ANNUAL REPORT **2018**

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 2018

This Annual Report for Calendar Year 2018 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:

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www.ihs.gov/dehs

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On the cover: The 2018 photo contest winner... LT Riley Grinnell conducting a food safety survey of a temporary food vendor at the 72nd annual Shinnecock Indian Powwow, taken by CDR Tanya Davis, Environmental Engineer (Nashville Area; September 2018)

Message from the Division Director

Kelly M. Taylor, M.S., R.E.H.S.
Division of Environmental Health Services

I am proud to present the Division of Environmental Health Services (DEHS) Annual Report for 2018. This report covers activities and projects conducted by Indian Health Service (IHS) and Tribal/Corporation environmental health partners throughout the nation. The intent of the report is two-fold: to capture historical program information so that it will not be lost to the ages and to highlight activities and accomplishments that address the five DEHS national program focus areas and support the Indian Health Service priorities.

It has always been difficult to demonstrate the health impact of our activities when we prevent something from happening in the first place; but it is not impossible. Even though we may not be able to show that our activities directly improve morbidity and mortality rates, you cannot argue that supporting the implementation and enforcement of tribal seatbelt laws, fire protection laws, or food codes are crucial steps in improving the public's health. Throughout this report, we highlight Area activities that demonstrate our program's impact on the health of American Indians and Alaska Natives (AI/AN).

We accomplished many of the objectives planned for this year.

- We improved the usability of the DEHS Web-based Environmental Health Reporting System (WebEHRS): the WebEHRS change control board met throughout the year and 26 significant system changes were made which enhanced usability; and 21 establishment type definitions were revised to more accurately align with current industry terminology and better capture the work staff perform (definition changes will be implemented in 2019); and we hosted several in-person or online WebEHRS training courses for users
- A project designed to improve data quality as well as advance the data analysis and reporting features of NDECI through the use of new Business Intelligence software was begun
- We solicited and selected a contractor for the IHS Injury Prevention Specialist Fellowship advanced training program which will allow us to have a new class of fellows in 2019
- LCDR Dustin Joplin continued his research on Nitrous Oxide sampling methods in the traditional two-year Uniformed Services University/IHS IEH MSPH and residency program
- We have yet to make significant progress in developing an alternate Institutional Environmental Health residency program.

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

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

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

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List of Acronyms

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

Profile of the DEHS Program

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 Interior, 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 American Indian/Alaska Native (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.

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 2018. 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 and some Areas began implementing it in 2018.

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 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 2018 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 2018, the national DEHS program consisted of a total of 256 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 in Rockville, Maryland, is staffed similarly to the Areas.

RADM Kelly Taylor
Director

CAPT David McMahon
Deputy Director (retired in 2018)

CDR Martin Smith
Deputy Director

CDR Charles Woodlee
Institutional Environmental Health (IEH) Program Manager

CAPT Nancy Bill
Injury Prevention (IP) Program Manager (retired in 2018)

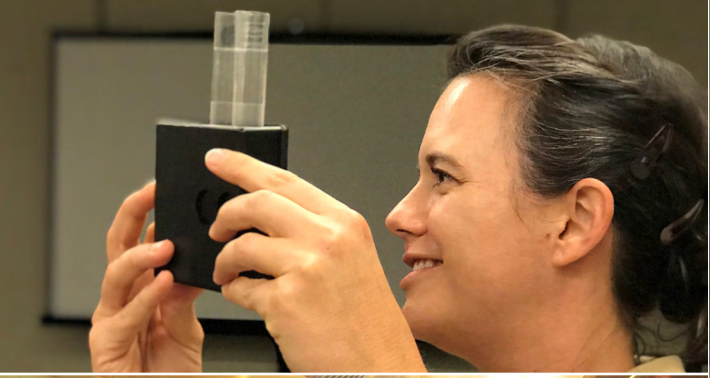
CAPT Holly Billie
Injury Prevention (IP) Program Manager

CAPT Stephen R. Piontkowski
Senior EH Officer

CDR Mike Reed
Senior EH Officer

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 $35 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 the Division of Sanitation Facilities Construction (DSFC). For 2018, the DEHS share of the EHSA budget was approximately 41%, or $35,342,133. Figure 1 depicts a historical comparison of the workload-based Resource Requirement Methodology (RRM) versus the distribution of Program funds from 2009 to 2018. Table 2 displays the current level of need funded (LNF) for each of the 12 Areas; the data represent both IHS staff and tribal staff.

Table 1: DEHS Program Funding Sources.

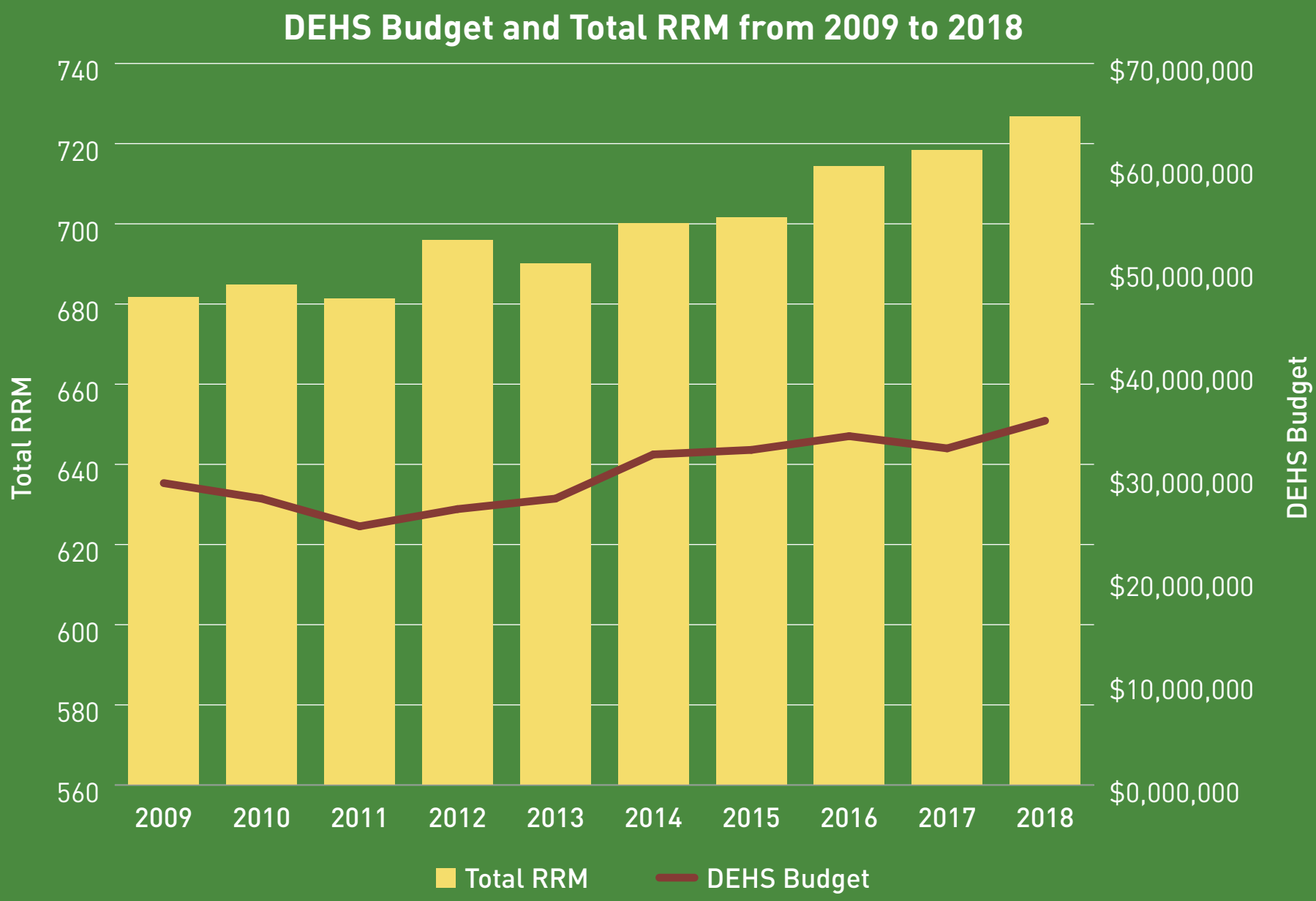
Fiscal Year	Total EHSA Budget	DEHS RRM Share	DEHS Budget*	OEHE Funds Provided to DEHS			IHS Director's Initiative***	Injury Prevention Budget Enhancements***	Total DEHS Budget
				COSTEP**	Injury Prevention**	Residency**			
1998	$42,159,000	33.80%	$14,249,742	$81,000	$116,000	$90,000	$304,000	$0	$14,840,742
1999	$44,244,000	33.80%	$14,954,472	$206,000	$174,100	$120,000	$304,000	$0	$15,758,572
2000	$49,162,000	33.20%	$16,321,784	$208,000	$175,000	$67,600	$304,000	$1,475,000	$18,551,384
2001	$50,997,000	34.20%	$17,440,974	$184,000	$69,000	$63,100	***	$1,779,000	$19,536,074
2002	$52,856,000	34.93%	$18,460,797	$224,000	$111,000	$100,000	***	$1,779,000	$20,674,797
2003	$54,437,000	36.62%	$19,937,064	$194,100	$88,000	$100,000	***	$1,779,000	$22,098,164
2004	$55,888,650	33.63%	$18,794,176	$240,000	$118,700	$100,000	***	$1,779,000	$21,031,876
2005	$56,328,611	32.80%	$18,475,968	$232,000	$74,000	$100,000	***	$1,779,000	$20,660,968
2006	$57,447,796	34.03%	$19,547,711	$208,000	$67,500	$100,000	***	$1,779,000	$21,702,211
2007	$63,235,458	35.68%	$22,564,290	$232,000	$98,000	$100,000	***	$2,779,000	$25,773,290
2008	$64,576,052	37.65%	$24,313,637	$216,000	$61,000	$100,000	***	$2,779,000	$27,469,637
2009	$67,022,000	38.97%	$26,117,871	$228,500	$66,782	$100,000	***	$2,779,000	$29,292,153
2010	$69,196,000	35.74%	$24,730,653	$176,000	$0	$100,000	***	$2,779,000	$27,785,653
2011	$69,057,608	32.00%	$22,098,435	$144,000	$84,000	$0	***	$2,771,942	$25,098,377
2012	$69,703,294	34.00%	$23,699,120	$160,000	$49,000	$100,000	***	$2,763,473	$26,771,593
2013	$66,521,479	38.00%	$25,278,162	$128,000	$0	$100,000	***	$2,280,000	$27,786,162
2014	$70,901,479	41.00%	$29,069,606	$136,000	$63,000	$100,000	***	$2,766,698	$32,072,304
2015	$72,550,497	41.00%	$29,745,696	$176,000	$0	$125,000	***	$2,766,698	$32,512,394
2016	$69,531,437	42.00%	$29,203,204	$184,000	$0	$125,000	***	$2,766,698	$32,278,902
2017	$70,793,387	40.00%	$28,642,933	$160,000	$0	$125,000	***	$3,734,092	$32,662,025
2018	$77,088,387	41.00%	$31,387,041	$96,000	$0	$125,000	***	$3,734,092	$35,342,133

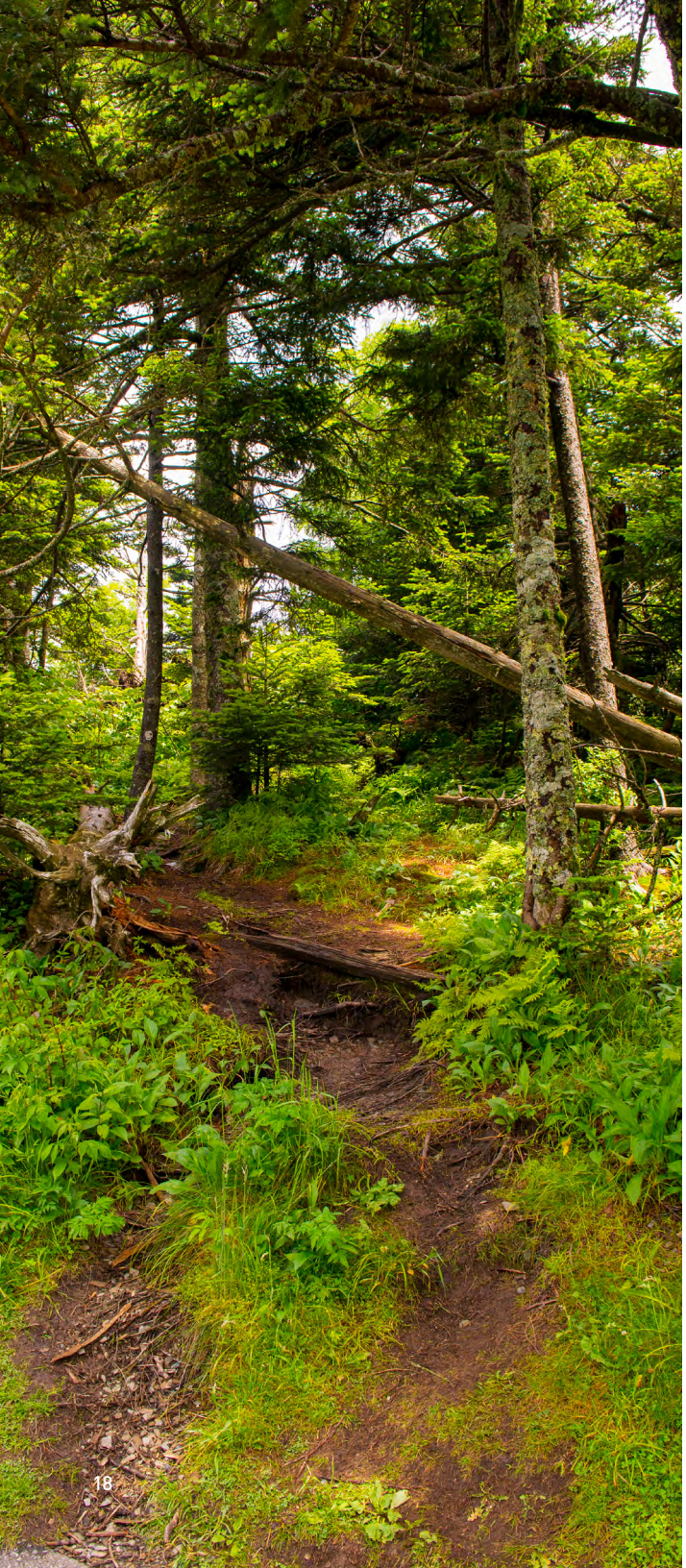
*Represents an approximation based on initial DEHS and DSFC RRM calculations

**Office of Environmental Health and Engineering funds provided to DEHS

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

Figure 1: RRM (workload) vs. actual DEHS funding from 2009 to 2018.





As Table 2 shows, the DEHS Program strives to accomplish its tasks at a funding level of 35.2% of the estimated actual need. In order to maximize the utilization of available resources, the DEHS has established partnerships with federal agencies. Partnerships change as needs are addressed or emerge. A few of the partners over the years include:

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

Table 2: Level of Need Funded (LNF) 2018.

