPM training to all participating tribal services. It was decided that the easiest and most efficient way to do this, was by using ServSafe.

Methods

- In 2016, Jordan Cox attended and successfully completed the ServSafe training to become an accredited instructor and proctor for the ServSafe Manager Food Protection program
- DEHS purchased 16 ServSafe Manager Food Protection books to be used by any tribal service that wanted the course provided
- DEHS purchased supplemental DVD’s to aid in comprehension of training
- DEHS conducts each class on-site and in accordance with administration of each facility
- Each course provided is a minimum of 8 eight hours and maximum of 20 hours
- All DEHS field staff successfully completed the proctor requirements set forth by ServSafe to help in the administering of the test

Results

- In 2017, the training was provided to 47 participants
- The first class had a 50% pass rate, this showed supplemental learning aids were required to be more efficient in providing successful training courses
- The addition of the supplemental learning aids have increased the first time pass rate to >90%
- No participant has had to take more than 2 attempts to successfully complete training (only 2 participants have had to re-take the test)

Discussion

DEHS, Oklahoma City Area, made several changes to the teaching methods used by learning how to become more effective with each training provided. More training, data collection, and time are needed to determine the overall effectiveness of lowering certain risk factor violations. The DEHS is determined to continue providing the ServSafe Manager Food Protection training to help achieve our mission in enhancing the overall well being of AI/AN. Feedback from the participants has shown that one variable leading to a high number of risk factor violations was a lack of proper education and training in proper food safety. All participants, whether passing on their first attempt or not, have stated that they have learned something new that they can readily apply in their facilities during day-to-day operations.

Conclusions/Recommendations

This training is extremely time consuming for both the facility and the DEHS staff; however, DEHS staff will continue to look for ways to become even more efficient at providing this training. Recent risk factors studies have also shown that just completing the training course has not been very successful at lowering that number of risk factor violations. Reinforcement and application of the material learned from the training course is paramount in achieving a lesser frequency. For this reason, many facilities have purchased their own copies of the training book for food service management to review regularly. Facilities have also found a higher success rate at reducing risk factor violations if persons involved in Food Safety monitoring have attended the training. Additional data will be gathered and analyzed to determine if the presence of a CFPM has had a positive effect in lowering the frequency of risk factor violations.

THE EFFECT OF CERTIFIED FOOD MANAGERS ON OBSERVED FOOD SAFETY VIOLATIONS IN TRIBAL FOOD ESTABLISHMENTS

George Chung

Phoenix Area

Introduction

Ensuring food safety continues to be a high priority in the Phoenix Area, IHS. Increased economic development in each Service Unit has led to the increase in the number of retail food establishments, including over 200 permanent food establishments in this project’s targeted Service Unit.

With food safety being one of the five main priority areas of the DEHS program, there existed a need to provide advanced food safety training to workers in tribal food establishments. In response, a Certified Food Manager (CFM) training program was implemented with goals of increasing the number of individuals with advanced food safety training, and thereby reducing the risk of foodborne illness and outbreaks. However, no evaluation has been conducted to understand the impact, if any, of the increased Certified Food Managers on food safety.

Study Question

Does the presence of a Certified Food Manager in a food establishment result in fewer food safety violations being cited during inspections? If so, is it statistically significant?

Methods

Food inspection reports of the targeted Service Unit from 2013 to 2016 were examined to study the relationship between certification in food safety and food safety violations. Focus was placed on WebEHRS Establishment Type 47 and Type 80. Type 47 facilities consist of restaurants and cafes while Type 80 facilities consist of school kitchens, recreational center kitchens, senior center kitchens, detention center kitchens, and other similar establishments.

Using the Mann-Whitney U Test (one tailed), data from the inspection reports were analyzed to determine if there is statistical evidence of lower number of Priority, Priority Foundation, and Core violations in tribal food establishments with CFMs versus without CFMs. All data analysis was performed using Epi-Info 7 (v. 7.0.9.7).

Table 1. Comparison of violations for Type 47 facilities (N=100) with & without CFM

Violation Type	CFM	Median	Z-score	P value
Priority	Yes	2	-1.0428	0.14917
	No	3		
Priority Foundation	Yes	1	-2.89755	0.00187
	No	3		
Core	Yes	4	-2.89357	0.00193
	No	6		

Table 2. Comparison of violations for Type 80 facilities (N=53) with and without CFM

Violation Type	CFM	Median	Z-score	P value
Priority	Yes	1	-2.38413	0.00866
	No	2		
Priority Foundation	Yes	1	-3.59399	0.00017
	No	3		
Core	Yes	3	-1.35219	0.08851
	No	4		

Conclusions/Recommendations

For Type 47 and Type 80 establishments, having a CFM present in the food establishment resulted in less Priority, Priority Foundation, and Core violations compared to facilities without a CFM. However, as illustrated in Tables 1 and 2, the differences for certain violation types were not statistically significant. Additional research is needed for other service units of IHS that teach the CFM course to determine whether findings similar to the ones in this study will hold true. This will justify continuation of the resource-intensive CFM course and help IHS further its goal of preventing foodborne illness and injury to American Indians/Alaska Natives.

Limitations include a dataset that is limited to the targeted Service Unit. No other data, such as establishment characteristics, were able to be collected. Inspector bias was not addressed; certain violations may be cited or not cited more often than other violations. Lastly, inspections reports only capture a momentary snapshot of the operations of a food establishment; they do not fully detail the true nature of the food establishment’s food safety practices and operations between inspections.

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 2017 can be found on the following pages.





LYME DISEASE RISK ASSESSMENT: DEER TICK SURVEILLANCE AT HANNAHVILLE INDIAN COMMUNITY, LITTLE TRAVERSE BAY BAND OF ODAWA INDIANS AND BAY MILLS INDIAN COMMUNITY

Barry Hugo, Garrett Steiner

Bemidji Area

Introduction

The most common ticks found in Michigan include the American dog tick, blacklegged tick (i.e., deer tick) and the lone star tick. The deer tick has been identified as the vector for Lyme disease. Lyme disease is the most commonly reported vectorborne disease in the United States. According to the Michigan Department of Health and Human Services, *Ixodes scapularis* (blacklegged tick or deer tick) is now endemic in Michigan's Upper Peninsula and western side of the Lower Peninsula. The State of Michigan reports a threefold increase in the number of Lyme disease cases in the past 10 years. The Bemidji Area Indian Health Service joined the Michigan Department of Health and Human Services, Emerging and Zoonotic Infectious Diseases Section (EZID), to increase deer tick surveillance efforts in Michigan and on Indian reservations throughout the state. Tick surveillance was conducted with permission and assistance from:

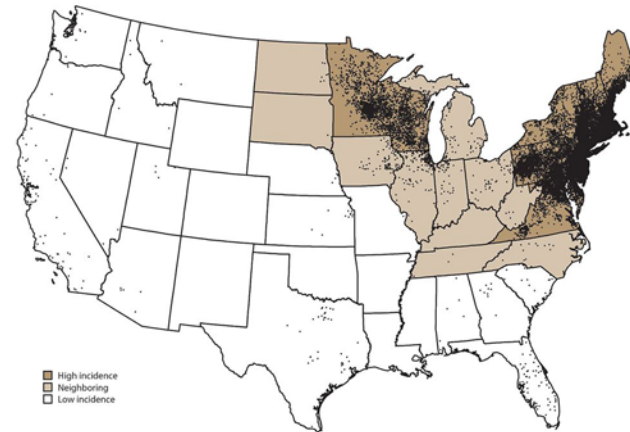
- Hannahville Indian Community
- Bay Mills Indian Community
- Little Traverse Bay Band of Odawa Indians (LTBB)

Figure 1. Map of Indian reservations where tick surveillance occurred in the summer of 2017.



This marks the first time IHS and the Michigan Department of Health and Human Services have worked together on tick surveillance.

Figure 2. Average annual number of confirmed Lyme disease cases, by county of residence – U.S., 2008-2015



(Source: Surveillance for Lyme Disease — United States, 2008–2015. MMWR Surveill Summ 2017;66(No. SS-22):1–12. DOI: <http://dx.doi.org/10.15585/mmwr.ss6622a1>).

Methods

Initial research on the tick population and distribution of Lyme disease in Michigan was conducted and has shown that the incidence of Lyme disease is becoming more prevalent throughout the state. During this initial research it became clear that the counties with no deer ticks or Lyme disease correlated with the tribes we serve.

- Tick surveys were conducted by IHS staff in accordance with the EZID methods
- EZID suggested that tick drags are the most effective way to find deer ticks
- Tick drags in the areas identified were completed throughout the summer of 2017 (Figure 3)
- Surveys were done in conjunction with the Tribe's annual Pow Wows
- The State of Michigan agreed to identify and test deer ticks for the presence of the bacteria that causes Lyme Disease

Results

- A total of 41 ticks were collected in the survey areas (Table 1)
- All ticks collected were the American dog tick
- The outcome of the tick drags correlate with the State of Michigan’s findings
- IHS tick drag data was added to the State tick drag database

Table 1. Tick drag results.

Date	Site	County	Total Time (minutes)	Meters dragged	Total Ticks
5/16/2017	Hannahville Pow Wow Grounds	Menominee	270	1652	35
6/21/2017	LTBB Pow Wow Grounds	Emmet	360	2400	0
6/22/2017	Bay Mills Conservation Office	Chippewa	420	2200	4
6/22/2017	Brimley School	Chippewa	420	2500	1
6/22/2017	Bay Mills Air Strip	Chippewa	420	3500	1
8/18/2017	Hannahville Pow Wow Grounds	Menominee	120	1800	0
8/18/2017	Hannahville School	Menominee	120	1200	0
TOTAL			2130	15252	41

Discussion

Tick surveys were set up in Michigan counties that do not have a deer tick population established. The outcome of this project was to determine if the deer tick has spread into previously unoccupied areas of Michigan. This surveillance was designed to have the best chances for locating deer ticks. Discussion with local environmental professionals put us in the best tick habitat and gave us the best chances for locating the deer tick. A total of 35.5 person hours of tick dragging was completed. The total distance covered was approximately 15 kilometers, with a total of 41 ticks collected. Hannahville Indian Community in Menominee County had the highest population of ticks collected at nearly one tick found every 50 square meters. Deer ticks were not found at the Little Traverse Bay Band or Bay Mills Indian Community, which correlates with the State of Michigan Findings.

