

Report from the Field

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Value of Environmental Health During the COVID-19 Pandemic: A Story From Indian Country

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Abstract

The coronavirus disease 2019 (COVID-19) pandemic challenged not only the health-care industry, but also the public health infrastructure in new and wide-ranging ways. Environmental health (EH) professionals have proven to be an essential component of the interdisciplinary public health solution required to prevent, respond, and recover from the COVID-19 pandemic. The Indian Health Service's Division of Environmental Health Services is a community-based program offering a broad scope of environmental health services and technical assistance. Significant COVID-19 workload activities were recorded from March 2020 through March 2021. A total of 62.7% of the Division's federal staff completed a 24-question survey in February/March 2021. Primary roles relating to community-based EH, institutional EH, and incident command system support/teams became apparent. Results indicated Division of Environmental Health Services staff provided critical leadership and used their established, trusted, interdisciplinary partnerships to help ensure critical resources and services were available in Indian Country.

Coronavirus disease 2019 (COVID-19) was declared a pandemic by the World Health Organization in March 2020. American Indians and Alaska Natives have been disproportionately impacted by COVID-19, with a hospitalization rate 5.3 times higher than the general population and infection rates 3.5 times higher than non-Hispanic whites.^{1,2} Environmental health (EH) professionals are an essential component of the interdisciplinary public health solution required to prevent, respond, and recover from the COVID-19 pandemic.³

Environmental health is a critical component of a comprehensive public health program.^{4,5} The Indian Health Service (IHS), provides federal health services to 2.6 million American Indians and Alaska Natives at 574 federally recognized tribes in 37 states. The agency's Division of Environmental Health Services (DEHS) is a community-based program offering a broad scope of EH services and technical assistance, from food safety to community injury prevention to occupational safety and health as well as emergency preparedness and response. It is comprised of over 125 talented professionals, with approximately 70% of them located in regional or local offices, providing direct services to American Indian and Alaska Native communities. Organizationally, there is 1 headquarters office, and 12 area (regional) offices across the United States, who manage district and field offices. Over 96% of the staff hold a bachelor's degree (24% higher than the national average) in environmental health (some in a related field like occupational safety and health or biology), with 65.8% of those also having a master's degree (35% higher than the national average).⁴ Nearly 75% of the staff possess the registered environmental health specialist/registered sanitarian credential (11% higher than the national average),⁴ 11.4% are certified safety professionals, and 8.9% are certified in public health.

In early 2020, DEHS shifted its efforts to focus on slowing the transmission of COVID-19 within tribal communities. As the pandemic progressed, it was clear that DEHS staff played a critical role in COVID-19 prevention, response, and recovery efforts, but the scope and nature of the work had not been fully documented. The following is a summary of our primary roles, the activities completed in those roles, discusses the successes, challenges, and lessons learned, and this report enhances the understanding of EH contributions that are essential for a comprehensive response to the COVID-19 pandemic.

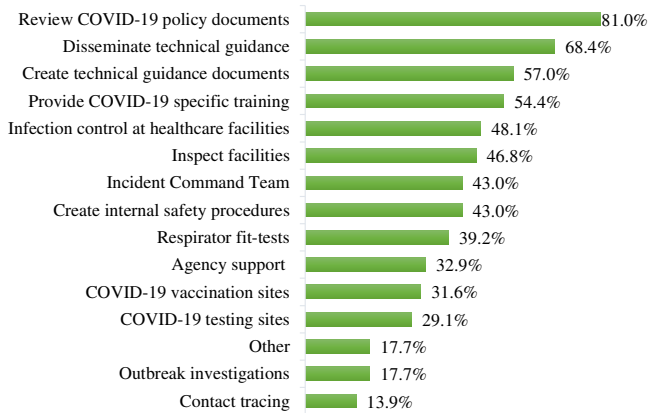


Figure 1. Indian Health Service's Division of Environmental Health Services staff reported COVID-19 activities (February 2020-March 2021).

Discussion

Significant workload activities were recorded from March 2020 through March 2021, and 62.7% of the Division's federal staff completed a 24-question survey anonymously in February/March 2021, a time period representing the initial 12 months of the COVID-19 pandemic. Several questions in the survey were adapted from other employee surveys.⁶⁻⁸ Primary roles relating to community-based EH, Institutional EH, and ICS support/teams became apparent.

Figure 1 summarizes survey respondents' COVID-19 activities. Staff selected an average of 6.2 responses of the 15 options provided, with a range of 0-12 responses. Staff estimated approximately 55% of their time was spent on these activities, with the remainder of their time spent on non-COVID-19 related work. There were differences in time spent on COVID-19 work by office type. Staff from regional offices who are typically in management roles reported more time spent on COVID-19 (especially related to incident command system (ICS) support) work than staff in field offices who reported more time spent on routine-EH work (ie, non-COVID-19 work). However, 88.6% reported doing at least some routine-EH work during the pandemic like conducting inspections, trainings, or investigations, and injury prevention.

COVID-19 Community-Based EH

The most common activities performed include reviewing COVID-19 policy documents (81.0%), disseminating technical guidance (68.4%), and creating technical guidance documents (57.0%). Less common activities include assisting with COVID-19 vaccination sites (31.6%) and testing (29.1%), conducting outbreak investigations (17.7%), and doing contact tracing (13.9%).