Area	Total Staff*	RRM	%LNF	Federal Staff	Tribal Staff
Alaska	37	97.4	38.0%	0	37
Albuquerque	19	38.47	49.4%	15	4
Bemidji	22	56.79	38.7%	11	11
Billings	14	31.78	44.1%	5	9
California	10	53.43	18.7%	7	3
Great Plains	26	54.25	47.9%	15	11
Nashville	16	42.33	37.8%	3	13
Navajo	36	112.83	31.9%	32	4
Oklahoma City Area	34	101.92	33.4%	10	24
Phoenix	36	70.82	50.8%	24	12
Portland	5	53.45	9.4%	4	1
Tucson	1	13.28	7.5%	0	1
Total**	256	726.75	35.2%	126	130

*Includes tribal staff hired with IHS Cooperative Agreement Funds (HQ staff are note reflected here).

**Total is not exact due to rounding. Data from 2017 determines the 2018 LNF.

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 2018 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 or webinars. In 2018 there were 36 classes and 8 webinars with a total of 991 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 2009. The number of externs hired annually fluctuated from 20 to 29. During 2018, the DEHS supported 12 student externs.

Figure 2: Number of college students participating in the DEHS extern program, 2009 to 2018.

Table 3: EHSC Sponsored Courses – 2018.

Course	Location	Number of Participants
Safe Native American Passengers (SNAP)	Kykotsmovi, AZ	17
Introduction to Injury Prevention	Scottsdale, AZ	35
CDC-IHS Healthcare Infection Prevention and Control Training	Oklahoma City, OK	48
Safe Native American Passengers (SNAP)	Agency Village, SD	2
Fundamentals of Safety Management	Phoenix, AZ	35
CDC-IHS Healthcare Infection Prevention and Control Training	Phoenix, AZ	80
Healthcare Safety Accreditation	Billings, MT	23
General Fire Protection – NFPA	Rapid City, SD	37
Safe Native American Passengers (SNAP)	Glascow, MT	2
Healthcare Safety Accreditation	Phoenix, AZ	34
Safe Native American Passengers (SNAP)	Seminole, OK	2
Safe Native American Passengers (SNAP)	Albuquerque, NM	1
Safe Native American Passengers (SNAP)	Chadron, NE	2
10 Hour OSHA Course for General Industry	Whiteriver, AZ	37
CDC-IHS Healthcare Infection Prevention and Control Training	Portland, OR	88
Safe Native American Passengers (SNAP)	Atmore, AL	1
CDC-IHS Healthcare Infection Prevention and Control Training	Bemidji, MN	48
Safe Native American Passengers (SNAP)	Warm Springs, OR	1
NFPA 101 Life Safety Code	Oklahoma City, OK	43
NFPA 99 Standards for Healthcare	Oklahoma City, OK	44
Safe Native American Passengers (SNAP)	Durango, CO	9
Safe Native American Passengers (SNAP)	Fortuna Certer, CA	4

Course	Location	Number of Participants
WebEHRS 101	Albuquerque, NM	6
Safe Native American Passengers (SNAP)	Great Falls, MT	1
10 Hour OSHA Course for General Industry	Bishop, CA	43
NFPA 101 Life Safety Code	Pierre, SD	37
NFPA 99 Standards for Healthcare	Pierre, SD	35
Intermediate Injury Prevention	Fargo, ND	10
Introduction to Injury Prevention	Albuquerque, NM	14
Safe Native American Passengers (SNAP)	Mescalero, NM	19
Introduction to Injury Prevention	Norman, OK	17
Safe Native American Passengers (SNAP)	Rapid City, SD	4
Safe Native American Passengers (SNAP)	Pawnee, OK	2
Introduction to Injury Prevention	Bethel, AK	8
Safe Native American Passengers (SNAP)	Gallup, NM	3
Intermediate Injury Prevention	Scottsdale, AZ	25
WebEHRS Virtual Learning Session	Webinars (3)	32
SMCD Series: Incident Investigation	Webinar	26
SMCD/IPCD Overview	Webinar	36
SMCD Series: Incident Investigation	Webinar	23
IPCD Series: Chemical Disinfectants, Sterilants, and Detergents	Webinar	29
IPCD Series: Chemical Disinfectants, Sterilants, and Detergents	Webinar	28
TOTAL PARTICIPANTS		**991**

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

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 11 DEHS staff funded by IHS for college courses in 2018. Of the 11, eight were federal employees and three were tribal employees. Staff in four of the 12 Areas received long-term training support.

There are 14 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

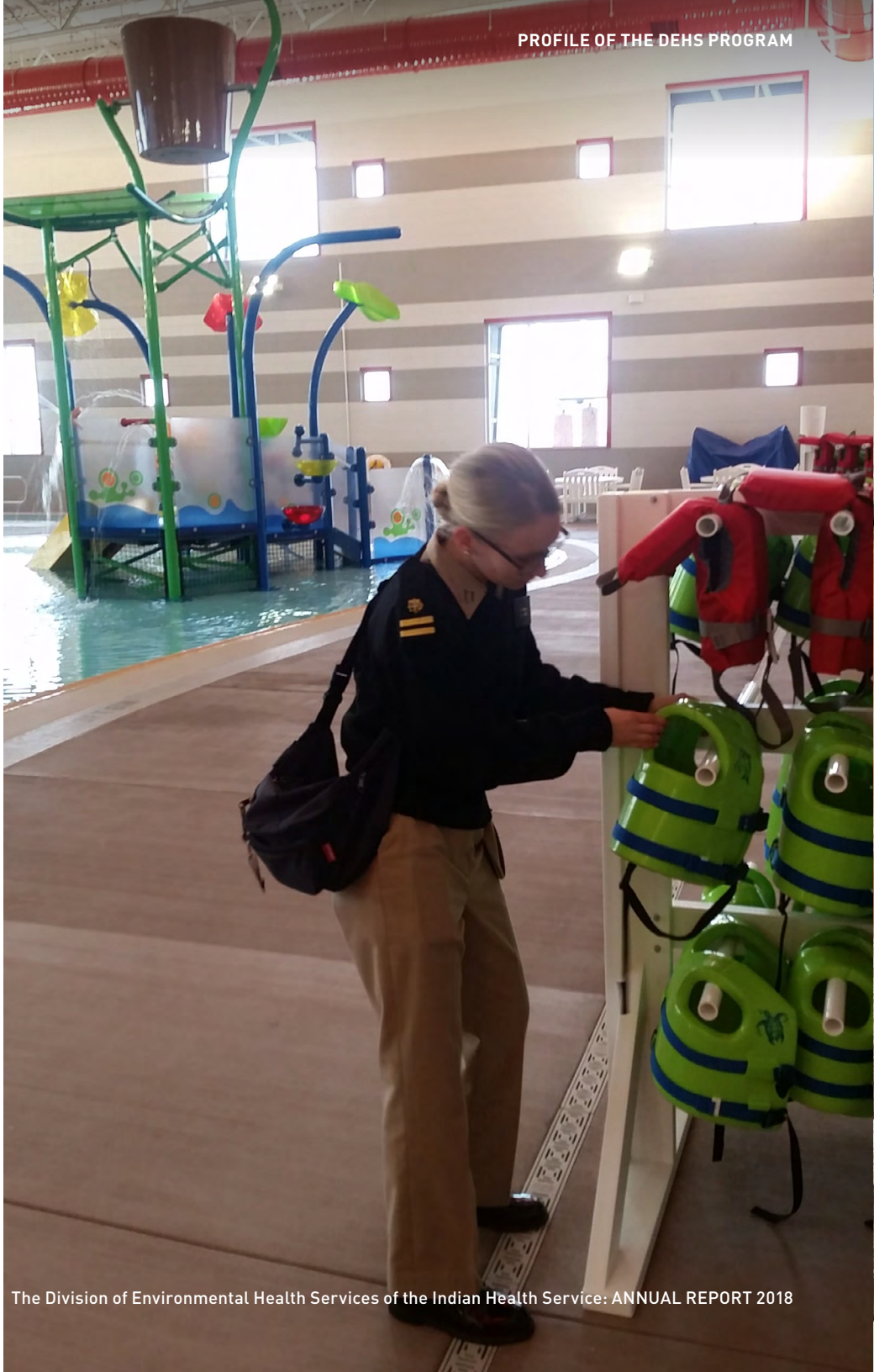


Figure 3: Distribution of environmental health staff within the national program.

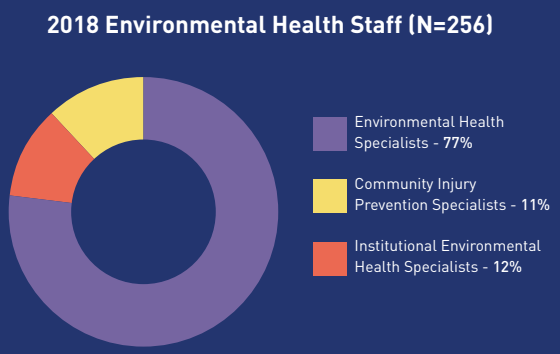


Figure 4: Percentage of environmental health staff with master's degrees.

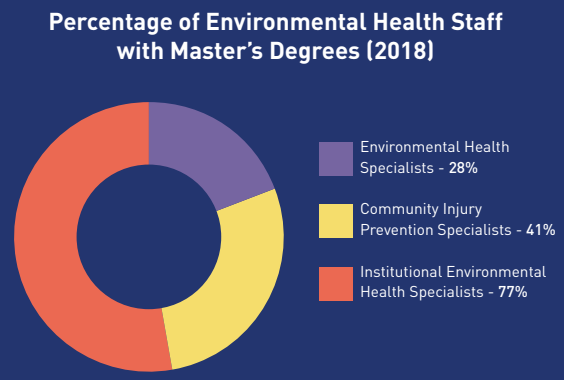
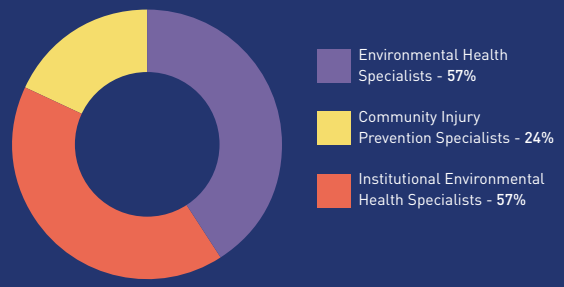


Figure 5: Percentage of environmental health staff with REHS/RS credentials.



Distribution of federal (126) and tribal (130) staff (N=256) within the national program (this excludes headquarters staff) *(Figure 3)*.

- Environmental Health Specialists (EHS) – **77%** (197/256)
- Community Injury Prevention (IP) Specialists – **11%** (29/256)
- Institutional Environmental Health (IEH) Specialists – **12%** (30/256)

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

- Total – **36%** (91/256)
- Federal – **47%** (59/126)
- Tribal – **25%** (32/130)

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

- EHS – **28%** (56/197)
- Community IP Specialists – **41%** (12/29)
- IEH Specialists – **77%** (23/30)

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

- Total – **53%** (136/256)
- Federal – **70%** (88/126)
- Tribal – **37%** (48/130)

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

- EHS – **57%** (112/197)
- Community IP Specialists – **24%** (7/29)
- IEH Specialists – **57%** (17/30)

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

- Child Passenger Safety Technicians – **24%** (61/256)
- Certified Pool Operators – **16%** (41/256)
- IHS IP Fellowship Program Graduates – **12%** (31/256)

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*	112	7	17	136	53%
IP Fellow	18	11	2	31	12%
Certified Safety Professional	8	0	3	11	4%
Certified Industrial Hygienist	0	0	5	5	2%
Certified in Infection Control	1	0	0	1	0%
Child Passenger Safety Technician	49	11	1	61	24%
Certified Playground Safety Inspector	9	1	0	10	4%
Certified Radiation Protection Surveyor	1	0	8	9	4%
Certified Environmental Health Technician	8	0	0	8	3%
Diplomate, American Academy of Sanitarians	0	0	1	1	0%
CHEM†	1	0	1	2	1%
FDA Standard	7	0	0	7	3%
Lead/Asbestos Certification	9	0	4	13	5%
IEH Residency	0	0	12	12	5%
Certified Pool Operator	40	1	0	41	16%
OSHA HAZWOPER‡	12	0	6	18	7%
Healthy Homes Specialist	2	0	1	3	1%
Certified Professional in Food Safety	6	0	0	6	2%
Other	20	1	2	23	9%

*Registered Environmental Health Specialist/Registered Sanitarian
†Certificate of Healthcare Emergency Management
‡Hazardous Waste Operations and Emergency Response Standard

Recognition

There are several awards the federal and tribal staff may earn in recognition of contributions and achievements toward IHS goals, objectives, and the completion of significant activities. *Table 6* summarizes awards received by federal and tribal staff in 2018.

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 (PHS) Awards	19		19
Outstanding Service Medal			0
Commendation Medal	7		7
PHS Achievement Medal	7		7
PHS Citation	1		1
Crisis Response Service Award	2		2
Outstanding Unit Citation	1		1
Unit Commendation	1	1	2
Isolated Hardship			0
Training Ribbon			0
Field Medical Readiness Badge			0
Foreign Duty Award			0
Hazardous Duty Award			0
Special Assignment Award			0
Indian Health Service Area Awards	13		13
Civil Service Personnel Awards	2		2
National IHS Awards	3		3
Other National Awards	2		2
Tribal Awards			0
TOTAL	**39**	**1**	**40**

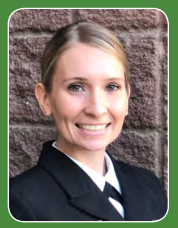
LT Patty Wrona, EHO, conducting a playground safety survey.

Individuals who received Area EHS of the Year (2018) were:

Jerrald Tsalate
Albuquerque Area

Gregory Calvert
Great Plains Area

Timothy Taylor
Bemidji Area



Patricia Wrona
Phoenix Area

Aaron Alexander
California Area

These Area EHSs of the Year were nominated for the IHS EHS of the Year (2018) and **Timothy Taylor**, Bemidji 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 two major categories: special achievements and professionalism. 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, 2018 through 1993.

Year	Recipient
2018	Timothy Taylor, Bemidji Area IHS
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

Year	Recipient
2005	Andrea Horn, Phoenix Area IHS
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

2018 ENVIRONMENTAL HEALTH SPECIALIST OF THE YEAR – TIMOTHY TAYLOR, MPH, REHS

Introduction

LCDR Timothy M. Taylor, MPH, REHS was nominated by the Bemidji Area Indian Health Service, Office of Environmental Health and Engineering, Division of Environmental Health Services (DEHS) for the 2018 Environmental Health Specialist of the Year. LCDR Taylor is recognized for leadership, dedication, mentoring and professionalism that substantially elevated environmental health services to the Bemidji Area Tribes. He sustained quality performance throughout the year, and most noteworthy was his dedication to expanding and implementing institutional environmental health services and providing essential coverage during staffing shortages.