Conclusions/Recommendations

- To increase our chances of finding deer ticks in the future, tick traps will be set; subsequent dragging around the traps will follow
- IHS tick dragging will resume in the summer of 2018 and will include surveillance on additional tribal lands throughout the state



DISTRICT POOL SAFETY TRAINING INITIATIVE

Kate Pink

Phoenix Area

Introduction

The Western Arizona District, DEHS, Phoenix Area provides direct environmental health and engineering services to 13 western Arizona tribal communities.

Recreational water safety is an area that DEHS staff have provided assistance ensuring aquatic venues are safe, sanitary, and functioning properly to prevent the spread of recreational water illnesses (RWI). RWIs are caused by pathogenic organisms that when ingested or inhaled can cause infection. Most common infection is gastrointestinal infection caused by the organism *Cryptosporidium* (Crypto). The Western Arizona District has 60 aquatic venues categorized as public swimming pools, wading pools, and spas; most of which are located within hotels/lodging, casinos, RV parks, or community centers.

Methods

The DEHS focus in FY 2017 was to assess aquatic venue operators' knowledge of health and safety regulations, as well as operational knowledge.

Results

Routine and follow-up surveys revealed:

- Operators unaware of critical operational knowledge
- Operators unaware of health and safety regulations such as the Virginia Graeme Baker Act (VGBA) (i.e., installation of anti-entrapment drain covers)
- 14/31 (45%) aquatic venue surveys had violations involving the VGBA

Common Violations in FY17	Percentage
Signage Violation (rules, safety, etc.)	68%
Incomplete/Expired Safety Data Sheets Binders	66%
Incomplete Emergency Action Plans	58%
Virginia Graeme Baker Act	45%
Missing/Broken Flow Meter	42%

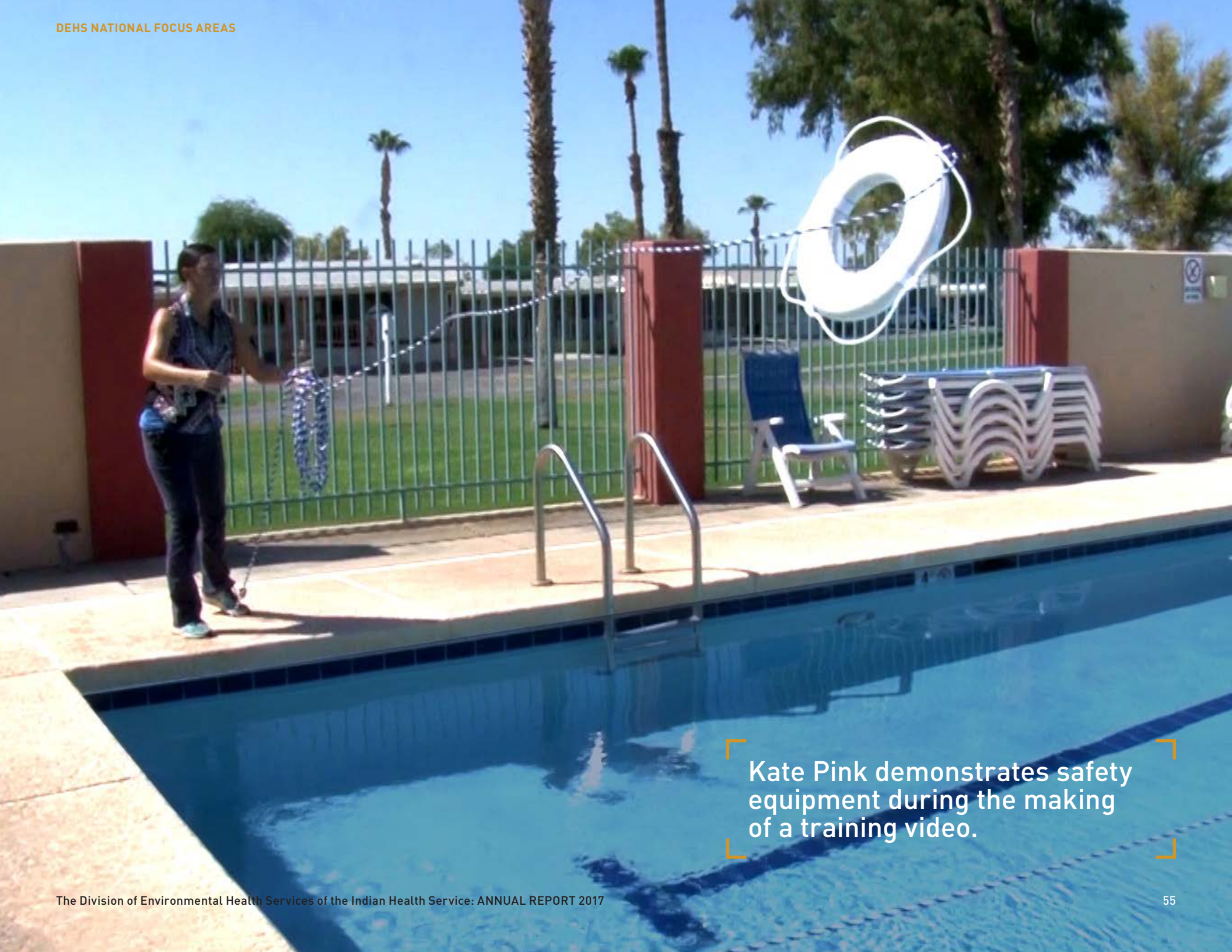
Discussion

The following were actions taken to address some of the identified gaps observed during the FY 2017 survey observation:

- Creation of a training video to educate operators and surveyors of commonly observed aquatic venue violations
 - Video produced in partnership with one of the Fort Yuma Service Unit tribes (April – September 2017)
 - Video piloted throughout the District
- Cross-training of DEHS staff of common findings was conducted throughout the district to ensure consistency during surveys (April – August 2017)
 - The CDC Model Aquatic Health Code (MAHC) was used as the standard during surveys of aquatic venues in the absence of tribal aquatic ordinance

Conclusions/Recommendations

- When shooting an outdoor training video, the environment is a big factor (wind, sun, dust) and should be planned for accordingly
- Operators and DEHS staff should continue seeking ways to educate themselves on aquatic venue safety and identify gaps in knowledge and training
- Positives steps towards increasing knowledge of aquatic venue safety include:
 - Watching IHS training video
 - Cross-training with other aquatic venues to observe their procedures
 - Reviewing the MAHC
 - Attend nationally accredited aquatic safety training
- Tribal Government should formally adopt the MAHC to enhance community aquatic safety
- Continually updating policies and procedures such as Emergency Action Plans and Safety Data Sheets
- Create MAHC-compliant signs for smaller aquatic venues in the District
- Collect data to determine if VGBA, safety data sheet, and emergency action plan compliance rates improve in FY 2018



Kate Pink demonstrates safety equipment during the making of a training video.

HEALTHCARE ACCREDITATION MOCK SURVEY PROGRAM

Jennifer Nanez, Alleyne Toya, Brian Hroch, Tom Plummer, Gary Carter, Vanessa Vicenti, Will Darwin, Melvina Murphy, Olowañ De Herrera, Gordon Quam
Albuquerque Area

Introduction

In 2017, a team of Albuquerque Area Office and Service Unit staff performed “Mock (Accreditation) Surveys” of the Albuquerque Area’s IHS facilities, and tribal (638) facilities to:

- Increase healthcare facility programs’ quality of service and accreditation compliance
- Assist healthcare facilities in preparing for “official” accreditation surveys from:
 - Accreditation Association for Ambulatory Health Care (AAAHC)
 - The Joint Commission (TJC)
 - Commission on Accreditation of Rehabilitation Facilities (CARF)
- Increase compliance with Centers for Medicare and Medicaid Services (CMS) Conditions of Participation

Mock surveys are an integral part of the Albuquerque Area’s Continuous Accreditation Readiness Program (CARP).

Methods

Team Composition. The composition, commitment, and competencies of the Mock Survey Team were critical to the success and effectiveness of the mock surveys. Staff critical to the mock survey process included:

- Local facility staff and leadership
- Directors/managers/officers with primary responsibility for accreditation chapters on:

– Behavioral Health	– Leadership
– Environment of Care	– Credentialing of Medical Staff
– Infection Control and Prevention	– Quality Assurance
– Laboratory	– Provision of Care
– Point of Care Testing	– Record of Care
– Nursing	– Medication Management
- Area Office consultants in each of these program areas

Throughout this lengthy process, the emphasis for the team members was to approach these surveys as consultants who would develop a continuing, collaborative relationship with the facilities.

Planning. With official surveys approximately every 36 months, the mock surveys were targeted about 18 months in advance of the next expected official survey date to allow the facilities sufficient time to take corrective actions.

The Mock Survey team, facility leadership, and primary staff began planning the mock survey dates up to 6 months in advance. The commitment to these dates had to remain a priority due to the difficulty in coordinating the schedules of numerous IHS staff at various locations, all of whom have demanding schedules.

To facilitate the planning, a presentation was made to the Albuquerque Area’s Governing Body to:

1. Discuss the intent and objectives of the mock surveys
2. Present the Area’s Mock Survey schedule
3. Provide an overview of the timeline of local activities at the healthcare facility

A Mock Survey Guide, with listings of required documentation, was also developed and distributed to the primary participants to assist in preparing for the mock surveys to make more efficient use of time during the mock surveys.