Common topics of COVID-19 community-based EH activities were: COVID-19 policy documents and guidance; technical assistance to tribal authorities; and extensive outreach to community programs regarding COVID-19 prevention measures.

COVID-19 Institutional EH

Staff across all organizational levels consistently reported engaging in COVID-19 institutional EH activities approximately 17% of their time. The COVID-19 response greatly expanded the need for institutional EH services for occupational safety, environmental infection control, and industrial hygiene. This workload required the training of and efforts from DEHS staff beyond those who

historically have engaged in institutional EH. The majority of the institutional EH workforce devoted much of their time to ICS support.

Common topics of COVID-19 institutional EH activities were: personal protective equipment training/management/supply, technical assistance with test kits, safety/infection control assessments of drive-up testing sites, technical assistance with preparations for surge capacity and recovery, extensive technical assistance with plans and preparations to reopen tribes and establishments, conduct inspections/assessments, and support vaccine distribution (eg, transport from hubs).

Incident Command System Support

DEHS held significant roles on incident command teams (ICTs) from IHS headquarters through to state, tribal, and local teams. Forty-three percent (43.0%) reported they had a role on an ICT. Staff served as half of the IHS Area Emergency Management Point of Contacts (EMPOCs) and several other leadership roles on area ICTs (eg, Incident Commander, Deputy Commander, Safety Officer, Public Information Officer, Operations Chief, Logistics Chief, and Emergency Operations Center Manager).

Such a dominant presence of EH staff on these teams is a result of their broad operational knowledge, established relationships with officials throughout the public health system, training in the ICS, experience in various emergency preparedness and response events, and ability to communicate technical topics to wide-ranging audiences. This presence demonstrates the high level of trust agency and tribal leadership has in DEHS staff.

Success, Challenges, Lessons Learned

There were several successes observed related to the prevention, response, and recovery from the COVID-19 pandemic. Common themes were: importance and value of EH; staff ability to showcase adaptability, flexibility, resourcefulness; increased teamwork; and emphasis on worker safety.

It is evident how involved DEHS staff are in COVID-19 response activities at all levels of the agency. With each respondent involved in over 6 COVID-related activities, DEHS staff were able to showcase their flexibility, adaptability, resourcefulness, communication skills, and ability to work as a team to get work done in a constantly changing environment. DEHS staff have a unique set of skills that proved critical in supporting COVID-19 prevention measures at the community level. Traditional EH work relies heavily on building relationships and trust with communities and tribal partners. During the pandemic, these relationships were foundational to effectively disseminate up-to-date information, answer questions, and provide support to facilities and tribal leadership.

DEHS staff reported several challenges related to their prevention, response, and recovery from the COVID-19 pandemic. Common themes were: roles, expectations, and guidance ill-defined; communication throughout the Division varied; preparation for emergencies insufficient; and majority of staff experienced burn-out.

The most common challenge reported was job function uncertainties at 58.2%. Field staff indicated more job function uncertainties (70%) compared with district (60%) and area (40%) staff. While many field staff felt uncertain or wanted better communication, others reported clear communication within their local program, that they knew what work needed to be done and how to achieve it. Opportunities exist to expand effective

communication processes among teams and clarify everyone's roles and expectations. More than 82% of staff reported experiencing at least 1 symptom of burn-out. When analyzed by office type, area and district staff reported higher levels of burn-out compared with field staff.

Based on the successes, challenges, and workload reported, there are important lessons learned:

- Mission first, people always: set expectations; provide staff support
- Effective communication critical: sustain what worked; improve where needed
- Environmental health is essential and influential: it is a critical component of comprehensive public health program and approach to improve health
- Public health emergency management enhancements needed: locally and nationally.

DEHS provides a broad scope of EH services and technical assistance. EH professionals should possess a foundational, operational knowledge of the principles and practices of environmental public health emergency and disaster management in addition to baseline training on the ICS. The COVID-19 pandemic illustrated the need for formal emergency management programs within public health systems locally and nationally. Demands on the EMPOCs grew significantly and many regions augmented their emergency management duties with staff from other programs. When assigned as only a collateral duty, emergency management is subject to receiving less attention than it deserves due to competing priorities resulting in services that may not be as robust as needed.

Conclusion

- Environmental health is vital.
- Managers should ensure staff support.
- Effective communication is essential.
- Formal emergency management programs are needed.

The IHS Division of Environmental Health Services is an essential component of the interdisciplinary public health solution required to prevent, respond, and recover from the COVID-19 pandemic. DEHS engages with partners and fill multiple roles and provides invaluable contributions. Primary roles are related

to community-based EH, Institutional EH, and ICTs at all levels (local to federal).

Managers need to ensure they strengthen the workforce by sustaining personnel wellbeing support systems and practices they have in place as well as explore new ones, like how telework may be utilized effectively. Managers should also ensure an established approach for effective communications among their teams, and that roles and expectations are understood. Environmental health professionals should possess a foundational, operational knowledge of the principles and practices of environmental public health emergency and disaster management in addition to baseline training on the ICS. And public health agencies should fund and institute formal emergency management programs to ensure continuity of operations.

Conflicts of interest. All authors declare there no conflicts of interest or financial ties to disclose.

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