Professionalism

LCDR Taylor is the Institutional Environmental Health Officer (O-5 billet) for the Bemidji Area Indian Health Service (BAIHS), Office of Environmental Health and Engineering. He is responsible for leading, administering, and implementing institutional environmental health services across three states with a service population exceeding 130,000 American Indians; three IHS Service Units and nearly 40 tribal clinics. He previously served the BAIHS as a staff Environmental Health Specialist and as a Safety Officer for the Great Plains Area. He is a true asset to the BAIHS, DEHS program as a technical expert and someone often relied upon for his general environmental health competencies.

LCDR Taylor has a Master of Public Health degree from the Uniformed Services University and is a graduate of the IHS Institutional Environmental Health Residency program. His professional credentials include Registered Environmental Health Specialist (National Environmental Health Association), Aquatic Facility Operator Certification, and Registered Paramedic (National Registry of Paramedics).

In 2018, LCDR Taylor was deployed to the IHS Pine Ridge Indian Hospital for 30 days as a lead advisor on safety and infection control. He conducted an occupational safety and health (OSH) program review; assisted in implementing OSH program improvements and provided staff cross-training. These efforts assisted them in regaining temporary accreditation from the Center for Medicare and Medicaid Services.

LCDR Taylor led, administered, and implemented the Bemidji Area IHS Radiation Safety Program. In doing so, he provided technical assistance and completed 45 medical x-ray surveys and investigations at healthcare facilities throughout our service region. He led an effort to update the Area radiation safety protocol, working closely with medical physicists to transition the Bemidji Area program from medical x-ray performance testing to a radiation safety survey/audit process. This best practice approach can and should be duplicated throughout the IHS, DEHS programs.

LCDR Taylor is quick to assume collateral functions in a lead capacity and provides essential mentoring to junior staff. He is the Bemidji Area Emergency Response Point of Contact and an active team leader to the Bemidji Area Commissioned Corps Awards program. In addition to his supervisory responsibilities to the Area Staff Environmental Health Specialist, he has served as a JrCOSTEP Preceptor and mentor for each of the last four years (2015–2018).

Special Accomplishments

Dental Sharps Injury Reduction: LCDR Taylor's accomplishments illustrate the complete range of the public health approach/ten essential services while implementing best practices. One such example was his approach to reducing injury in dental departments. He utilized assessment, education, forming partnerships, research, policy development, and evaluation to address sharps-related injuries at three federally operated dental departments. LCDR Taylor completed analysis of the WebCident database and found 27 needle stick/bloodborne pathogen (bbp) injuries at the Federal service units; 18 of which were sustained by the dental staff (2013–2017). After meeting with the dental chiefs, they discussed and implemented best practice recommendations noted in the literature (ADA, OSHA, etc.). The following best practice interventions were implemented: changing needle recapping to a one-handed technique; providing self-sheathing anesthetic needles and scalpels; closer placement of sharps containers to operatory areas; supplying and ensuring the use of thicker utility gloves when cleaning and sterilizing dental instruments. With these control measures in place, there was a reduction in needle stick/bbp incidents with only two occurring to the Federal dental staff in 2018.

Healthcare Accreditation: In response to an IHS nationwide push for healthcare accreditation and to better direct his technical services, LCDR Taylor started tracking the likely occurrence of healthcare accreditation inspections in the tristate service area and those seeking accreditation for a first time. He assembled mock survey teams, led the assessment/audit process, and was the primary author for reporting deficiencies and recommendations. Since starting this initiative, over 30 healthcare accreditation mock surveys have been completed and all resulted in successful accreditation. Two of the clinics were newly accredited. In 2018, he completed four mock surveys under a system structure he previously established.

Foodborne Illness: LCDR Taylor exercised and maintained his general environmental health competencies for which he has been relied upon during emergent situations and staff shortages. He quickly stepped in as the IHS lead investigator of a foodborne illness outbreak at a large casino. As an immediate response and to prevent the outbreak from spreading, he interviewed over 100 casino staff members to determine the index case of the illness, which was identified as norovirus. He was able to identify and exclude symptomatic employees for the required period of time necessary to stop the spread of illness. He also recommended further risk reduction strategies to casino management upon completing environmental health assessments on the kitchen and the four restaurants within the facility; thus controlling the outbreak and preventing further infections. Without LCDR Taylor's quick, decisive response, this norovirus outbreak would have become more serious and widespread.

Coverage during Staffing Shortage: LCDR Taylor has been a valued technical expert and true asset in the way he has maintained a wide range of environmental health competencies. During staff shortages he is always quick to assist with the District EHS workload, while still managing an Area Institutional Environmental Health program. In 2018 alone, he completed three investigations, 21 environmental health surveys to include two pow wows and training to nearly 150 head start staff.

Nitrous Oxide Assessments: LCDR Taylor has developed OSH services not previously offered by the BAIHS, DEHS such as nitrous oxide exposure assessments for dental healthcare providers. These assessments included real-time healthcare provider exposure monitoring, leak testing the delivery equipment, and policy and procedure review. This comprehensive assessment process required him to acquire and familiarize himself with a Thermo Scientific™ MIRAN SapphIRe gas analyzer, completing nearly 20 assessments under this protocol and two in the last year. LCDR Taylor's efforts have directly lowered exposures and reduced the risk of negative health outcomes for all BAIHS dental healthcare providers.

Summary

LCDR Taylor has exemplified dedication, professionalism, leadership and mentoring as an Institutional Environmental Health Officer. His attention to quality services while expanding the Institutional EH program and providing field level environmental health coverage during staffing vacancies has elevated the DEHS program.

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, 2018 through 2008.

Year	Recipient	Profession	Area/Facility
2018	Jeffery Conner	IEH Officer	Navajo Area
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.

2018 GEFROH AWARD WINNER – JEFFREY CONNER, REHS

Summary of Accomplishments

- Served as Deputy Incident Commander for Gallup Indian Medical Center (GIMC) accreditation response team
- Developed and implemented a Heating, Ventilation, and Air Conditioning guideline that facilitated re-opening GIMC surgical services
- Coordinated temporary assignments of personnel into the safety, infection control, emergency preparedness, and facility management programs; and successfully advocated for the expansion of the GIMC Safety Program
- Conducted risk assessments and drills that improved facility operations and patient safety while saving approximately $15,000–20,000

Introduction

LCDR Jeffrey Conner serves as the Institutional Environmental Control Officer for the Navajo Area Division of Occupational Health and Safety Management. LCDR Conner is a Registered Environmental Health Specialist, EPA Lead-Based Paint Risk Assessor, and National Fire Protection Association (NFPA) Certified Fire Inspector I. In addition to his IHS duties, LCDR Conner is a Safety Officer with the USPHS National Incident Support Teams and was deployed in response to the wildfires in northern California.

At the end of 2017, the GIMC was notified by The Joint Commission (TJC) and the Centers for Medicare and Medicaid Services (CMS) that the hospital's accreditation was in jeopardy due to a series of deficiencies identified during several inspections. Failure to address healthcare accreditation deficiencies would result in loss of revenue, shuttered services, and potential loss/delay of healthcare for approximately 50,000 people.

Significant Accomplishments

LCDR Conner was appointed as the Deputy Incident Commander for the GIMC's accreditation response team. In this capacity he facilitated daily huddles with hospital administration and Navajo Area's Executive Leadership. He worked with the hospital's accreditation response team to develop the incident action plan, operational periods, and implemented use of a corrective action tracking tool to verify that identified healthcare deficiencies were resolved. LCDR Conner was also required to temporarily assume the responsibilities of safety, infection control, and emergency preparedness at various times. He also identified qualified staff to detail as a Facility Maintenance Subject-Matter-Expert, Safety Officer, and Emergency Manager to reinforce those programs.

Innovation

From late-January to March 2018, the GIMC operating rooms and central sterile reprocessing were shutdown to address low humidity concerns. LCDR Conner researched, developed, and implemented a nonclinical CSR/OR Humidity, Temperature, & Air Exchange Guideline to address Heating Ventilation and Air Conditioning (HVAC) issues that interrupted patient care at the hospital. LCDR Conner also met with key stake holders to get their buy-in and agreement on a single best practice HVAC parameter. LCDR Conner walked this document through safety and infection control committees and presented it to the hospital administration for their approval. In December 2018, the document was identified as a best practice by TJC during GIMC's triannual hospital accreditation survey.

LCDR also assisted in the development and implementation of a new consolidated Pre-Construction Risk Assessment process. The new process was designed to improve the efficiency and accountability of what had previously been disjointed and conflicting policies and procedures.

Impact

LCDR Conner's risk assessment and code blue drills helped the hospital implement corrective actions by determining the quickest route to life saving treatment and illustrate that proposed reconstruction of the hospital's lobby was not needed. This work saved the hospital approximately $15,000–20,000 and, more importantly, prevented disruptions to emergent patient care.

The HVAC guideline developed by LCDR Conner allowed surgeons to start performing elective procedures that had previously resulted in patients being referred to Albuquerque or Phoenix for treatment. The document has been shared as a reference for other IHS Area healthcare facilities to utilize.

LCDR Conner's work helped create an occupational safety and health department at the GIMC. The department includes a supervisory safety officer that oversees an assistant safety officer, occupational health nurse, emergency manager, and a security supervisor.

Conclusion

LCDR Conner's assistance to GIMC involved 11 healthcare accreditation survey site visits by TJC and CMS. His efforts directly contributed to the GIMC reestablishing its Joint Commission hospital accreditation, and not losing up to $100 million in funding from CMS and third-party revenue, and loss of direct patient care services.

DEHS Services

Robyn Hoover, COSTEP, conducting a food safety survey at a Powwow.

Core Services to AI/AN Communities

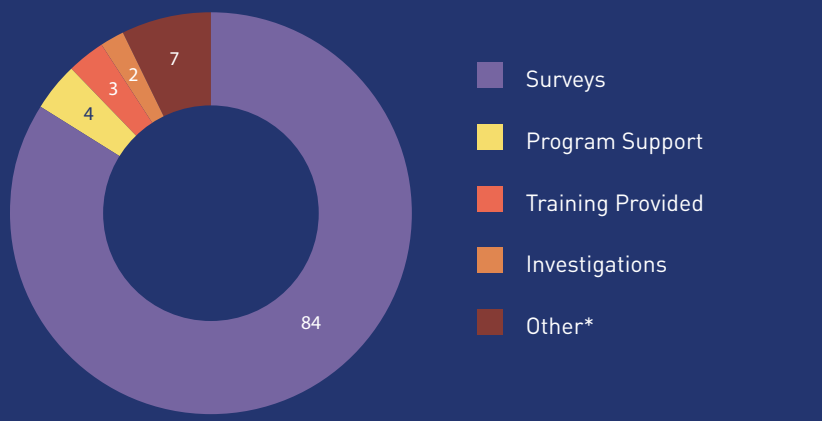
The DEHS is a comprehensive, field-based program with an overarching responsibility to provide community environmental health support. We are leaders in the environmental health profession who provide a range of services on water quality, waste disposal, hazardous materials management, food safety, community 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/facilities[1] – **20,224**
- Staff recorded activities – **8765**
  - Surveys – **84%** (7377/8765)
  - Training provided – **3%** (244/8765)
  - Investigations – **2%** (153/8765)

1 WebEHRS Reports, National Establishment Counts 2018 (excludes Headquarters items)

Figure 6: Activities completed in 2018 as reported in WebEHRS.



*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 new platform was designed and fixes were implemented in 2018. The upgrade will be piloted in 2019 and 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 2018 the WebEHRS change control board was revitalized and instituted 26 significant system changes that 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 IP projects and interventions implemented by the Areas in 2018:

- Motor vehicle injury prevention effective strategies **(5)**
- Unintentional elder falls prevention programs (exercise, home safety assessments, clinical) **(5)**
- Opioid overdose prevention projects (home lock box, medication disposal units) **(3)**
- Youth violence prevention (school crisis prevention and response) **(1)**
- Determining magnitude of the injury problem (i.e., injury atlas development) **(1)**
- Child death prevention (i.e., co-sleeping suffocation prevention) **(1)**
- Carbon monoxide poisoning prevention (CO detectors) **(1)**

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.

In 2018, approximately $1.3 million was distributed through 32 cooperative agreements ranging from $25,000 to $100,000. Seven tribes/tribal organizations were awarded $100,000 each and 25 tribes/tribal organizations/urban programs each received $25,000.

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 rates[1] for the IHS from 2009 through 2018.

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 48,935 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 2018, there were 4,665 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.

Figure 7: IHS Workers' Compensation Cases, 2009-2018.

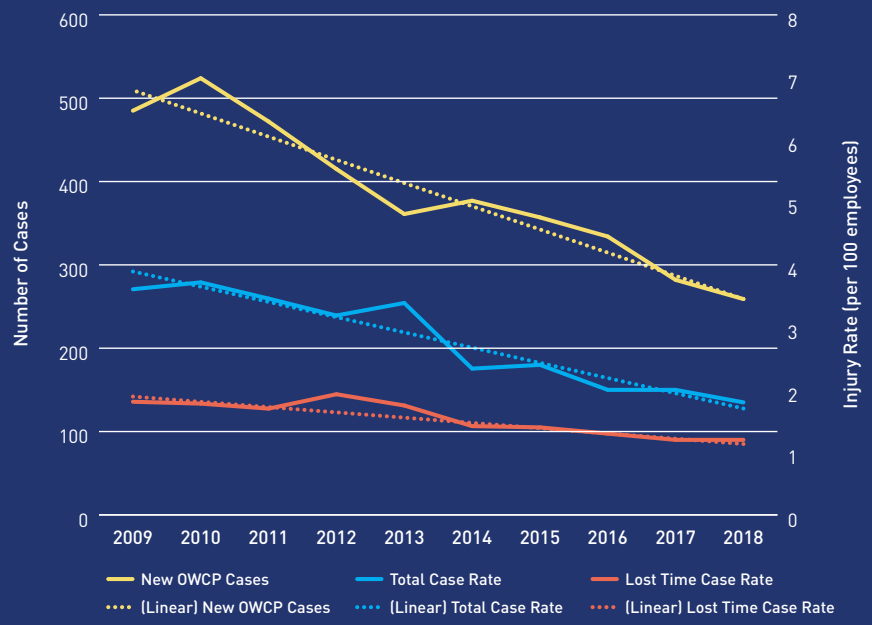
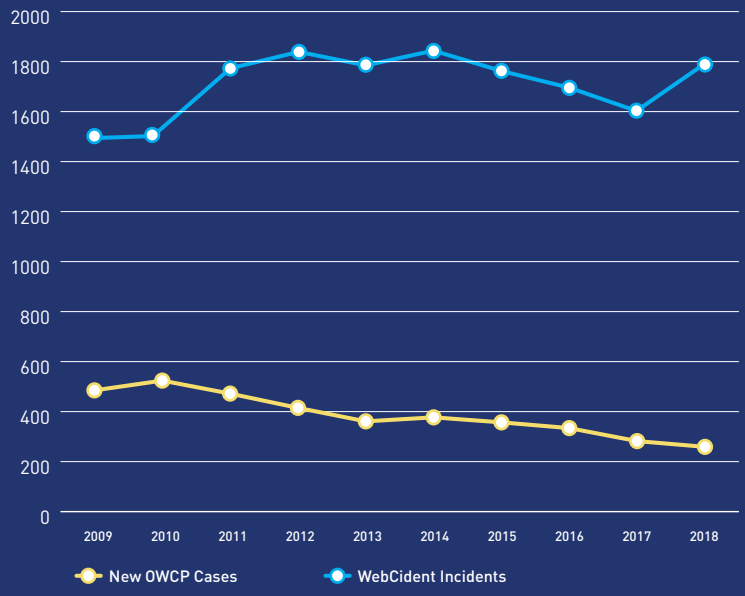


Figure 8: WebCident worker injury incidents and Office of Workers' Compensation Programs injury cases, 2009-2018.