Mock Survey Performance Improvement. As an internal Performance Improvement (PI) effort for the mock surveys, suggestions for improvement were solicited from previous and future mock survey participants. Implemented improvements included:

1. More comprehensive program coverage
2. Cross training of Area consultants
3. Additional “surveyor days”
4. Draft report provided at survey closing conference
5. TJC report format, including SAFER Matrix scoring methodology

Results

- As a result of the planning, performance improvement and collaboration amongst the staff, the mock surveys were successful in identifying numerous opportunities for improvement in the Area's healthcare facilities
- At each survey closing conference, a draft report was provided so facilities could immediately begin taking corrective actions; the draft report was designed as a working document and "punchlist"/corrective action plan
- Within 30 days of the mock survey, a revised report was provided to the healthcare facility; as a follow-up to the mock surveys, a summary of the common and critical findings were presented to the Area's Governing Body

Discussion

To maintain continuous accreditation readiness, numerous activities and components are needed to meet the accreditation standards. Mock surveys serve as an important part of increasing the quality of patient care and accreditation readiness. At the Area level, Mock surveys also assist with prioritizing and planning Area-wide accreditation support and management.

Conclusions/Recommendations

The identified opportunities for improvement are being addressed by the facility staff, as the Mock Survey Team continues to provide consultation and support. The healthcare facility staff were very complimentary of the mock survey process. The healthcare facility staff recognized the mock surveys as a critical element in the Area's CARP and as an essential method to identify opportunities to improve quality of care and continuous accreditation readiness. The Mock Survey Team will distribute another survey to solicit suggestions for improvement and will continue to work with the healthcare facility staff to improve this process.



REDUCTION OF SHARPS INJURIES IN DENTAL PERSONNEL

Tim Taylor

Bemidji Area

Introduction

An analysis of Webcident data in the Bemidji Area for 2013 to 2017 showed that dental personnel experience sharps injuries at a higher rate than that of their peers in other patient care departments. This presents a higher risk level of bloodborne pathogen exposure to dental personnel. Complex dental procedures can create an increased risk of sharps injuries due to the unique layout and patient positioning in the dental operatory. A comprehensive sharps injury prevention strategy is needed in dental departments in the Bemidji Area to reduce sharps injuries to dental personnel.

Methods

A Webcident analysis was conducted and bloodborne exposure incidents were analyzed by department at the Red Lake Hospital, Cass Lake Hospital, and White Earth Health Center, for 2013 to 2017. Needle stick/puncture and bloodborne exposures were included in the data set. Dental personnel includes Dentists, Dental Hygienists, and Dental Assistants. Dental personnel were compared to nursing, laboratory, pharmacy, and housekeeping personnel at the above listed federal Indian Health Service healthcare facilities.

Results

Survey data indicates that dental personnel experience rates of sharps injuries three times higher than nursing and other patient care staff at White Earth Health Center and two times higher than nursing and other patient care staff at Cass Lake Hospital. Sharps injury rates at Red Lake Hospital were evenly distributed between dental and other patient care staff (*Figure 1*).

Discussion

Based on data comparison, it is clear that dental care providers experience a much higher rate of sharps related injuries than their other patient care peers. This trend was found in two of three IHS facilities in the Bemidji Area. Sharps injuries in dental personnel occurred not only during patient care procedures but also during post procedure cleaning of the operatory and instrument disinfection. A preliminary literature search on the subject reveals that these results are a common finding at other health care facilities as well.

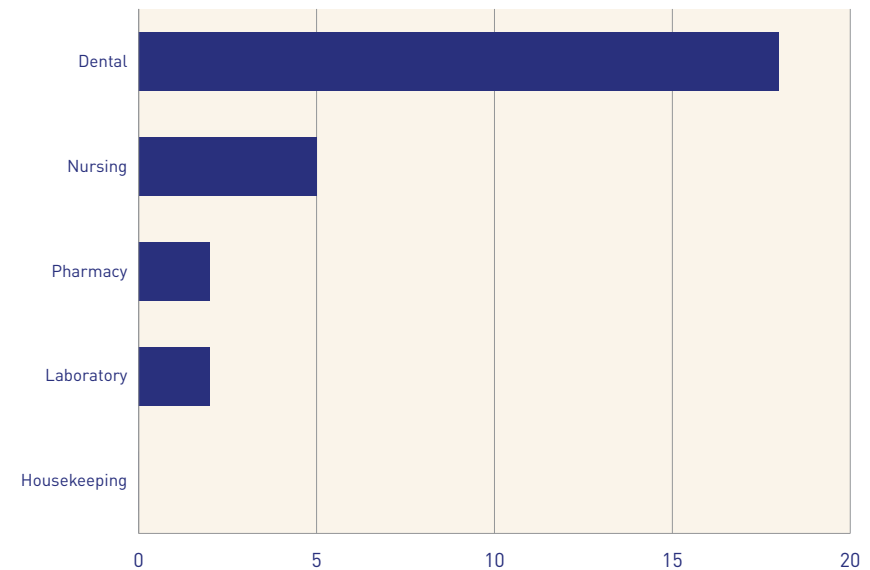
Conclusions/Recommendations

Recommended mitigation strategies to reduce sharps injuries in dental personnel include:

- Changing needle recapping to a single handed technique
- Engineering controls that include self-sheathing anesthetic needles and scalpels
- Placement of sharps containers close to use areas in the dental operatory
- Ending the practice of passing unsheathed needles between personnel during procedures
- Wearing heavy duty utility gloves during necessary patient care cleanup procedures

Implementation of these procedures in dental operatories should produce a noticeable reduction in sharps injuries to dental personnel. Outcomes from our efforts to reduce sharps related injuries will be tracked over the next three years.

Figure 1: White Earth Health Center Sharps Injuries (2013-2017).



NITROUS OXIDE EXPOSURE ASSESSMENTS AT TRIBAL DENTAL CLINICS IN CALIFORNIA

Tim Shelhamer, Brian Lewelling, Carolyn Garcia

California Area

Introduction

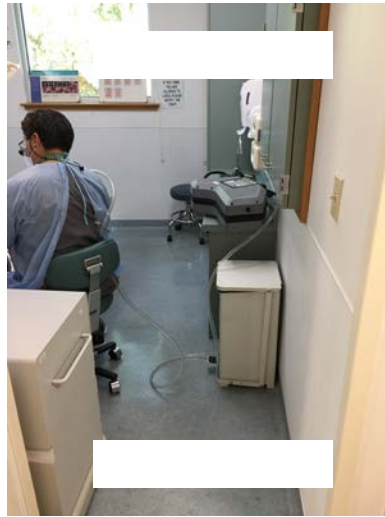
Nitrous oxide is commonly used in dentistry to reduce pain and anxiety of pediatric patients. Adverse health risks to Dental staff chronically exposed to low levels of waste nitrous include reproductive harm, impaired psychomotor health effects, and damage to the liver and kidneys. The DEHS, California Area, has infrequently assessed nitrous oxide exposure in tribal dental clinics.

Methods

A risk assessment of tribal dental clinic conscious sedation practices was assembled into a database and we began offering exposure assessments to high priority facilities. NIOSH guidelines, dental publications, and checklists and guidance documents from other IHS Areas were used to develop a California Area guideline for the evaluation of equipment and practices. A Thermo Scientific™ MIRAN SapphIRe portable analyzer was used for exposure assessments and equipment leak checks during normally scheduled procedures. Clinics received written reports with recommendations.



A damaged scavenger vacuum gauge.



The sampling train worn by a dentist during a procedure.



The MIRAN SapphIRe was used to detect a leak in a portable nitrous oxide system.



LCDR Shelhamer discusses nitrous oxide assessment results with dental staff.

Results

Four nitrous oxide exposure assessments have been done. Although exposures were below the IHS-adopted ACGIH 8-hr TWA threshold limit value of 50 ppm, multiple excursions above the 250 ppm ACGIH ceiling limit occurred and all exposures exceeded the NIOSH recommended limit of 25 ppm during a procedure.

Time weighted averages per procedure duration measured 282, 430, 288, and 73 ppm.

Discussion

Common findings included:

- Inadequate scavenging unit flow rates
- Damaged system components
- Lack of auxiliary exhaust systems

Conclusions/Recommendations

Outreach to tribal clinics and scheduling additional assessments is ongoing. Findings have been consistent with the literature and IHS facilities in other areas.

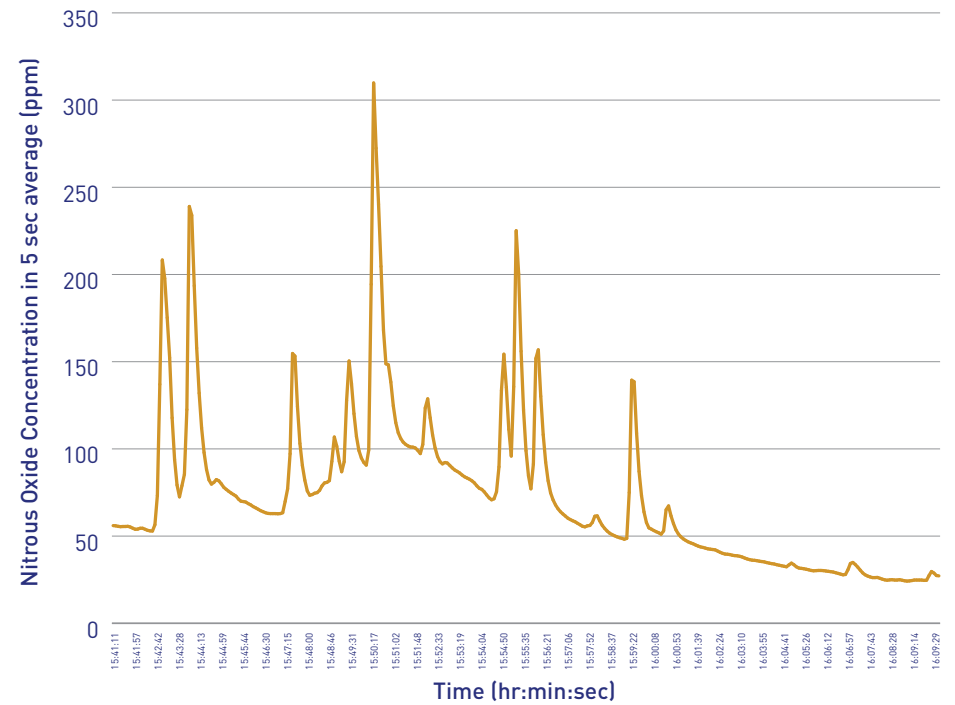
All assessments have documented exposures greater than NIOSH recommended exposure limit.