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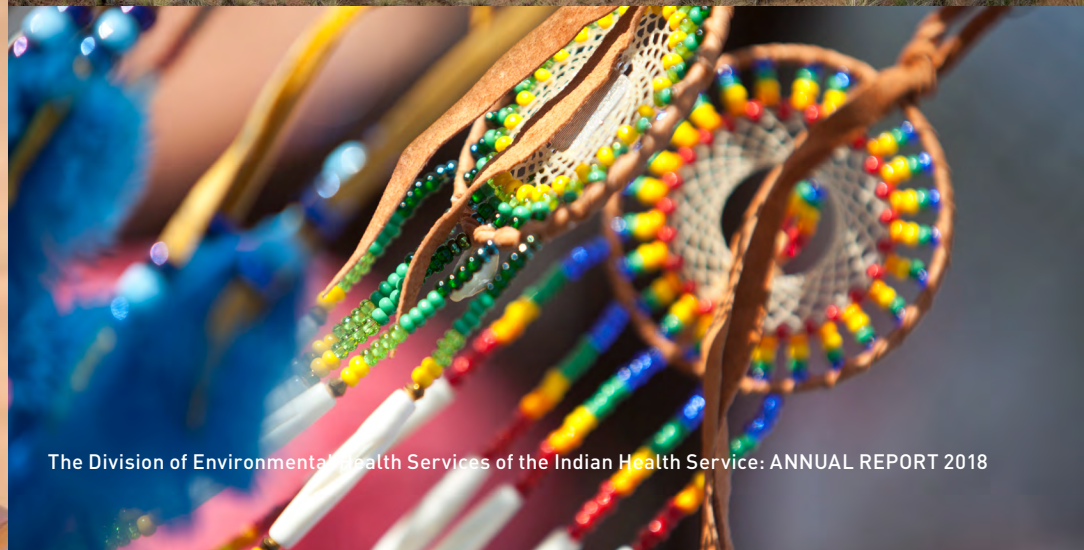



5
CHAIR

DEHS National Focus Areas

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 2018. 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 2018 are presented.

HEAD START EMERGENCY PREPAREDNESS AND DISASTER MANAGEMENT PLAN DEVELOPMENT

Stephanie Bridges
Phoenix Area

Introduction

In 2016, the new Head Start Performance Standards (HSPS) included more comprehensive emergency preparedness guidelines. Three tribal Head Start Centers on a reservation in Arizona were not in compliance. The goal of this project is to improve students and staff preparedness, response & recovery in the event of a disaster or emergency.

The objective is to increase the number of Head Start facilities on the reservation meeting compliance with HSPS Section 1302.47 (b)(4)(i)(G) and 1302.47 (B)(8) and create a toolkit to be used by other area Head Start Centers to attain compliance.

Methods

The following steps and tools were used or developed as part of the planning process.

- Partnership meetings: three meetings were conducted to identify key partners, resources, and determine development process
- Facilitated Discussion: one meeting using ToPs® Group Facilitation kit to identify center staff's knowledge and attitudes about emergency preparedness
- Resource Review: using internet search for guidelines, protocols, plans, and one key informant interview was conducted
- Hazard Analysis: was completed using the "Center for Safe School Risk Assessment Table" to identify disasters probable to occur in or near the facility, county, state, or region
- Compliance Evaluation: a cross reference table determined state of non-compliance with applicable HSPS codes

Results

Hazard analysis was used to determine threat/hazard to be included in the plan *(Table 1)*.

Table 1: Hazard Analysis Results

Threat/Hazard	Relative Risk
Fire: Forest/Wildland/Urban Interface	18.33
Building Structure Collapse	14.67
Fire/Explosion	14.67
Flood/Flashflood	12.00
Gas Leak	10.67
Earthquake	10.50
Extreme Cold	9.17
Snowstorm/Icestorm/Hailstorm/Blizzard	8.33
Transportation Accident: Motor Vehicle, Rail, Marine Vessel, Aircraft	7.50
Power Outage	6.67
Power/Utility Failure	6.67
Lightning	6.00
Thunderstorm (severe)/Wind Storm/Tropical Storm	6.00
Arson	6.00
Economic Emergency	5.83
Hostage Incident	5.00
Active Shooter	5.00
Bombing	4.50
Pandemic Disease Outbreak	4.50
Heat Wave	4.00
Drought	3.00
Extreme Air Pollution (Smog)	3.00
Protest/Demonstration	3.00
Riot/Civil Disturbance	3.00
Special Events (such as Inaugurals, Parades, Football Games, Olympic Games, etc.)	3.00

The Compliance Evaluation tool to evaluate each facility policy against each of the sections from *Caring for Our Children* (CFOC), which is incorporated by reference in the HSPS. The results are in *Table 2*.

Table 2: Head Start Centers

Codes Total	In Compliance Before Project	Incompliance After Project
29	8	29

Toolkit

The methods used to assist with the development of necessary policies and procedures resulted in the creation of a toolkit that includes:

- Facilitated discussion leader plan
- Hazard analysis table and instructions
- Compliance evaluation tool
- Sample policies and procedure (a.k.a. Emergency Preparedness and Disaster Management Plan Template)
  - Preparedness drills & team assignments
  - Recommended trainings & alert systems
  - Procedures for evacuation, relocation, etc.
  - General procedures for fire, weather, etc.
  - Threat procedures for missing child, intruder, assault, etc.
  - Utility disruptions & medical emergencies
  - Communication, reunification and continuity
- Nine likely scenarios designed to test the plans
  - Bus crash
  - Intruder/active shooter
  - Missing child
  - Inclement weather
  - Lockdown
  - Disgruntled parent/employee
  - Gas leak or fire
  - Continuity of operations

Discussion

Working within the means of the facility is an important factor in plan development; each facility is unique and the plans are very complex.

During implementation it is important to assure multiple agencies work together. DEHS should keep in touch with partners, and asking for input from staff is crucial in developing a plan that will work for that particular facility.

Next Steps

- New policies and procedures are awaiting final approval from the Head Start Policy Council
- Continue to develop scenarios to test other hazards
- Schedule and practice drills to assure all staff & students are prepared

Conclusions/Recommendations

Before the project, the existing Head Start policies were compliant with only 8 of 29 sections in Caring for Our Children. Now the Head Start Plan for three Centers on this reservation is compliant with all required codes related to emergency preparedness.

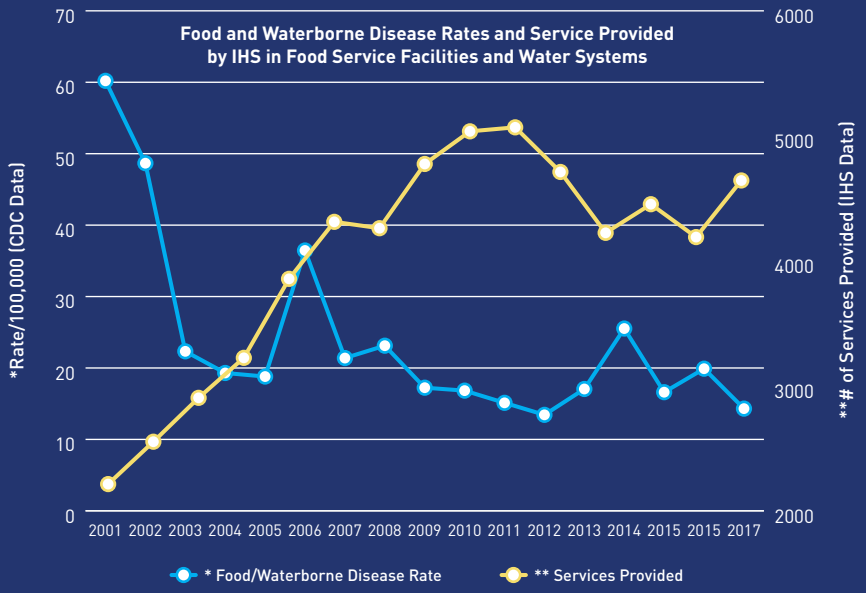
Safe Drinking Water

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.

There were no projects with an emphasis in safe drinking water reported in 2018. The DEHS staff also focused on eliminating risk factors related to the operation and maintenance of water systems.

Food Safety

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



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

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). [website reviewed by CDC in November 2018]).

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 123% (2214 to 4933), the incidence of food and waterborne diseases in the United States decreased 76% (60.2 to 14.31) *(Figure 9)*. Projects with an emphasis on food safety conducted in 2018 can be found on the following pages.

SCORING AND GRADING SYSTEM FOR FOOD ESTABLISHMENT SURVEYS

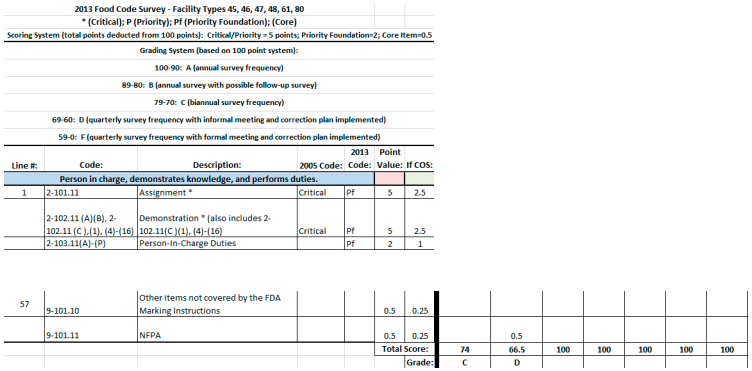
Connie Giroux
Bemidji Area

Introduction

Being a non-regulatory agency, IHS environmental health staff have to be diligent with assisting tribes in becoming agents of change to correct violations that are found during food establishment surveys. Repeat violations are often observed because environmental health staff do not have the regulatory authority to enforce corrections. To help correct this issue, a scoring and grading system was developed to provide another way to monitor how various food establishments are performing and also serve as an enforcement piece to existing tribal food codes. Some of the penalties that could be enforced by a tribe include increased survey frequencies, meetings with tribal management, civil action, temporary emergency closure of an establishment, and termination of food service permit. For tribes that do not have a tribal food code adopted, this system could be used as another method to monitor how various food establishments are performing.

Methods

A draft scoring system was developed by Francis Park, Junior Commissioned Officer Student Training Extern, in 2015 and was based on a similar scoring system used by the Los Angeles County Health Department. WebEHRS data was analyzed to find repeat violations that occurred most frequently. These violations were then categorized as either major or minor violations. After testing the initial scoring system, it was deemed as too harsh and not accepted by the tribe where it was tested. After researching various scoring systems that were used by health departments in different states, a new scoring and grading system was developed in 2017 and pilot tested at one tribe. The new scoring system used language from the FDA Food Code to identify different violation types: Priority (P), Priority foundation (Pf), and Core. Violations that were classified as (P) or (Pf) and designated as critical in previous versions of the FDA Food Code were considered critical. All violations identified received a score. Various food establishment surveys were scored to see how fair the system was with scoring and to test how the scores were weighted depending on the number of repeat and new violations that were observed. The system assigned the following values: Critical (P)/(Pf)= 5 points, Non-critical (P)/(Pf)= 2 points, Core= 0.5 points. If a violation was corrected on site, the point value was reduced by half. This system was based on a 100 point score.



2013 Food Code Survey - Facility Types 45, 46, 47, 48, 61, 80
* (Critical); P (Priority); Pf (Priority Foundation); (Core)
Scoring System (total points deducted from 100 points): Critical/Priority = 5 points; Priority Foundation=2; Core Item=0.5
Grading System (based on 100 point system):
100-90: A (annual survey frequency)
89-80: B (annual survey with possible follow-up survey)
79-70: C (biannual survey frequency)
69-60: D (quarterly survey frequency with informal meeting and correction plan implemented)
59-0: F (quarterly survey frequency with formal meeting and correction plan implemented)

Line #:	Code:	Description:	2005 Code:	2013 Code:	Point Value:	If COS:							
Person in charge, demonstrates knowledge, and performs duties.													
1	2-101.11	Assignment *	Critical	Pf	5	2.5							
	2-102.11 (A)(B), 2-102.11 (C),(1), (4)-(16)	Demonstration * (also includes 2-102.11(C)(1), (4)-(16)	Critical	Pf	5	2.5							
	2-103.11(A)-(P)	Person-In-Charge Duties		Pf	2	1							
57	9-101.10	Other items not covered by the FDA Marking Instructions			0.5	0.25							
	9-101.11	NFPA			0.5	0.25		0.5					
					Total Score:		74	66.5	100	100	100	100	100
					Grade:		C	D					

Results

The scoring and grading system provided a good visual method to see how food establishments were performing during each survey. The tribe that pilot tested this system deemed it fair and beneficial in monitoring their food establishments. This system is being implemented at the casino food establishments where it was tested and will be used as an internal tool for management. The tribe is also updating their food service code to include this scoring and grading system so it can be used for all tribal food establishments.

Discussion

The updated food service code still has to go through a final review and approval in the tribal legal department and tribal council. By including this scoring and grading system in their food service code, environmental health staff have another tool to help food establishments monitor and correct deficiencies in a timely manner.

Conclusions/Recommendations

If adopted by tribes, this system can become an important tool to monitor how food establishments are performing and provide a way for tribes to impose penalties if violations are not corrected in a timely manner.

PARTNERING WITH SPECIAL EVENTS TO REDUCE FOOD SAFETY VIOLATIONS

Patricia Wrona, Vincent Garcia
Phoenix Area

Introduction

Ensuring food safety continues to be a high priority in the Phoenix Area IHS. Temporary food events (TFEs)—powwows, celebrations, special interest fundraisers, restaurant food shows, and other transitory gatherings—continue to be popular and are held at an increasing frequency. In the Phoenix Area Western AZ District, multiple special events throughout the year operating for a day or extended days draw anywhere from 10-70 temporary food vendors. As such, TFEs present special challenges to DEHS personnel who have the responsibility to perform routine assessments. Challenges include:

- Operators engaging in extensive preparation of raw ingredients
- Processes that include cooking, cooling, and reheating of (TCS) time/temperature control for safety foods
- The TFEs operate either indoors or outdoors and often have limited physical and sanitary facilities available
- Inconsistent demonstration of basic food safety knowledge

In 2018, the District DEHS program partnered with tribal special events operators and enhanced engagement with TFE operators to reduce food safety violations during routine TFE inspections.