Improved training and procedures for dental staff are needed and should include verifying scavenging flow rates prior to and during nitrous oxide administration.

Challenges include no full-time Institutional EH staff and coordinating assessments at geographically isolated clinics that use nitrous oxide infrequently.

Outcomes include the adoption of a risk-based assessment schedule for nitrous oxide by the California Area DEHS.

Figure 1: Nitrous Oxide Concentrations in the Dentist’s Breathing Zone while Performing a 28-minute Procedure



PASSIVE AND ACTIVE SAMPLING OF OCCUPATIONAL EXPOSURES TO NITROUS OXIDE AMONG IHS DENTAL EMPLOYEES AND POSSIBLE MITIGATING FACTORS

John Hansen¹, Theodore J. Juarez², Charles Woodlee¹, Mary Brueggemeyer², Maria Majar²

¹Indian Health Service, Headquarters

²Uniformed Services University

Introduction

- Nitrous oxide (N₂O) presents an occupational exposure health risk in IHS dental clinics despite use of engineering and environmental controls like ventilation and active scavenging systems
- Historical IHS air sampling reported N₂O breathing zone concentrations well above the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) averaging over the 250 per million by volume (ppm_v) excursion limit during dental procedures with several maximum readings over 500 ppm_v²
- IHS monitoring and N₂O exposure control policies revised to include step-by-step guidelines (with pictures) to help guide employees through leak checks, maintenance, and overall safety procedures

Investigation was needed to determine if the revised policy was associated with improved control of N₂O personal breathing zone concentrations.

Methods

Collected and analyzed 41 breathing samples of Pediatric Dentist and Dental Assistant Similar Exposure Groups. Additionally, this study tried to identify possible mitigating factors to help prevent exposure, including air changes per hour (ACH), N₂O flow rates and percent N₂O used. This was conducted across six dental clinics during 23 procedures in the southwest region of the U.S. from July – November 2016 using two Thermo Scientific™ MIRAN SappHRe (Franklin, MA) portable analyzers utilizing an infrared spectrometer for gas monitoring (MIRAN), and Advanced Chemical Sensor (Boca Raton, FL) passive dosimeters (ACS). All ACS dosimeters were analyzed by an AIHA accredited laboratory.

- The MIRAN and ACS dosimeters were attached at the beginning of each procedure to obtain a procedural-TLV
- The MIRAN was used to characterize excursion levels during each procedure
- Excursion sampling was logged every 15 seconds for the duration of each procedure by the MIRAN

- Exposure results were compared to the ACGIH TLV of 50 ppm and TLV excursion limit of 250 ppm
- Air changes per hour (ACH) were determine using a balometer flow capture hood or thermal anemometer to measure exhaust rate and calculated using the volume of the operatory
- N₂O flow rates and percent N₂O used were determined by the delivery system and set by the dentist performing the procedure

Results

- Dentists had higher procedural Time Weighted Averages (TWAs) than dental assistants 81% and 86% of the time when comparing sampling methods
- Despite dentists having higher N₂O exposures, differences between procedural-TWAs were not significantly different ($p = 0.106$ and 0.071)

Figure 1 shows the maximum N₂O concentration per procedure compared to the excursion limit of 250 ppm_v

- 21 of 41 procedures had at least one excursion over 250 ppm_v
- 51% of the procedures exceeded the ACGIH TLV-excursion of 250 ppm_v for N₂O



Sampling device locations;
[blue] ACS dosimeter and
[black] active sample hose.

Figure 1. Maximum excursion per procedure.

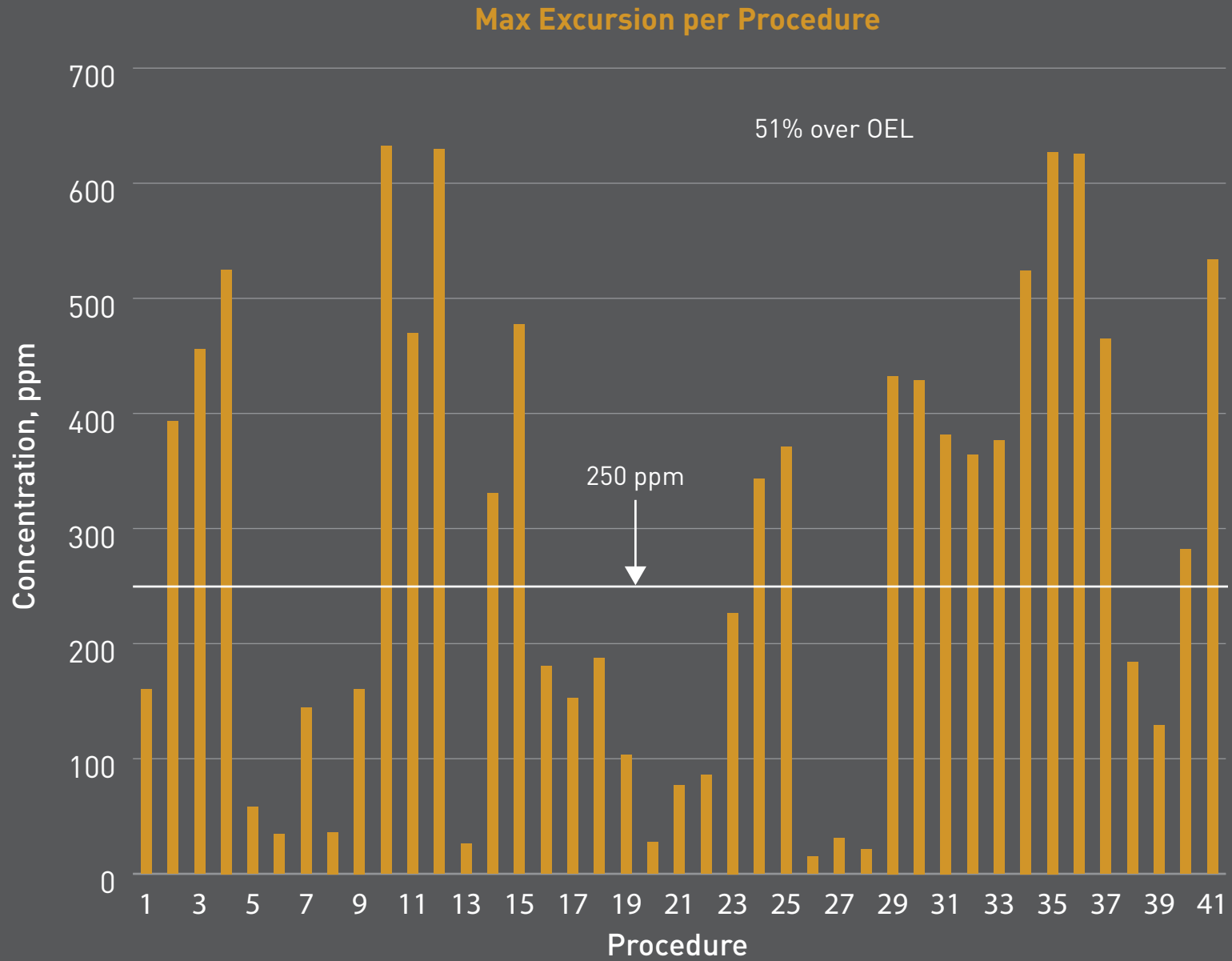


Table 1 provides the characterization by SEG.

- 204 excursions over 250 ppm_v were measured throughout the 41 breathing samples; 151 for the dentist and 53 for the dental assistant
- Each SEG had two 8-hour TWAs over 50 ppm_v using the ACS dosimeter

Table 1. Characterization by SEG.

	Dentist	Dental Assistant
n	8	10
Excursions	151	53
8-hour TWA over 50 ppm _v	2, ACS	2, ACS
>500 ppm _v - ACS	3	1
UTLs, mean ppm _v	1245	802

Average length of procedure – 0.49 hours

Table 2 shows the ACH for each operatory and if they had at least one excursion over 250 ppm_v. All operatories exceeded the minimum requirement of 12 ACH. However, all but one operatory still had an excursion over 250 ppm_v.

- **Operatory 4** had no excursions over 250 ppm_v, but had an ACH rate over 70; this is suggestive that more ACH may be helpful in controlling exposure than currently recommended by IHS policy
- N₂O concentrations did not appear to be associated with ventilation and process characteristics such as ACH and N₂O generation rates, likely due to a narrow range of observations; additional studies should investigate the role of ventilation and process characteristics on N₂O concentrations

Table 2. Air changes per hour per operatory and if an excursion over 250 ppm_v occurred.

Operatory	Air Changes per Hour	Excursion above 250 ppm
1	27.75	Yes
2	23.50	Yes
3	21.18	Yes
4	70.67	No
5	14.93	Yes
6	14.43	Yes
7	32.71	Yes

Discussion

High levels of N₂O were seen throughout this study. There are many variables that could contribute to these high levels, many of which were difficult to control. However, focus should be on minimizing high N₂O levels through effective engineering and administrative controls to help mitigate future concerns.

Conclusions/Recommendations

- Procedure based sampling serves as a better method of characterizing N₂O exposures during short term dental procedures than monitoring exposures only over an 8-hour shift; excursion levels above the 250 ppm_v were found to be an important occupational exposure concern
- High UTLs seen in this study indicate highly variable N₂O concentrations, suggesting a variety of process characteristics may be responsible for N₂O concentrations; this also suggests 8-hour TWAs may become a significant concern if multiple dental procedures utilizing N₂O are conducted in succession
- While concentrations were not significantly different, dentists appear to be at greater risk of high N₂O levels than dental assistants

A LOOK INSIDE HEALTH AND SAFETY IN COSMETOLOGY: SALONS – SPAS – BARBER SHOPS

Patricia Wrona

Phoenix Area

Introduction

The Western Arizona District, DEHS, Phoenix Area provides direct environmental health and engineering services to 13 western Arizona tribal communities. The estimated number of establishments served by the DEHS is estimated at 800 for the District, of which 15 are “Barber/Beauty Salon” or classified as “Type 33” establishments. This establishment type is defined as a business that renders services for cutting and dressing hair, body piercing, body tattooing, or nail care. Tanning salons and massage parlors are also included in this definition. Formal training on how to properly perform environmental health and safety assessments of these establishments has been an unmet need for DEHS staff.

Methods

The creation of this project involved multiple phases:

Phase 1: Research of existing guidelines, rules, and regulations specific to “Barber/Beauty Salon” establishments

- Chapter 5 of the Arizona Administrative Code (AAC) – Board of Barbers
- Chapter 10 of the Arizona Administrative Code (AAC) – Board of Cosmetology
- OSHA regulations, sample checklists, etc.
- Key informant interviews

Phase 2: Identifying key technical elements to consider when assessing “Barber/Beauty Salon” establishments, including

- Licensing, Policies and Procedures
- Infection Control and Workplace Safety

Phase 3: Development of PowerPoint training module and presentation to EHS personnel

Phase 4: Applying knowledge gained through the training to actual establishment assessments

Results

- Completed training module highlighting key items to target during assessments of Type 33 establishments
- Training module research and development enhanced DEHS staff technical competencies and confidence in assessing Type 33 establishments
- Training module included key questions DEHS personnel should ask operators
- Consistency within DEHS program in assessing Type 33 establishments
- Establishment operators benefit by better understanding DEHS expectations, applicable regulations, and industry requirements
- Positive public health and safety impacts for establishments

Conclusions/Recommendations

- Shadow peers from other agencies who inspect Type 33 establishments to increase technical competencies
- Cross-train and standardize all DEHS staff in assessing Type 33 establishments
- Continue to tailor the training module based on field tests results and feedback

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. A project with an emphasis on healthy homes was conducted in 2017 can be found on the following pages.





OPIOIDS AND THE INJURY PREVENTION ROLE: WHERE DO WE FIT IN?

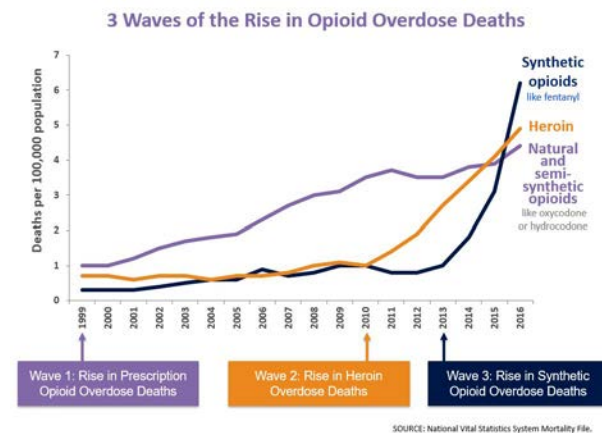
Rob Morones, Jason Hymer, Andrea Tsatoke

Phoenix Area

Introduction

The Problem

- Opioids kill more than 140 Americans each day in the U.S.
- Overdose deaths involving opioids have increased dramatically in recent years (graph source: <https://www.cdc.gov/drugoverdose/epidemic/index.html>)
- The economic burden of prescription opioid misuse alone in the U.S. is \$78.5 billion a year, including the costs of healthcare, lost productivity, addiction treatment, and criminal justice involvement (National Institute on Drug Abuse)



In Arizona

- Opioid-related deaths in AZ increased 74% since 2012
- In 2016, there were over 1500 drug overdose deaths in AZ; over 50% contributed to opioids (Arizona Department of Health Services Opioid Report)

American Indian/Alaskan Native Rate

- Opioid-related deaths from 2007-2016 = 6 per 100,000 (Centers for Disease Control and Prevention)

The AZ Governor Declares a State of Emergency

In June of 2017, a Health State of Emergency was declared by the Governor of AZ. The declaration included four strategies to address the crisis:

1. Prevent prescription opioid drug abuse through appropriate prescribing practices
2. Develop guidelines to educate healthcare providers on responsible prescribing practices
3. Expand access to treatment, especially Medication Assisted Treatment (MAT)
4. Reverse overdoses through the distribution of naloxone, including mandatory reporting of use

Naloxone

- Rapidly reverses the effects of an opioid overdose
- Made available by IHS to BIA Law Enforcement through an Memorandum of Agreement (Tribal Police Departments excluded)
- ~\$100/dose

Methods/Results

Connecting Tribes to Naloxone – State Partnerships

- Facilitated the process for AZ and NV Tribal first responders to receive Naloxone nasal spray packs from their state health agencies at no charge

Tribe	Naloxone doses
Cocopah Wellness Center	2
CRIT Fish and Game Department	6
Fort Mohave Police Department	36
Hopi Ranger	24
Tonto Apache Police	12
Yavapai-Apache Tribal Police	24
TOTAL	104

DEHS NATIONAL FOCUS AREAS

Safeguarding Medications - Medication Lock Boxes

- Five (5) focus groups among elders and Community Health Representatives were facilitated by OEHE staff to determine the acceptability of using medication lock boxes in the home environment
- N=58 participants; 3 Tribes: San Carlos Apache, White Mountain Apache, and Hopi
- Results strongly supported that elders would use lock boxes to secure their medications

Prescribing Practice Improvement

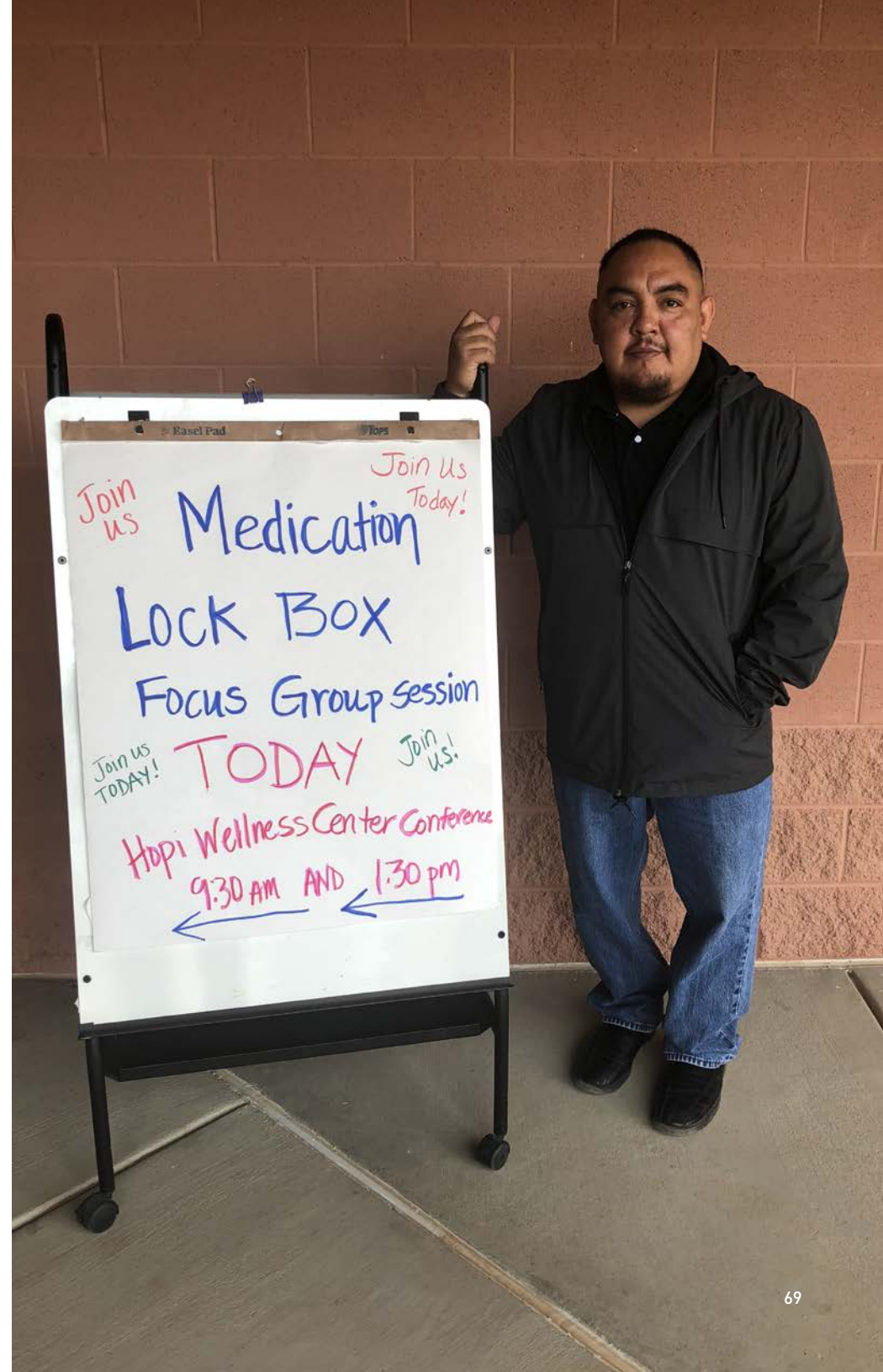
- Prescription Drug Monitoring Program (PDMP) survey
- OEHE staff have developed a survey tool to determine PDMP use among healthcare providers; PDMPs are systems that collect, monitor, and analyze electronically transmitted prescribing data submitted by pharmacies