Methods

The DEHS team implemented the following steps and strategies at each phase of two targeted special events in one Service Unit:

Pre-Event

- Partner with special events operators to communicate expectations, event planning
- Food handler trainings for TFE operators
- Pre-operational inspections

Event

- Rapid assessments targeting critical items and processes
- Re-inspections to verify corrective actions
- Ensure only permitted vendors are selling on the premises

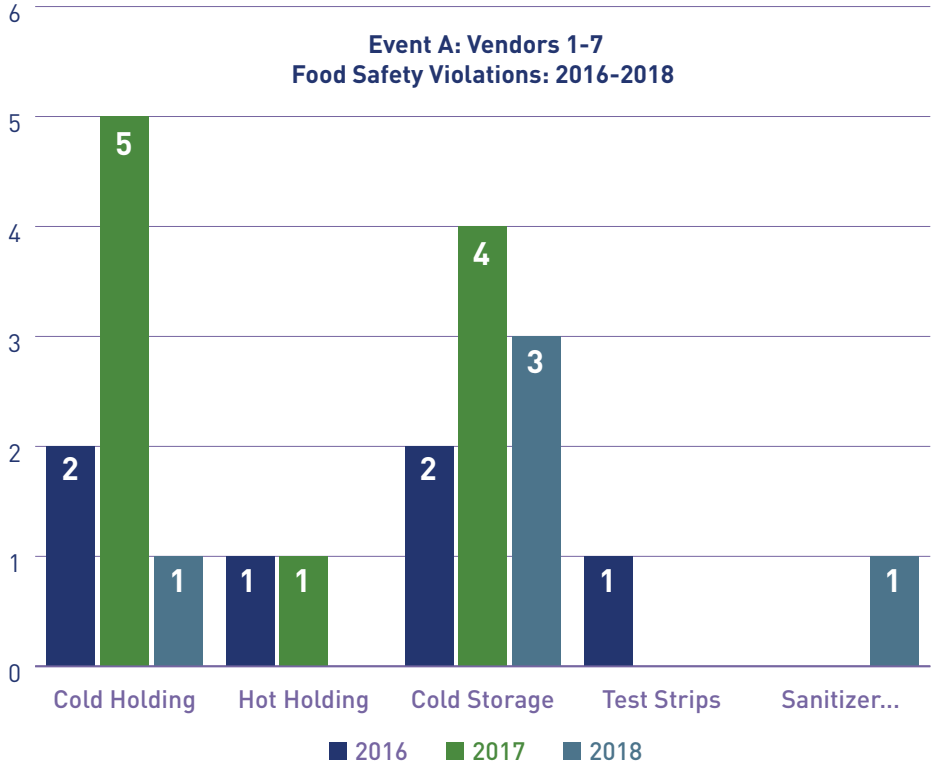
Post-Event

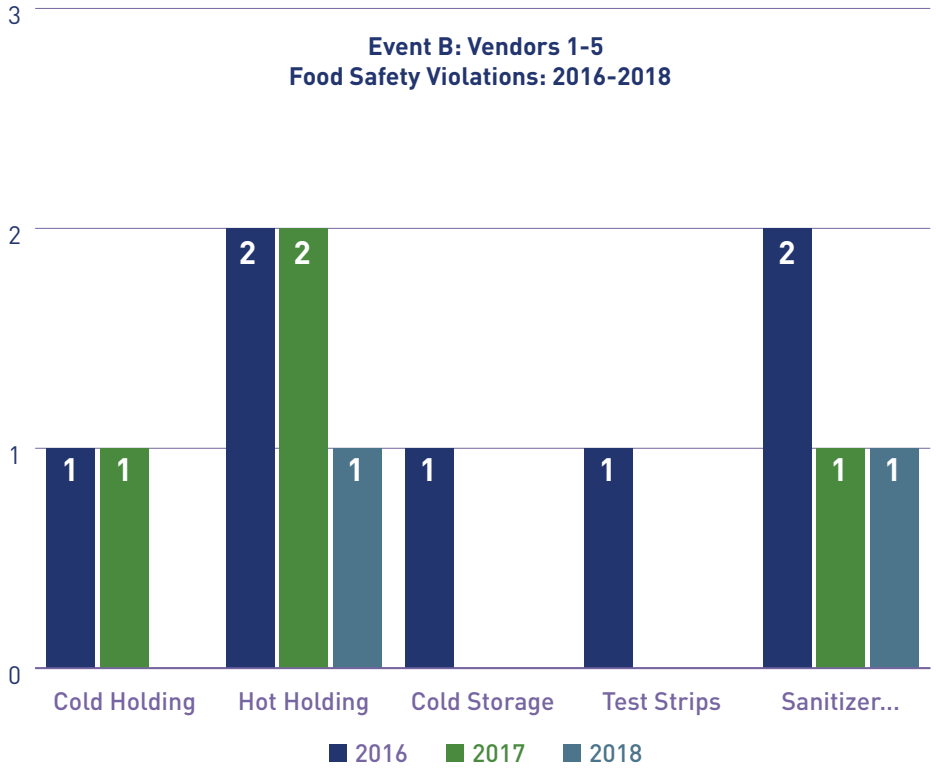
- Closeout with special events operators and final report dissemination

Data Collection and Analysis

- Targeted vendors operating in 2 annual events
- Vendor performance related to 5 foodborne illness risk factors

Results





Discussion

- Although reductions in some of the targeted violations were evident between 2016 and 2018, it is uncertain if reductions can be attributed to advanced communication and info provided by events coordinators to vendors; events A and B coordinators indicated that providing vendors advanced copies of the IHS Western AZ District "Temporary Food Establishment Guidelines" prior to events helped communicate expectations.
- Factors that may contribute to repeat violations:
  - A handful of these vendors travel to multiple events during the year overseen by various IHS or county jurisdictions
  - Some events may not have an event coordinator communicating requirements to vendors
  - Some of the events may be more lenient or strict with their food safety requirements
  - Some tribes do not address temporary food establishments in their food ordinances
  - Vendors may be receiving outdated, incomplete or incorrect food safety information when obtaining their food handler card from a training not provided by IHS
- Event A and Event B have seen a significant increase in the number of vendors; Event B has nearly doubled in vendor size from 2016 to 2018 *(see table)*

Year	Event A	Event B
2016	19 vendors	23 vendors
2017	20 vendors	31 vendors
2018	26 vendors	40 vendors

Conclusions/Recommendations

- Partnering with special events coordinators improves communication of food safety requirements to vendors
- Provide vendors with handouts on what food items need to be cold/hot held as well as a proper food storage chart
- Provide vendors with chlorine test strips as well as a concentration color chart
- Provide new vendors on-site training during inspections to assist in correcting food safety violations
- Update the TFE Guideline (i.e., 2017 FDA Food Code requirements, vendor acknowledgment of receipt form)
- Conduct pre-operational surveys of temporary food establishments to ensure vendors meet TFE Guidelines prior to opening for service to the public

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 2018 can be found on the following pages.

TICKBORNE DISEASE RISK ASSESSMENT: BLACK-LEGGED TICK SURVEILLANCE THROUGHOUT THE BEMIDJI AREA

Garrett Steiner, Barry Hugo, Shelby Foerg
Bemidji Area

Introduction

The Bemidji Area Indian Health Service (BAIHS), Division of Environmental Health Services (DEHS), provides environmental health services to tribes located throughout Minnesota, Wisconsin, and Michigan. Vectorborne disease prevention is a national focus area of the Indian Health Service. Established vectors of concern throughout the BAIHS include the black-legged tick *(Ixodes scapularis)*. Tick dragging activities were primarily focused in Michigan due to concerns of black-legged tick populations increasing in previously uninhabited areas. According to the Michigan Department of Health and Human Services (MDHHS), the black-legged tick is now established in Michigan's Upper Peninsula and throughout the western side of the Lower Michigan. From 2002 to 2016, the State of Michigan reports a threefold increase in the number of Lyme disease cases. Although surveillance was focused on tribal land throughout Michigan, tick dragging was also conducted in Wisconsin and Minnesota.

Figure 1. BAIHS 2018 Tick Dragging Locations.

Methods

Tick dragging was conducted in accordance to guidelines provided by the MDHHS Emerging Zoonotic Infectious Diseases Section, and the Minnesota Department of Health. Dragging was prioritized in areas often utilized by tribal members, particularly children. Areas surveyed include: Pow Wow Grounds, playgrounds, tribal Head Start or childcare facilities, commonly used trails, and communal gathering places. Ticks were collected and preserved in 95% ethyl alcohol. Tribal Environmental/Natural Resources Departments were designated as the main point of contact for each tribe, as staff members were essential in locating ideal tick dragging locations. Black-legged tick samples were identified by BAIHS staff and sent to the Centers for Disease Control and Prevention, Division of Vector-Borne Diseases, for testing. Through this partnership, black-legged ticks sampled throughout the Bemidji Area were tested for the presence of: Borrelia burgdorferi sensu stricto, *Borrelia mayonii, Borrelia miyamotoi, Anaplasma phagocytophilium,* and *Babesia microti*.

Results

- 154 Total Ticks
  - 146 *Dermacentor variabilis* (American Dog Tick)
  - 8 *Ixodes scapularis* (Black-legged Tick)
  - 3 positive for presence of *Borrelia burgdorferi*
- Results correlate with the State of Michigan's findings

Table 1. Tick drag results.

Date	Site	County	State	Total Time (minutes)	Meters dragged	*I. scapularis*	Total Ticks
5/7/2018	Camp	Allegan	MI	60	1062	0	0
5/9/2018	Creek	Calhoun	MI	50	628	0	0
5/23/2018	Golf Course	Gogebic	MI	60	650	0	7
5/23/2018	Pow Wow Grounds	Menominee	MI	60	1609	1	92
5/25/2018	Pow Wow Grounds	Menominee	MI	60	1271	0	38
6/5/2018	Pow Wow Grounds	Manistee	MI	90	1465	2	2
6/6/2018	North Property	Isabella	MI	45	962	0	0
6/6/2018	Vistor Center	Isabella	MI	45	660	0	0
6/4/2018	Pow Wow Grounds	Forest	WI	60	800	0	1
6/13/2018	Beach Restoration Area	Baraga	MI	60	1000	0	0
6/19/2018	Sugar Shack	Forest	WI	60	1320	1	9
7/12/2018	Pow Wow Grounds	Emmet	MI	120	1516	0	0
7/13/2018	Community Center	Allegan	MI	120	1267	0	0
7/20/2018	Reservation Site 1	Cass	MN	30	400	3	3
7/20/2018	Reservation Site 2	Cass	MN	30	400	0	0
7/20/2018	Reservation Site 3	Cass	MN	30	400	0	0
7/20/2018	Reservation Site 4	Cass	MN	30	400	1	1
8/1/2018	Pow Wow Grounds	Cass	MI	40	1674	0	1
8/2/2018	Pow Wow Grounds	Cass	MI	60	1925	0	0
	TOTAL					**0**	

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

HYDROCHLORIC ACID EXPOSURE AMONG WATER OPERATORS DURING CLEAN-IN-PLACE PROCESS AT ARSENIC TREATMENT PLANTS

John Hansen, Josh Vanvleet, Landon Wiggins, Francis Park
Phoenix Area

Introduction

- Water operators use hydrochloric acid (HCl) to clean arsenic removal systems in water treatment plants in a process known as clean-in-place (CIP)
- Water operators reported experiencing shortness of breath and lung and eye irritation during the use of HCl
- The water operators reached out to the Reno District Senior DSFC Engineer and Senior Environmental Health Officer who consulted the Phoenix Area IHS Institutional Environmental Health Officer (IEHO) to analyze the exposure and conduct source sampling
- HCl has acute and chronic human health effects[1]
  - Acute: Corrosive to eyes, skin, and mucous membranes; causes coughing, inflammation, and ulceration of the respiratory tract; pulmonary edema
  - Chronic (occupational): Gastritis, chronic bronchitis, dermatitis, and photosensitization; dental discoloration and erosion
- IEHO analysis identified exposure occurs over a 3–5 minute span where 1–2 gallons of HCl are poured into the water tank during the CIP process
- National Institute for Occupational Safety and Health (NIOSH) recommends HCl use requires the use of the following personal protective equipment:
  - Eye protection
  - Hand and skin protection
  - Respiratory protection

Figure 1. LT Park sampling a water operator while dispensing HCl.

HCl Occupational Exposure Limits

Agency	Concentration	Limit*	GHS Placards
Law			
OSHA	5 ppm	Ceiling	
Consensus Standards			
NIOSH	5 ppm	Ceiling	
NIOSH	100 ppm	IDLH	
ACGIH	5 ppm	Ceiling	

*No time-weighted average has been adopted for HCL

1 EPA Hazard Summary 7647-01-0. Apr. 1992 (rev. 1/2000)

Methods

- A Sensidyne Gastec Pump with Gastec HCl detection tubes was used during the exposure assessment according to the manufacturer's instructions, which utilizes the ANSI/ISEA l02 American National Standard for Gas Detector Tubes - Short Term Type for Toxic Gases and Vapors in Working Environments
- The HCl sampling tubes have a Minimum Detection Level (MDL) of 0.05 ppm and a sampling range of 1 to 20 ppm
- Air was sampled in the Water Operator's personal breathing zone while mixing hydrochloric acid into the water tank used for the CIP process
- During the CIP process, approximately 5 gallons of citric acid and 1–2 gallons of HCl are mixed with approximately 200 gallons of water; the pouring of HCl aerosolizes fumes that are highly irritating to the lungs and eyes; following HCl mixing, water operators report they no long experience lung or eye irritation
- Personal breathing zone samples were taken over a 45-second period in succession until the process was complete; total duration of personal sampling was approximately 11 minutes

Results

The IEHO conducted continuous sampling over an 11-minute period, during which the water operator poured 1–2 gallons of HCl. As seen in the exposure profile *(Figure 2)*, multiple sampling segments were at or above the OSHA ceiling level of 5 ppm. In addition, the HCl exceeded the maximum concentration level in sampling tube 4 (>20 ppm). Exceeding this maximum level shows that employees are being exposed to concentrations greater than 4x the ceiling level.

Figure 2: HCl Exposure Profile.

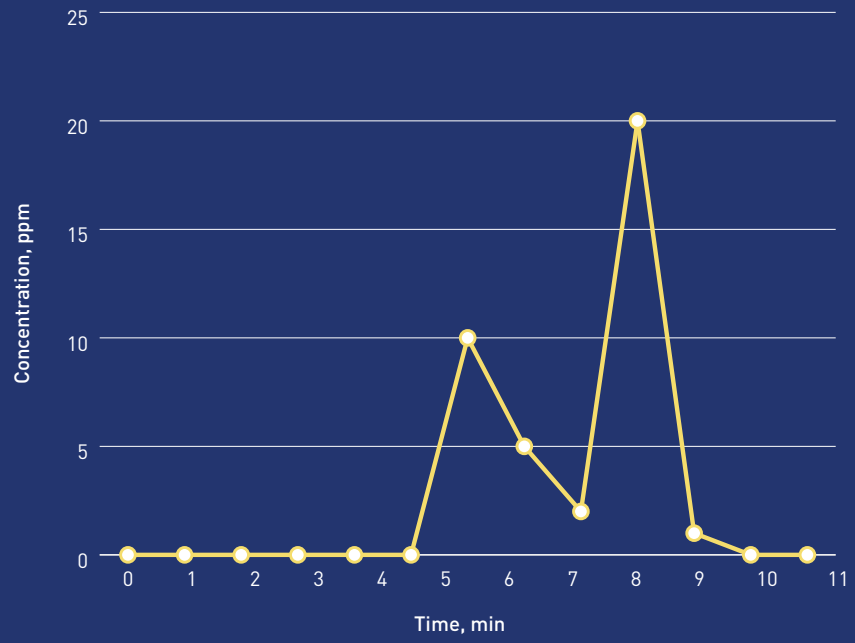


Figure 3. LCDR Hansen discussing sampling results at Fallon with operators at the water treatment plant.