Improving Data Quality

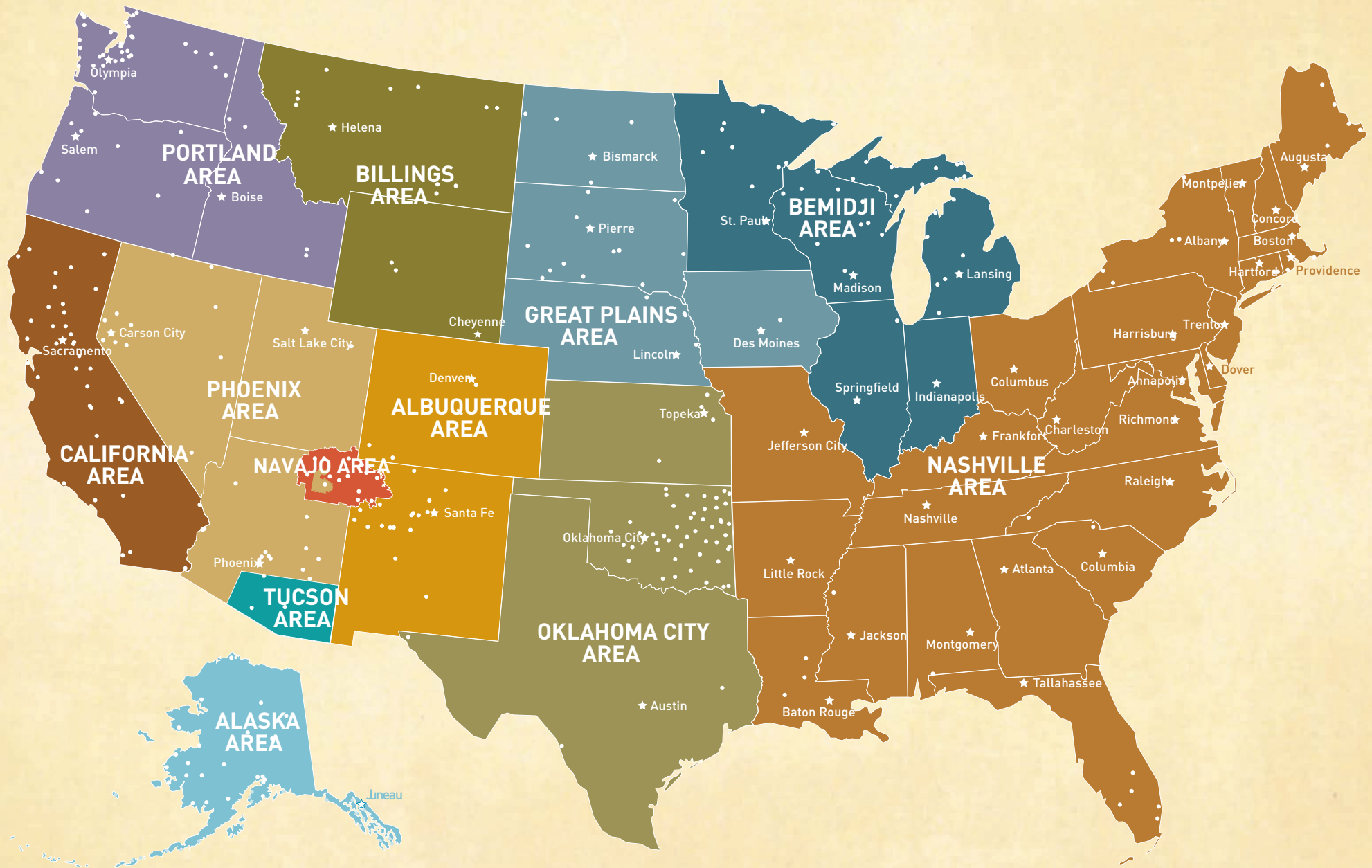
- Post mortem blood sampling through collaboration with the AZ state laboratory at no charge
- Improve on fatality injury data (conducting post mortem blood draws when autopsies are not completed due to remoteness, cost, or invasiveness of procedure)
- DEHS staff participated in a project to help determine a standard for coding (ICD9 and 10) opioid events in AZ

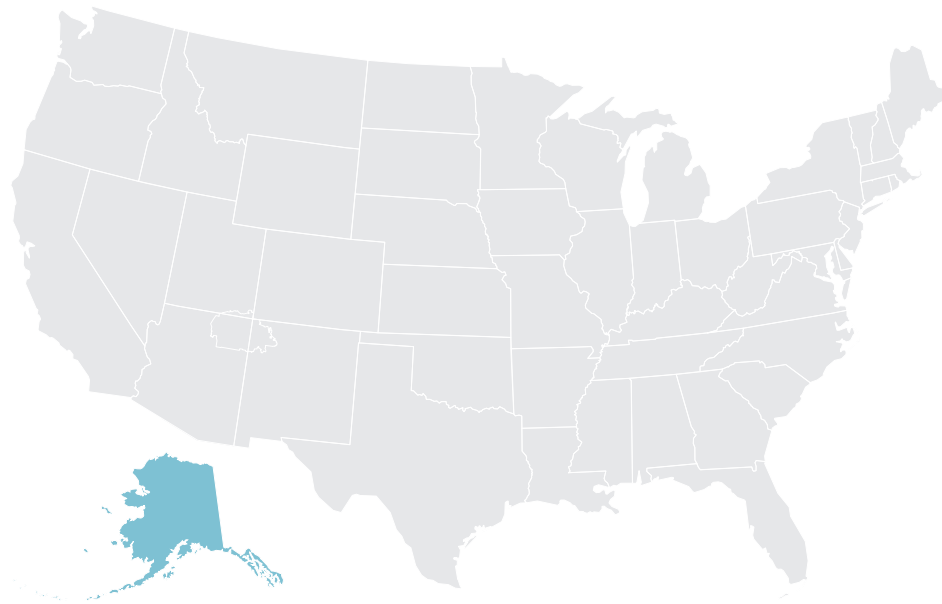
Conclusions/Recommendations

- Connect tribes to local health care facilities via Memorandums of Understanding for Naloxone
- Conduct an opioid-specific epidemiology project for Phoenix Area service population
- Implement a medication lock box pilot project based on the focus group findings
- Continue PDMP surveys at health care facilities



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 wellbeing of AI/ANs.

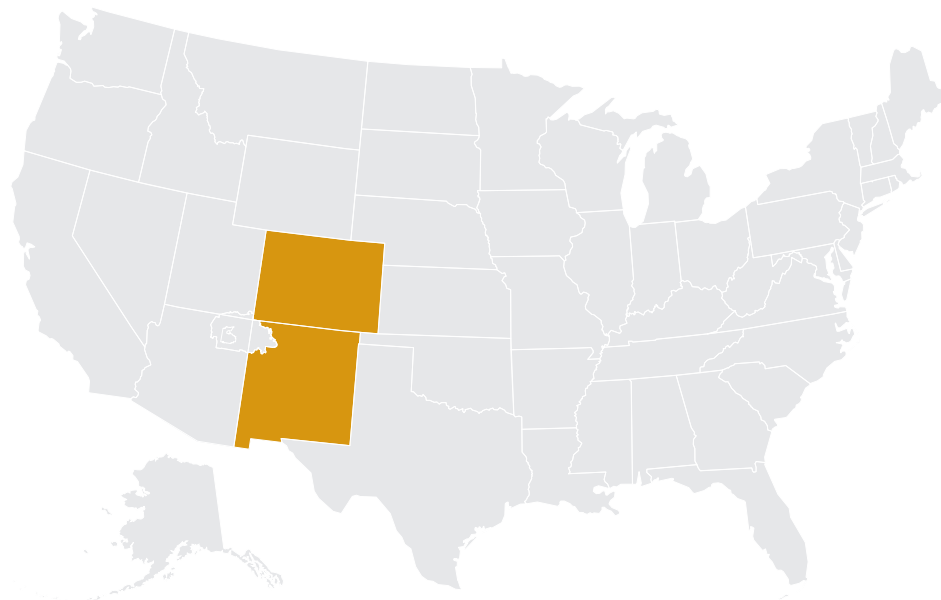


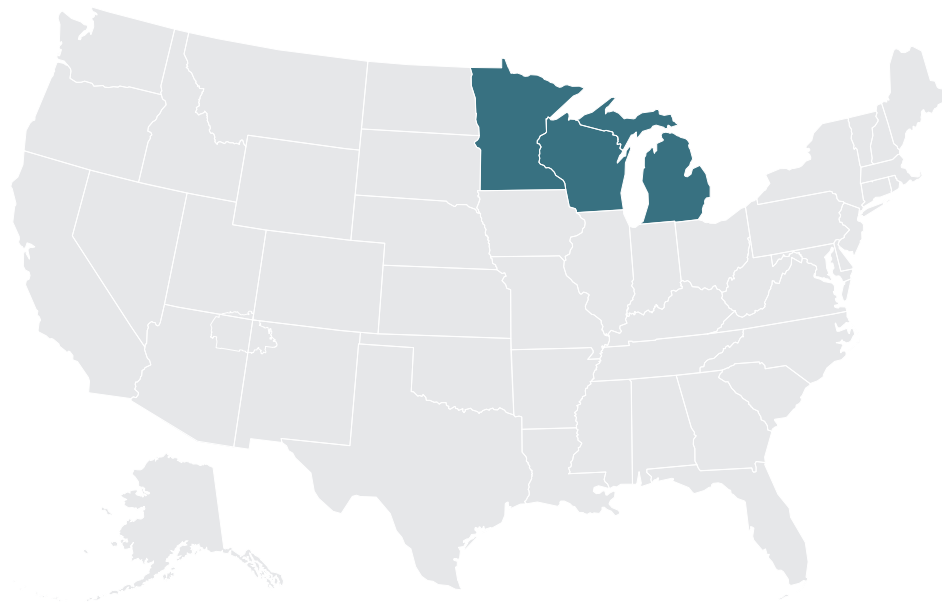
Albuquerque

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 are located in Bemidji, Minnesota. The second district office is located in Rhinelander, Wisconsin and there is a field office in Ashland, Wisconsin.

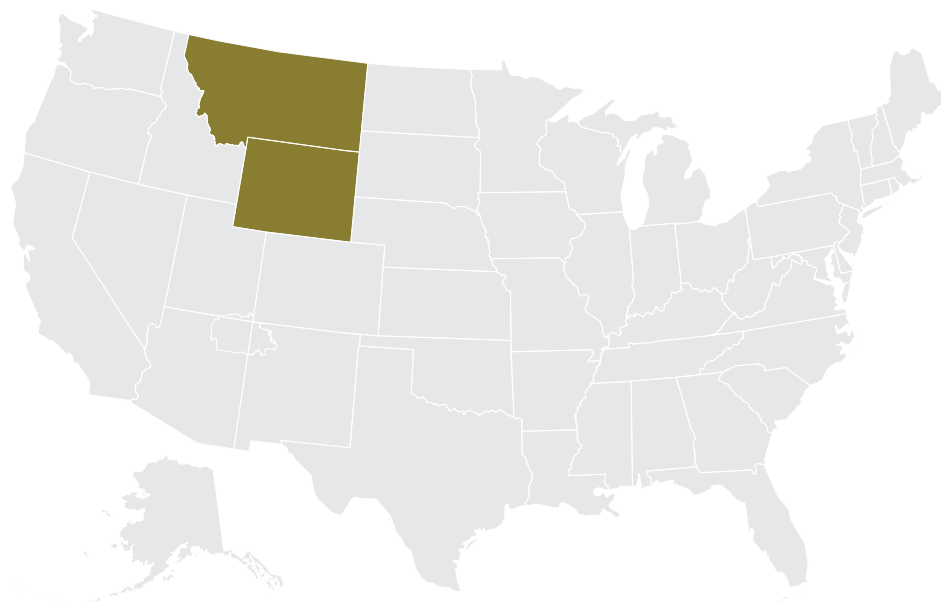
The Bemidji Area provides EH services in the form of surveys, investigations, testing and monitoring, training, policy development, program support and facility plan reviews. This is done in effort to improve food safety, solid and liquid waste management, water quality, hazard communication, epidemiology, 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.

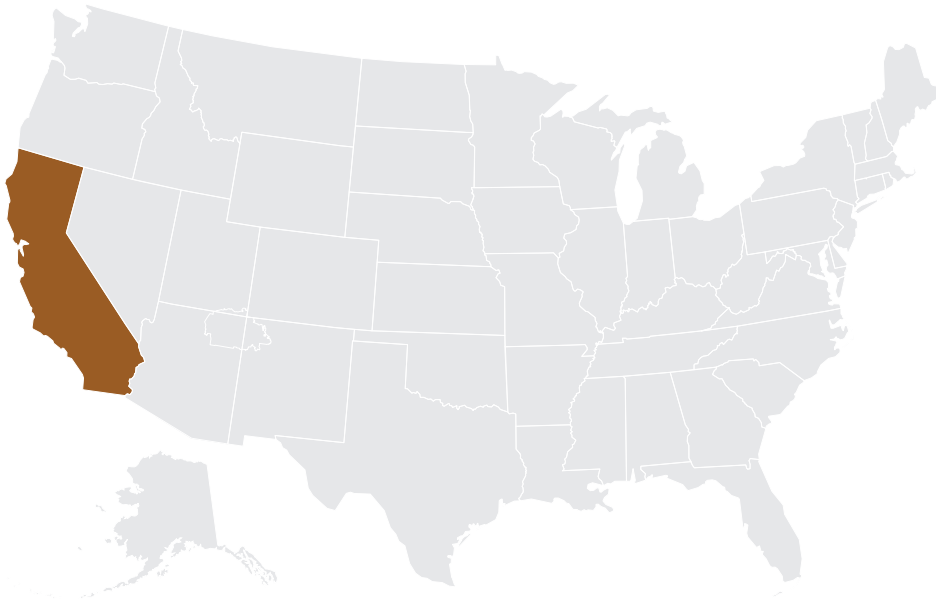


Billings

The Billings Area DEHS serves nine tribes (totaling 70,000 people) on eight 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.

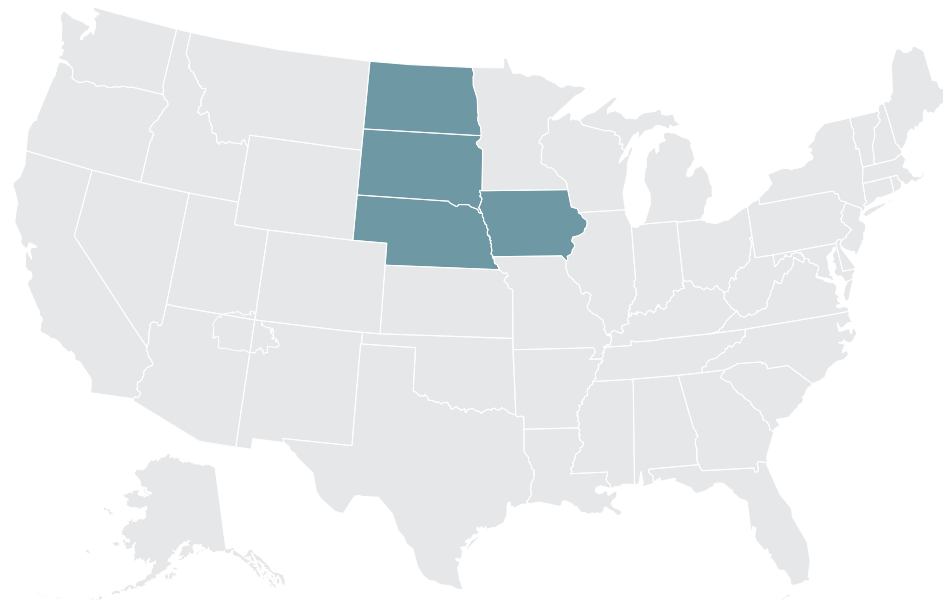
The majority of services provided by California Area DEHS fall into the category of general environmental health. Technical consultation, training, surveillance, and investigative services are provided in the following program areas: children's environmental health, communicable disease control and epidemiology, 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.

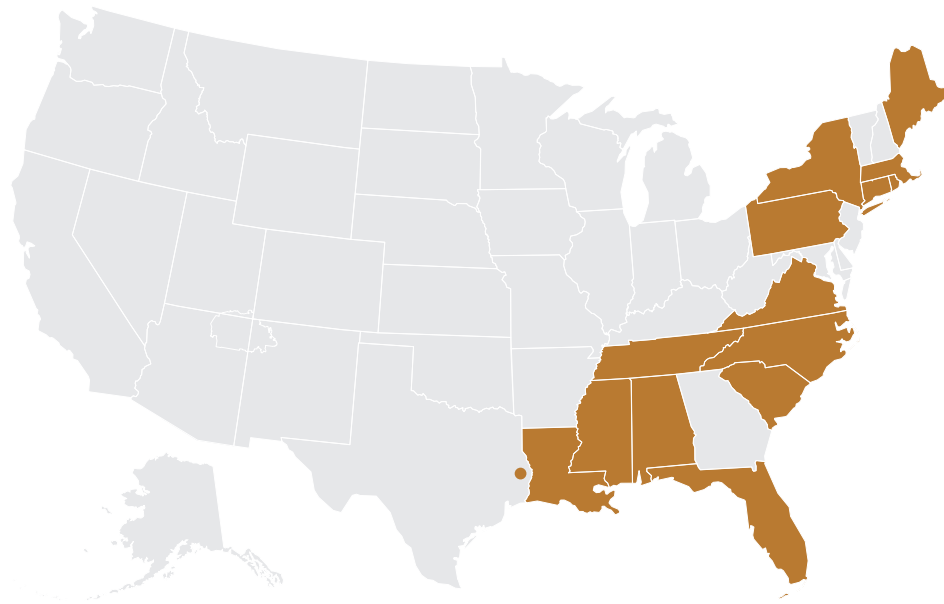
The California DEHS injury prevention program is dedicated towards increasing the capacity of tribes to reduce injury problems within their community. Our program currently provides technical assistance, funding, and other resources to tribes for use in the collection of injury data, training and the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





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, Virginia, 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.