Discussion

When performing the CIP process, workers wore eye, hand, and skin protection along with half-mask air purifying respirators with organic vapor cartridges. If worn correctly, half-mask respirators provide an assigned protection factor (APF) of 10x the OEL {HCL 5 ppm x 10 = 50 ppm max use concentration (MUC)}. The HCl detection tubes have a sampling limit of 20 PPM and will not indicate exposure values exceeding this level. Since samples exceeded the 20 PPM limit, it could not be determined if the concentration exceeded the 50 PPM MUC for a half-mask respirator. In addition, respirators can be misused, improperly fitted, have saturated cartridges or the seal could be compromised by the corrosive HCl fumes. A preferred option would be to eliminate the exposure through an engineered solution. The surveyor suggests the following:

1. Completely contain the operation to eliminate fugitive HCl fumes from contaminating the ambient air
2. Install local exhaust ventilation with sufficient capture velocity to entrain fumes before reaching the workers
3. If an engineering solution is impractical, conduct additional sampling with media that has higher saturation limits to determine actual HCl concentration levels
4. Switch to a full-face piece or supplied air respirator based on additional sampling
5. A thorough evaluation of process flow should be conducted in coordination with IHS SFC/FPST Operators to ensure a functional design that prevents exposure

Conclusions/Recommendations

- Procedure based sampling served as an ideal method of characterizing HCl exposures during this short procedure as excursion levels above the 5 ppm ceiling were found to be an important occupational exposure concern and due to no adopted time-weighted average
- Containing the operation or installing sufficient local exhaust ventilation are ideal control options; however, increasing the level of respiratory to protection full-faced air purifying respirator may be warranted until then

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 2018 and can be found on the following pages.

ENVIRONMENTAL HEALTH HOME SURVEY PROTOCOL

Rebekah Abangan
Phoenix Area

Introduction

- Substandard housing conditions increase exposures to health and injury hazards affecting multiple dimensions of health[1]
- Access to housing, as well as sub-standard housing, are among the factors affecting the health status of American Indian and Alaska Natives (AI/AN)2[2]
- The Indian Health Service, Division of Environmental Health Services (DEHS) has included healthy homes as one of their five national focus areas
- At the local level, processes for conducting home surveys vary
- One IHS Service Unit (SU) in Arizona developed a home survey protocol to address gaps and barriers in the home survey processes

Methods

- Guideline Review
  - CDC Healthy Housing Reference Manual (2009)
  - American Public Health Association (APHA) Healthy Housing Standard (2014)
- Data Gathering
  - 57 SU home survey reports dating from 2003 to 2017
- Review of Assessment Forms
  - Pros and cons of 8 home survey forms evaluated
- Gap Analysis
  - Barriers and gaps identified in current home survey process
- Development of Standardized Protocol
  - 6 standardized steps in the SU Home Assessment Protocol

1 Krieger J, Higgins D. Housing and Health: Time Again for Public Health Action. *Public Health Matters*. 2002; 92:5:758–768
2 Environmental Health Services fact sheet. *Indian Health Service*. 2017; 1

Figure 1. Home surveys by category (2003–2017).

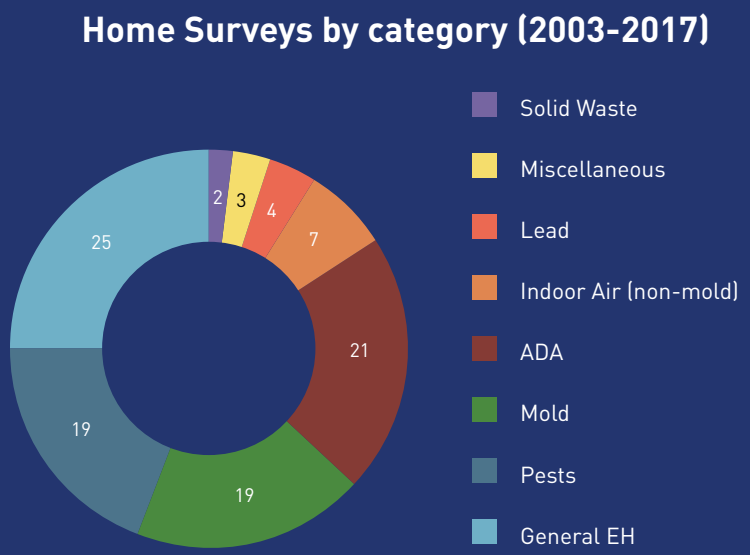
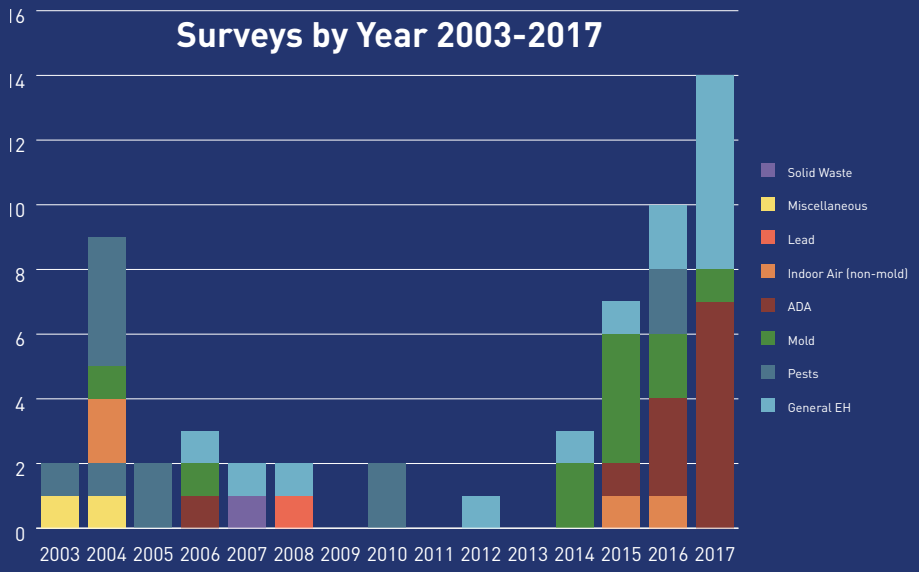


Figure 2. Home surveys by calendar year, 2003–2017.



Discussion

- APHA Standards were chosen as preferred resource guideline
- Thirty-eight (38%) of surveys are comprehensive
- Top SU home surveys by category *(Figure 1)*
  - General EH, ADA, Mold, and Pests
- SU home surveys by calendar year *(Figure 2)*
  - Steady increase of healthy home survey requests/complaints
- 6-step SU Home Survey Protocol *(Figure 3)*

Conclusions/Recommendations

- Surveys based on single initial complaint often resulted in a comprehensive survey
- SU implemented the protocol and is using the APHA Healthy Housing Standard as the primary reference
  - Standards have specific code references
  - Standards are associated with public health rational
  - Standards are easy to use and understand
  - Standards align more with DEHS work
- Standardized process using a protocol increases consistency in reporting
- Standardized process clarifies DEHS role and scope of work
- Increase of time and resources need to be allotted to healthy home initiatives in SU
  - No data on overall state of housing in SCSU

Gaps and barriers identified by DEHS field experience

- Some requests/complaints not within OEHE scope of work
- Coordination of accompanied site visits
- Lack of uniform physical addressing system in the SU
- Lack of occupant communication (no phone, no P.O. Box)
- Time (training admin staff, coordinate with residents, etc.)
- Variety of assessment forms available
- Limited local resources for remediation
- Redundancies (letter and WebEHRs eSurvey)
- Lack of follow-up conducted on home status post site visit

Next Steps

- Continued collaboration with tribal partners and external partners
- Continue to use eSurvey to collect data, which will provide support to advocate for residential building code
- Continue to provide technical assistance related to healthy homes
- Continue to pilot home survey protocol for additional improvements

Figure 3. Home Survey Protocol.

Referral or Request/ Complaint

- Call or walk- in request
- Fax or hard copy referral
- Sources (PHN, Social Services, Housing, ALTCs, Hospital, Community member, Tribe, etc.)

Complaint Log

- Identify main concern and purpose of request (ADA, General EH, Indoor Air Quality, Pests, Solid Waste, Sewage, Overcrowding, Mold)
- Log contact information and any correspondence (physical address, mailing address, & phone number)
- Determine whether onsite visit is appropriate

Schedule Survey

- Contact via phone to schedule & confirm time
- Confirm accompanied person to assist (EHO, Service Unit staff, DEHO, IP Coordinator, CHR, Social Services, Housing, etc.)

Site Visit

- Pre-Survey prep (Gather PPE, educational materials, forms, moisture meter, camera, measuring tape, lead check, light meter, GFCI check, thermometer, insect repellant, bug tubes, and clipboard)
- Conduct survey (Comprehensive vs Focused survey); Complete forms, take measurements, & photo documentation
- Provide educational materials (EPA, CDC, APHA, ADA etc.)
- Provide resources for remediation (USDA application, HIP, HUD, TIPCAP, Tribe, local maintenance services, local pest control, etc.)

Post Site Visit

- Document observations in letter to the resident
- Complete WebEHRs Home Assessment eSurvey (using APHA National Healthy Housing Standard)
- Upload letter and photo documentation into WebEHRs
- Mail or email complete report and educational materials to resident and referring agency
- Document in monthly/quarterly reports

Follow-up

- If USDA Rural Development or other grant/loan application was submitted, record numbers
- If repairs are made by resident(s), USDA, IHS medical referral, Housing, Tribe, etc. then recommend EHO conducts follow-up site visit to document repairs (including photos)
- Recommend follow-up with resident(s) on status of home conditions via phone or site visit (within 3-12 months)
- Document all follow-up as an activity in WebEHRs

HEALTHY HOMES ASSESSMENTS IN MINNESOTA

Connie Giroux, Timothy Taylor, Shelby Foerg
Bemidji Area

Introduction

In 2017, the Bemidji Area Indian Health Service entered into an agreement with Region 5 EPA to fund work pertaining to healthy homes assessments and initiatives. Division of Environmental Health staff from the Minnesota District Office and Bemidji Area Office have worked together to complete a variety of assessments and provide training related to healthy homes topics. In 2017, a mold and indoor air quality complaint was received and investigated at an apartment complex. A lead complaint was also received and investigated at a home child day care. In 2018, two mold complaints were received and investigated at a residential home and a family services building. Safety training was also provided for a tribal housing department and covered topics such as PPE, sharps handling and disposal, cleaning of drug houses, and general safety measures.

Methods

Visual assessments were used to determine if mold growth was present. The Bemidji Area guidelines for mold were used as guidance when responding to mold complaints. For indoor air quality assessments, the following equipment was used: MIRAN SapphIRe Portable Gas Analyzer, Q Trak IAQ Probe Monitor, and Exetech Moisture Meter Pro. Lead assessments were completed using the Olympus XRF Lead Paint Analyzer. Formaldehyde sampling disks were used when additional IAQ assessments were needed in the apartment complex.

Results

The apartment complex had ventilation and air flow issues. During the initial investigation, readings from the MIRAN gas analyzer detected elevated levels of formaldehyde. As a precaution, the resident was moved to another housing unit while longer-term sampling could be conducted. Formaldehyde sampling disks were used to better evaluate formaldehyde gas levels in the apartments and the associated tribal Head Start.

Results indicated only background formaldehyde levels existed. For the home day care, positive lead readings were found on some walls and the solder on the water line pipe fittings. The tribe denied the day care license based on the elevated lead levels in the home. For the home mold assessment, numerous moisture sources were found in the home that promoted mold growth in various areas. Mold mitigation strategies were discussed with the resident. For the family services building, elevated levels of carbon dioxide were found. The tribe was in the process of upgrading their HVAC unit to increase air flow within the building. This will allow for a reduction in CO2 levels and an increase in fresh air intake.

Discussion

Healthy home assessments are a priority within the Bemidji Area. Mold and indoor air quality are the predominant issues related to healthy home assessment requests. Staffing challenges have been a major issue in fulfilling these assessment requests. Safety considerations must also be taken into account when completing these assessments. Staff do not conduct site visits alone so filling the healthy homes positions will ensure adequate staffing to meet tribal requests.

Conclusions/Recommendations

It is critical that the Bemidji Area maintains a strategic partnership with the EPA regarding healthy homes initiatives. Staffing challenges need to be addressed so that the healthy homes position can be filled to address the ever increasing requests that are received regarding mold and indoor air quality issues. Training for staff in indoor air quality, lead assessments, and mold should be a priority to ensure that staff have the proper skill sets needed to complete healthy homes assessments.

ADDRESSING THE OPIOID EPIDEMIC THROUGH LOCAL AND STATE PARTNERSHIPS

Rob Morones, Isaac Ampadu, Martin Stephens, Andrea Tsatoke
Phoenix

Introduction

- Opioids kill more than 115 Americans each day in the U.S.
- 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[1]

In Arizona

- Opioid-related deaths in AZ increased 74% since 2012[2]
- In 2016, there were over 1500 drug overdose deaths in AZ; over 50% attributed to Opioids[2]

American Indian/Alaskan Native Rate

- Opioid-related deaths, hospitalizations, and Emergency Department visits increased 310% from 2008 to 2016[3]

1 National Institute on Drug Abuse
2 Arizona Department of Health Services, Opioid Report
3 Centers for Disease Control and Prevention

Methods/Results

Local Partnerships

Local partners included the Community Health Representative (CHR) program, Public Health Nursing, Pharmacy, Elder Nutrition Programs, and Housing

Focus Groups

- Ten focus groups among elders and CHRs were facilitated by DEHS staff to determine the acceptability of using medication lock boxes in the home environment
- N=101 participants; 6 tribes from Phoenix Area IHS
- Four different types of lock boxes were demonstrated
- Ten focus group questions
- Results strongly supported that elders would use lock boxes to secure their medications

Medication Lock Boxes

- Pilot project
- N=45 lock boxes installed, 8 tribes from Phoenix Area IHS
- Inclusion: High-risk (55+, prior RX theft, chronic pain opioid Rx)
- Evaluation in 30 and 60 days
- Based on those with 30-day results, 97% (N=38) were locked and medications visually observed in the lock box

State Partnerships

State partners included Arizona Department of Health Services (ADHS) and Nevada Department of Health and Human Services

Naloxone

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

- MOU with IHS Service Units for sustained distribution of Naloxone
- Developing tool for evaluation of Naloxone use by tribal first responders
- N=568 Naloxone doses; 13 tribes and tribal organizations

Improving Data Quality

Facilitated the process for tribes to submit post mortem blood samples for toxicology screenings to the state at no charge

- Improve fatality injury data (conducting post mortem blood draws when autopsies are not completed due to remoteness, cost, or invasiveness of procedure)
- Includes sampling equipment, shipping, laboratory analysis, and report

Local and State Partnerships

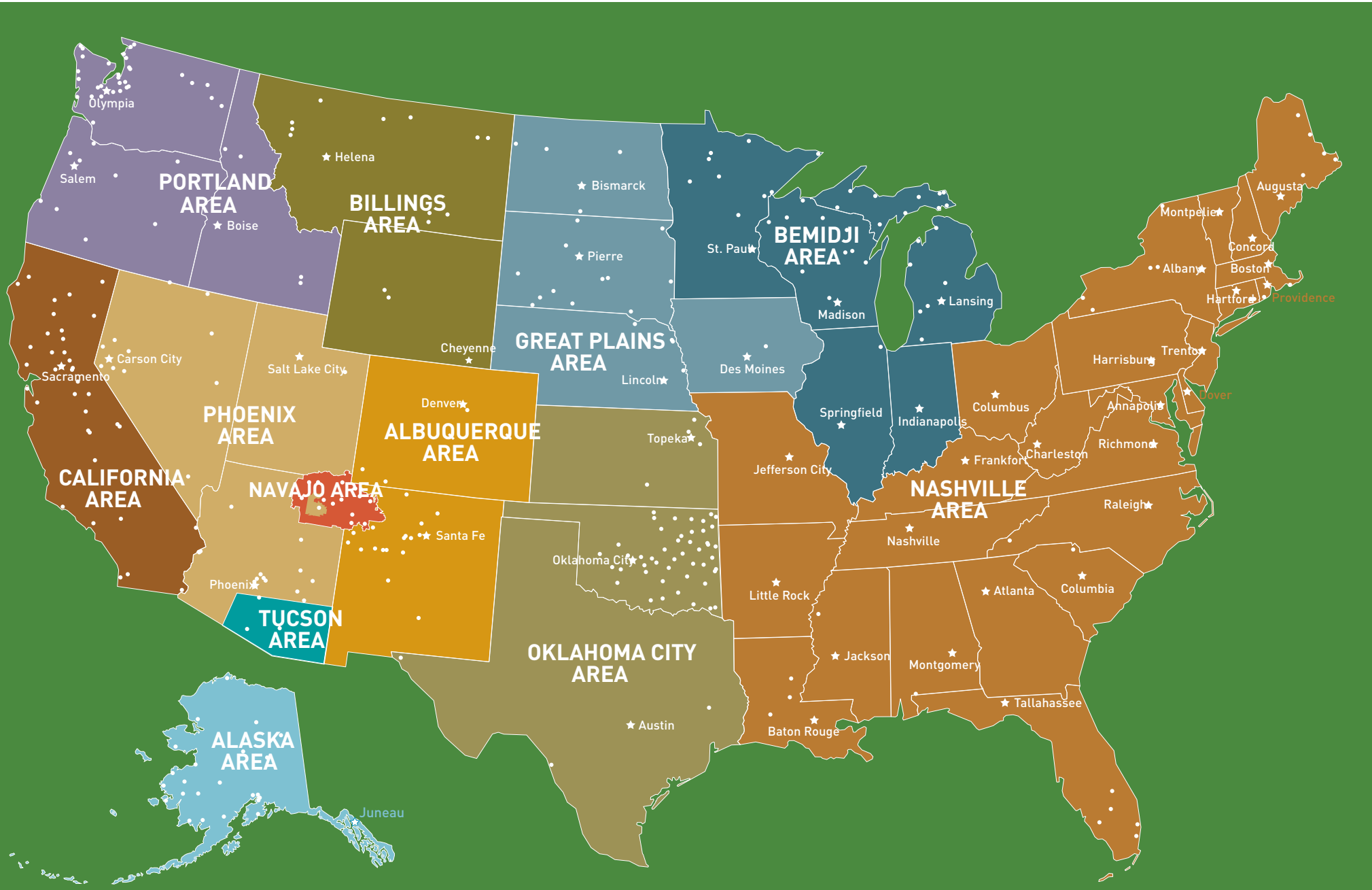
Medication Disposal

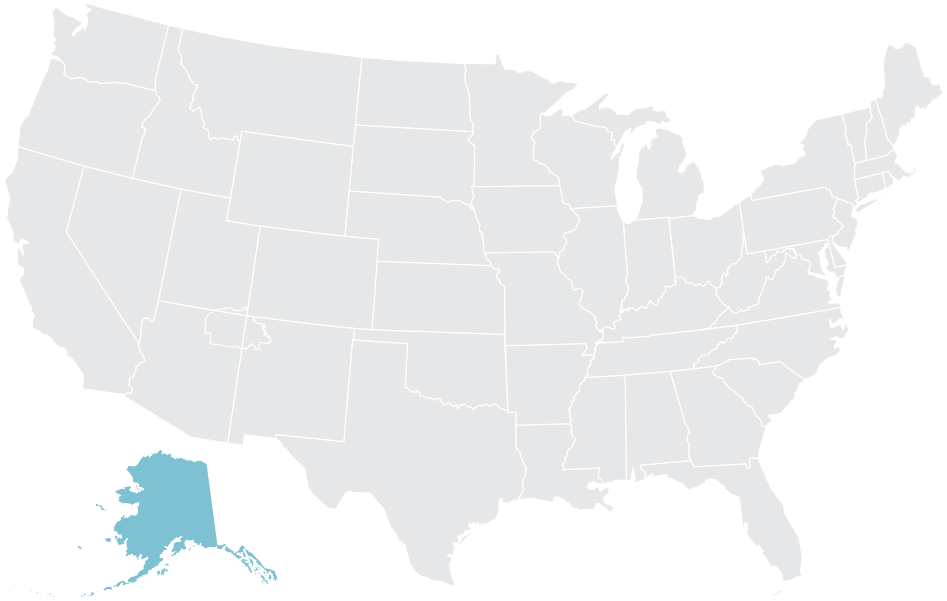
- DEHS encouraged the use of medication disposal mechanisms at healthcare facilities and police stations
- N=6 medication disposal drop boxes available at PHX Area IHS healthcare facilities
- ADHS has partnered in providing several medication disposal mechanisms at no charge
- N=300 Deterra drug deactivation system will be provided to tribes at no charge

Conclusions

- Connect tribes to local healthcare facilities via MOUs for Naloxone
- Conduct an Opioid-specific epidemiology project for PHOENIX Area IHS service population
- Evaluate the medication lock box pilot project based on the focus group findings
- Advocate medication safety disposal practices, including developing a home-based medication disposal program

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.

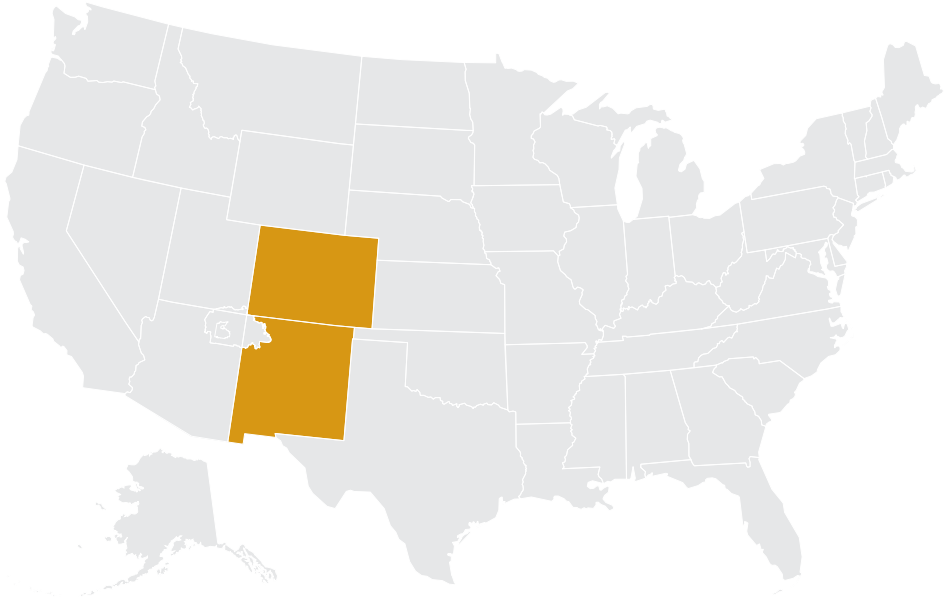
The regional EH programs, together with ANTHC, offer communities and tribes a comprehensive set of environmental health services that protect and enhance the wellbeing of AI/ANs.

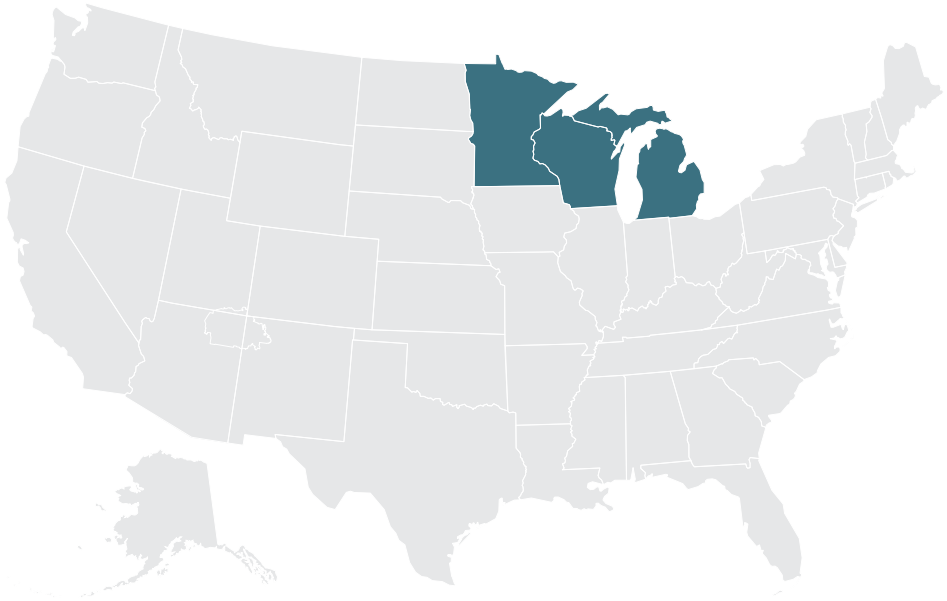
Albuquerque

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

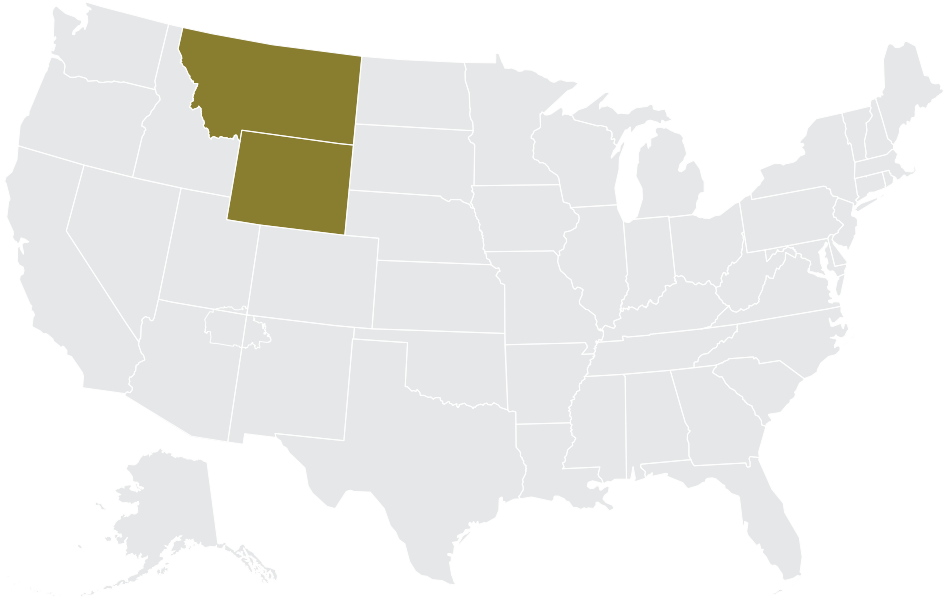
The Bemidji Area DEHS program serves 32 federally recognized tribes and over 100,000 American Indians in an area covering 5,183 square miles throughout the states of Minnesota, Wisconsin and Michigan. Staff includes five field EHS, one staff EHS, two District EHS, one DEHS Director, and one Area IEH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

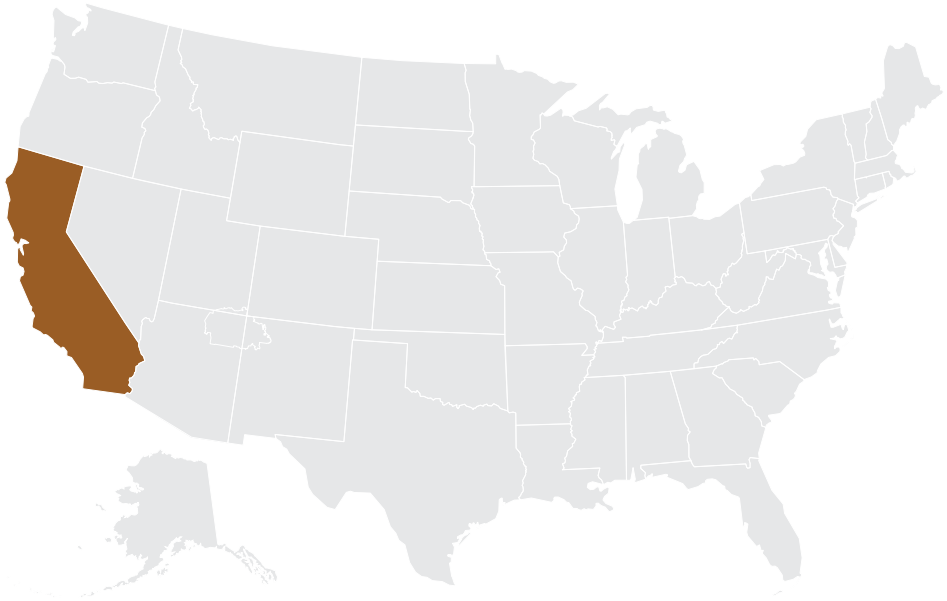
The Bemidji Area provides EH services in the form of surveys, investigations, testing and monitoring, training, policy development, program support and facility plan reviews. This is done in effort to improve food safety, solid and liquid waste management, water quality, hazard communication, epidemiology,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

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

Billings

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

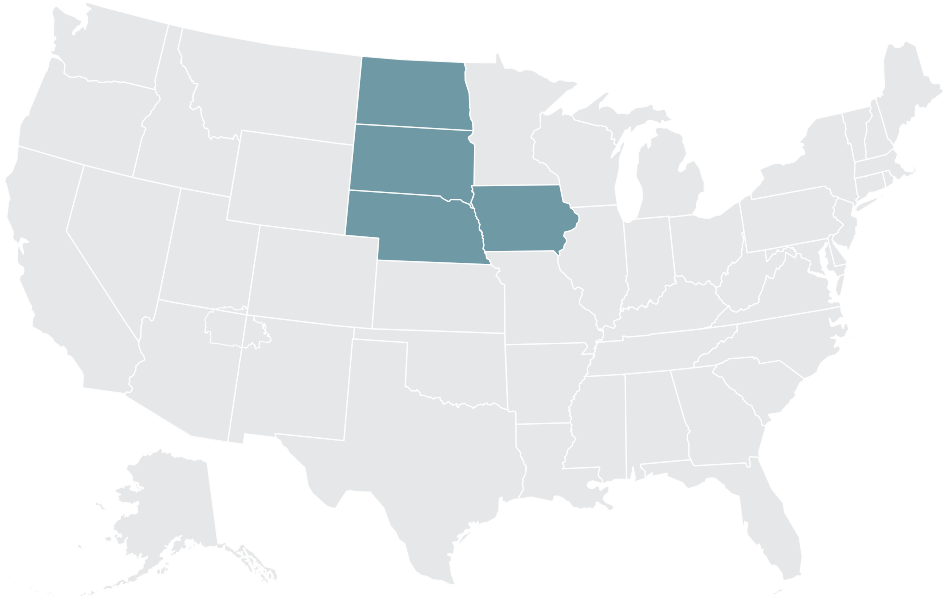
The California Area serves approximately 104 federally recognized tribal governments in the state of California who represent a service population of 151,242 persons in nearly 1685 facilities. The California Area DEHS is comprised of career tribal employees, federal civil service and PHS Commissioned 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.