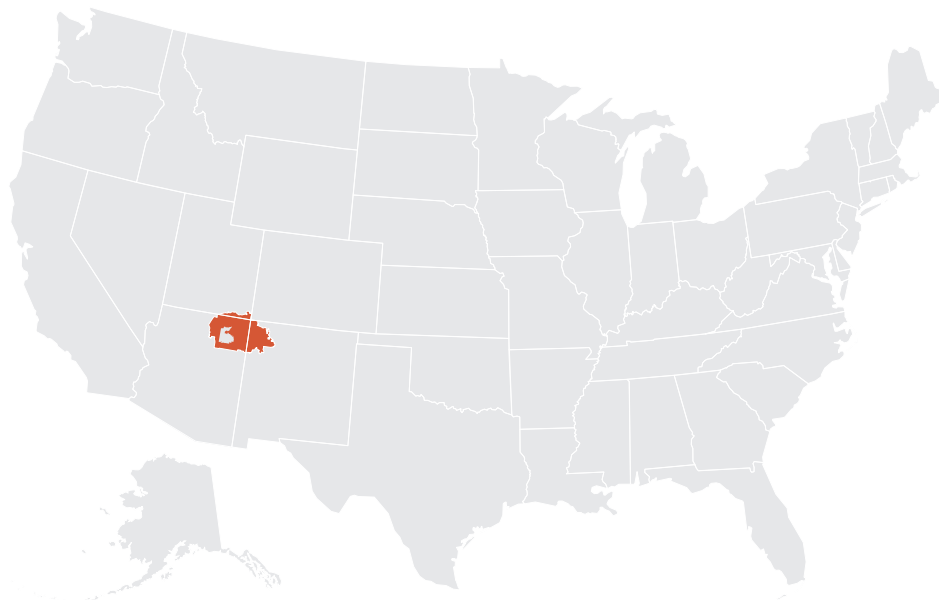
Navajo

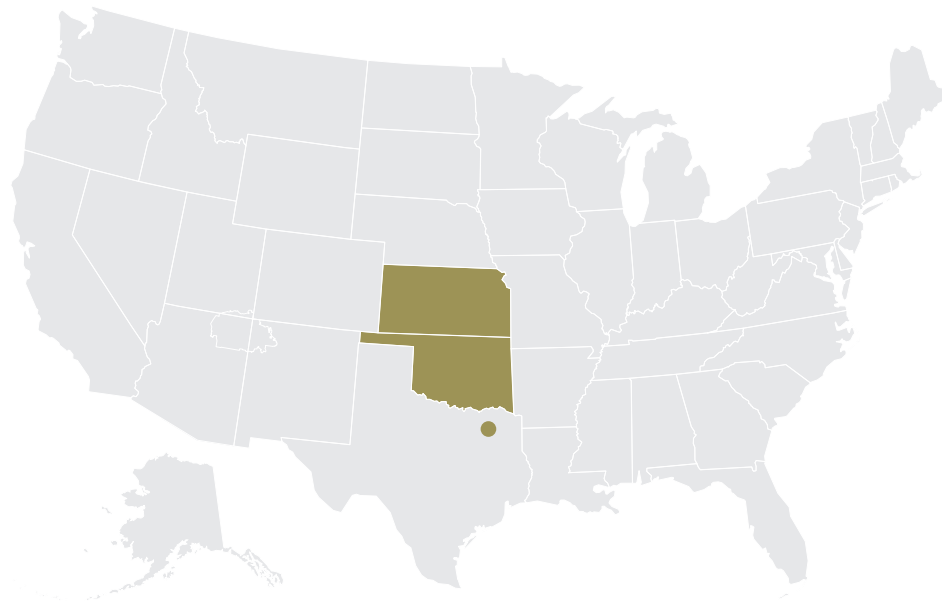
The Navajo Area DEHS is a large comprehensive EH program serving more than 250,000 members of the Navajo Nation and the Southern Band of San Juan Paiutes. EH services are provided to Indian communities on reservations encompassing more than 25,000 square miles of land in northeast Arizona, northwest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





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.

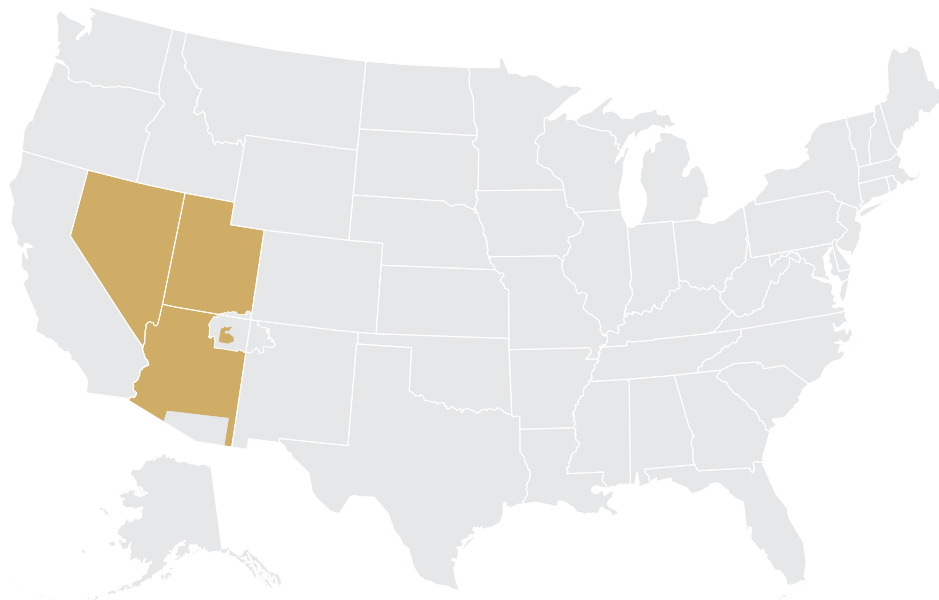
The DEHS Program includes eleven staff members: one Director, one IEH Specialist, one Injury Prevention Specialist, one District Environmental Health Officer, and seven field staff who provide a wide range of EH services that include, but are not limited to: food safety, solid and liquid waste management, 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.

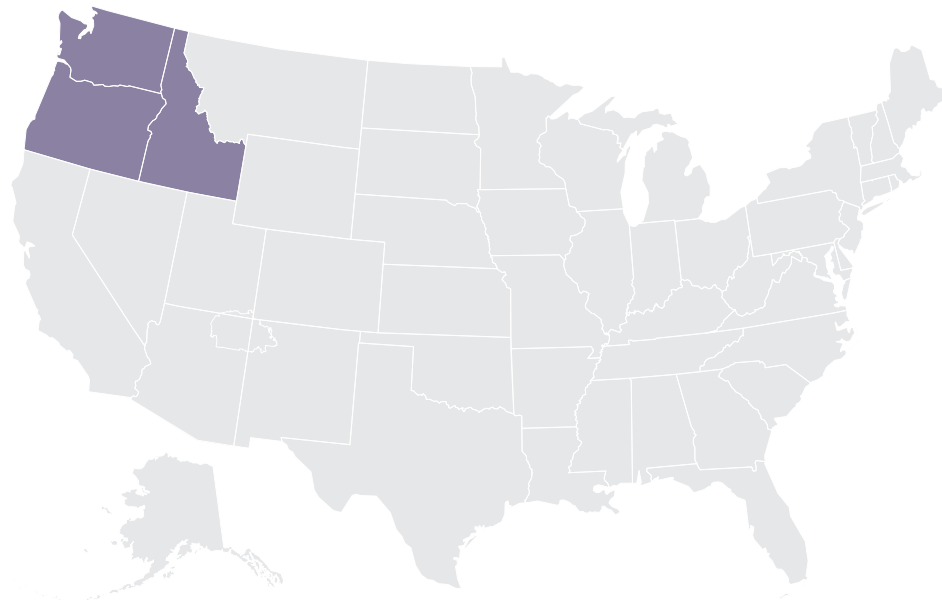
The DEHS is also responsible for specialized services in the areas of IP and IEH. The goal of the Oklahoma City Area IP program is to reduce the incidence and severity of injuries and deaths within the tribes they serve and work in collaborations with. IP services include training, partnership building, 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

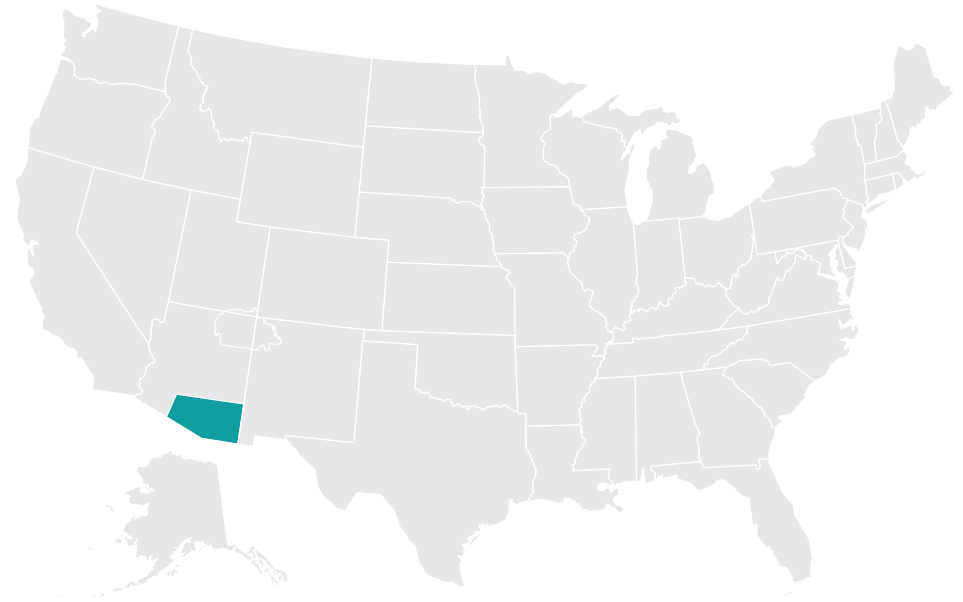
The IHS Portland Area provides a health system for an estimated 150,000 American Indian residents of Idaho, Oregon, and Washington. Health delivery services are provided by a mix of health centers, health stations, preventive health programs, and urban programs. The Portland Area DEHS works in partnership 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, vectorborne 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.



Looking Ahead into 2018

For 2018, the DEHS looks forward to accomplishing the following:

- Improving the usability and data quality of the DEHS WebEHRS system
- Exploring advanced data analysis and reporting features for WebEHRS and NDECI through the use of Business Intelligence software
- Soliciting and selecting a contractor for the IHS Injury Prevention Specialist Fellowship advanced training program
- Developing and supporting an alternate IEH residency program while continuing to support the two-year Uniformed Services University of the Health Sciences/IHS IEH MSPH and residency program

IHS Area DEHS Program Directory



Partnerships are an essential force multiplier that enhance the successful implementation of community-based environmental health services.

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The Division of Environmental Health Services

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INDIAN HEALTH SERVICE

Office of Environmental Health and Engineering

Division of Environmental Health Services

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