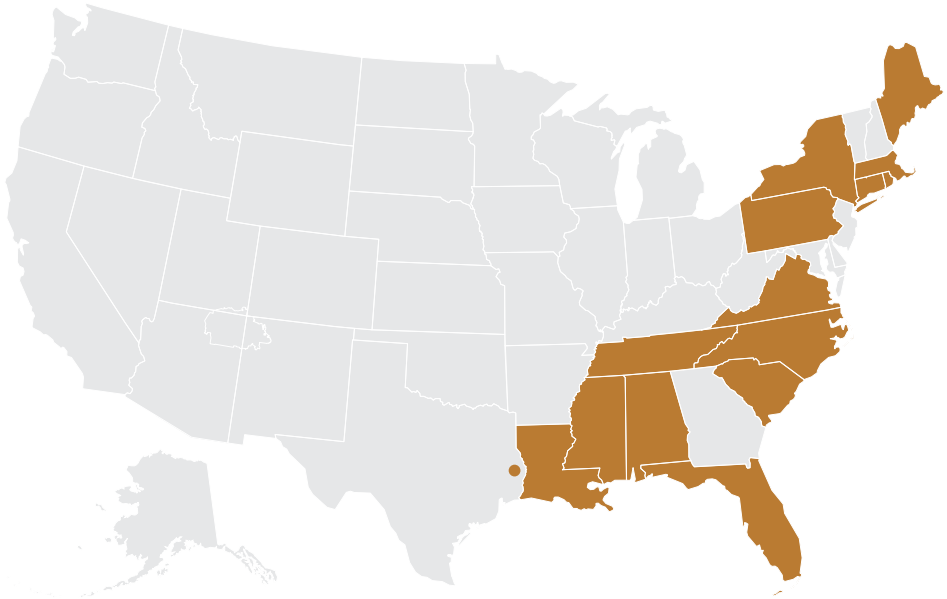
The majority of services provided by California Area DEHS fall into the category of general environmental health. Technical consultation, training, surveillance and investigative services are provided in the following program areas: children's environmental health, communicable disease control and epidemiology, 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, which is managed through the Area Chief Medical Officer and works closely with the compliance program. At the district level, the DEHS Program has three staff located in Minot, North Dakota; Pierre, South Dakota; and Sioux City, Iowa. At the field level, the program has 13 offices with Field EHS and/or IP Specialists. Seven of the field offices are contracted programs that 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 its first accreditation survey soon. The EHOs are Project Managers for IP grants.

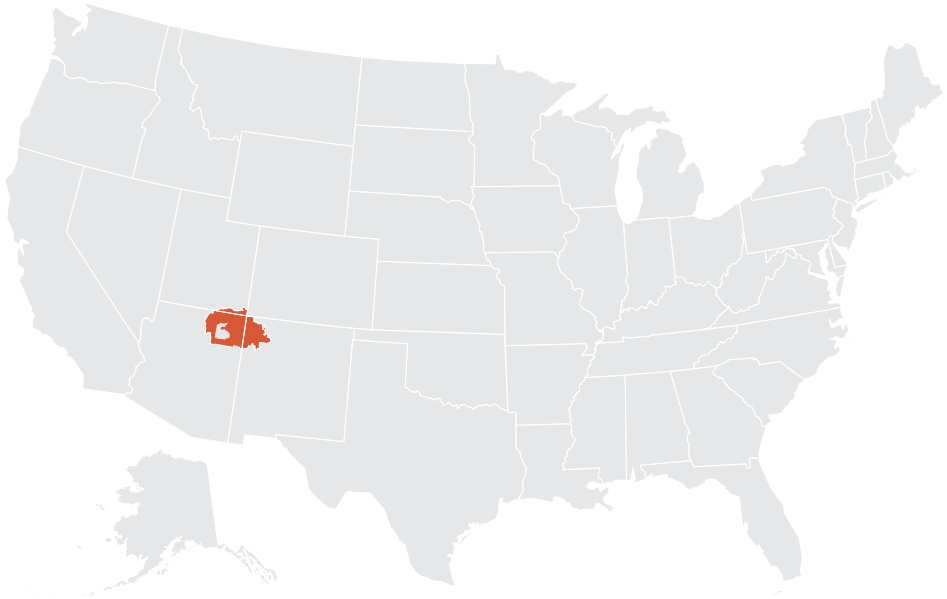
Navajo

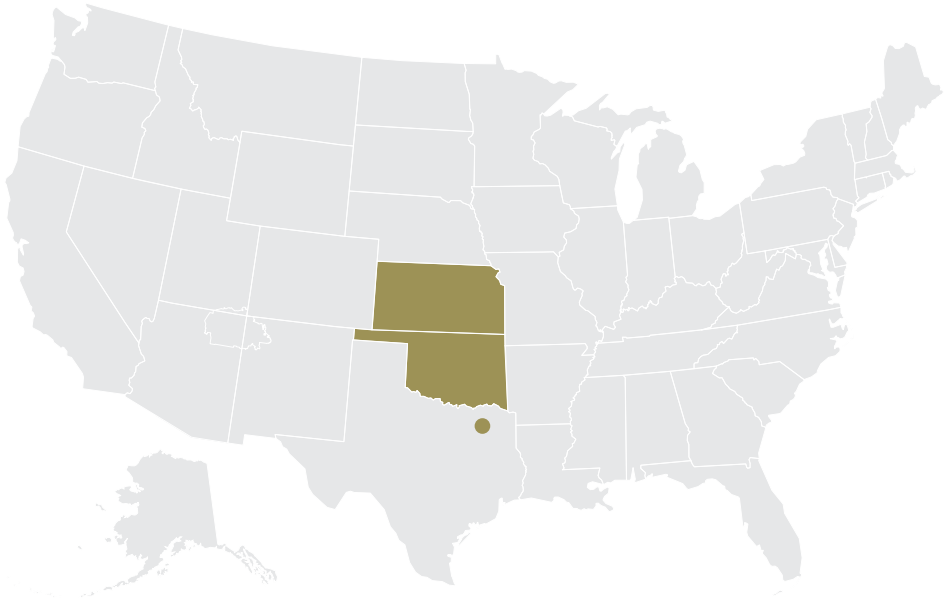
The Navajo Area DEHS is a large comprehensive EH program serving more than 250,000 members of the Navajo Nation and the Southern Band of San Juan Paiutes. EH services are provided to Indian communities on reservations encompassing more than 25,000 square miles of land in northeast Arizona, northwest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

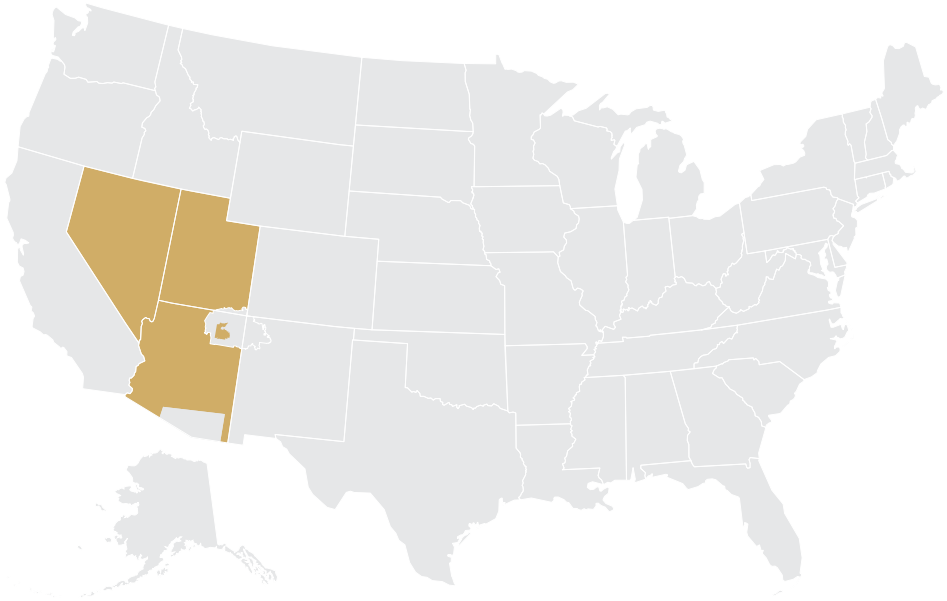
The DEHS Program includes 11 staff members: one Director, one IEH Specialist, one Injury Prevention Specialist, one District Environmental Health Officer, and seven field staff, that provide a wide range of EH services that include, but are not limited to, food safety, solid and liquid waste management, water quality, hazard communication, epidemiology, vector control, emergency management and response, infection control, recreation/celebration sanitation, indoor/outdoor air quality, home sanitation and safety, Head Start and childcare food and safety, in addition to meeting a wide selection of specific training needs.

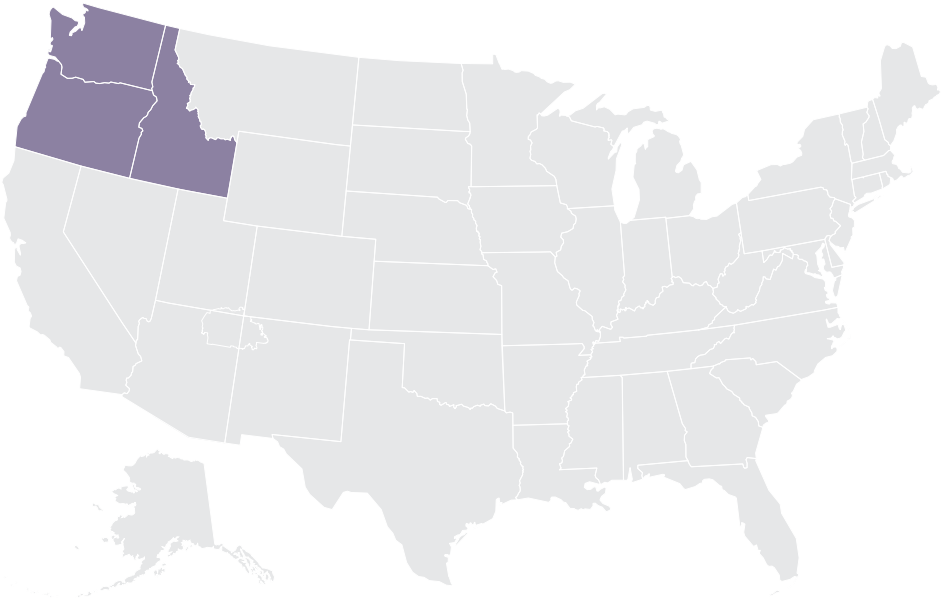
The DEHS is also responsible for specialized services in the areas of IP and IEH. The goal of the Oklahoma City Area IP program is to reduce the incidence and severity of injuries and deaths within the tribes they serve and work in collaborations with. IP services include training, partnership building,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





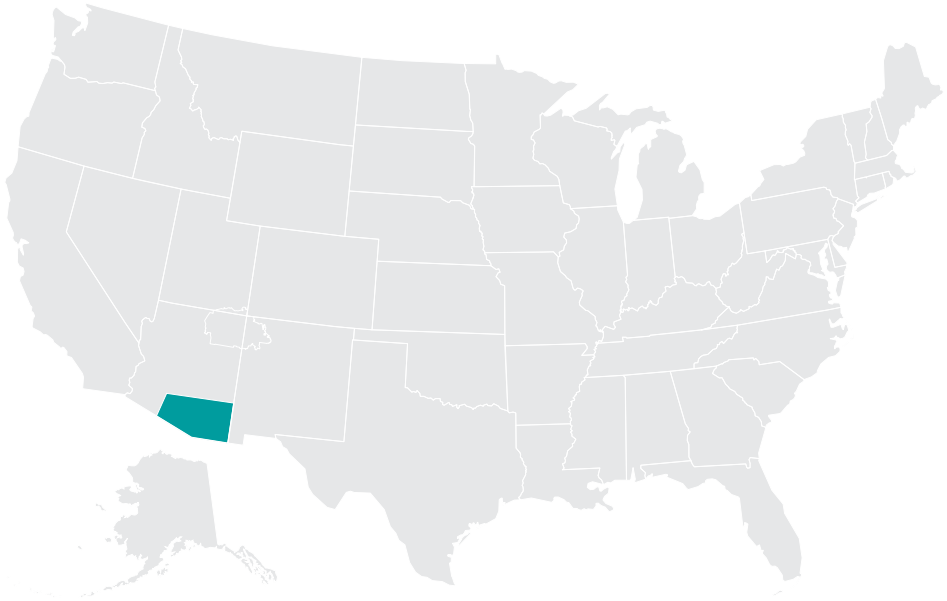
Portland

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 2019

For 2019, the DEHS looks forward to accomplishing the following:

- Improving the usability and data quality of the DEHS WebEHRS system (e.g., implement new establishment type definitions)
- Piloting the new version of NDECI in several Areas
- Revitalizing the IHS Injury Prevention Specialist Fellowship advanced training program
- Co-hosting the inaugural AI/AN Injury and Violence Prevention Conference
- Preparing for a new TIPCAP funding cycle (2020–2025)
- Creating an option to the two-year Bethesda-based Uniformed Services University of the Health Sciences/IHS IEH MSPH and residency program while continuing to conduct the traditional program
- Publishing the revised Indian Health Manual, Part 1, Chapter 9 on the Occupational Safety and Health program, last revised in 1994.

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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ANNUAL REPORT 2018

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