ENVIRONMENTAL HEALTH WORKFORCE NEEDS ASSESSMENT IN RESPONSE TO COVID-19

NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

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EXECUTIVE SUMMARY

Environmental health (EH) professionals are essential contributors to the delivery of public health services by anticipating, assessing, and reducing risks associated with modern life. These efforts comprise infection control, disease prevention, and disaster preparation, response, and recovery, among other services. Recent publications associated with the Understanding the Needs, Challenges, Opportunities, Vision, and Emerging Roles in Environmental Health (UNCOVER EH) initiative established that EH professionals play a crucial role in protecting our national health, safety, and security.

The National Environmental Health Association (NEHA) fielded a nationwide EH workforce needs assessment in response to COVID-19 from July 15–August 31, 2020. The aim of the assessment was to collect primary data in support of efforts to assess EH workforce activities and identify needs in response to COVID-19. Information about the survey was sent to approximately 6,800 individuals via several e-mail marketing endeavors and had a reach of approximately 1,200 individuals via three social media platforms. In total, 767 individuals completed the survey. The preliminary findings are provided in this report. A comprehensive report will be published at a later date.

The findings are unequivocal. EH practitioners, many of whom are employed at small local agencies, are actively supporting COVID-19 response and recovery. Their contributions are felt in safely reopening and restoring the economy, emergency operation centers, contact tracing, and communications efforts, in addition to their customary responsibilities. They have been tasked to take on new roles and responsibilities that sometimes place them at risk of harm from the disease. They report being emotionally exhausted and understaffed. The impending vaccination initiatives will likely increase their workload. We recommend EH staff be included early as active and meaningful participants in formulating plans to vaccinate the public.

RESPONDENT OVERVIEW

NEHA received 767 responses from EH professionals working across various sectors of the field including governmental public health agencies (local, state, federal, tribal, and territorial EH programs), academia, industry, nongovernmental organizations, etc. As indicated in Figure 1, 52% of survey respondents were from local EH programs. The next highest represented workforce category was state EH programs (20%). This category was followed by the private sector (10%), which includes professionals working at private companies within industries such as retail food and consulting.
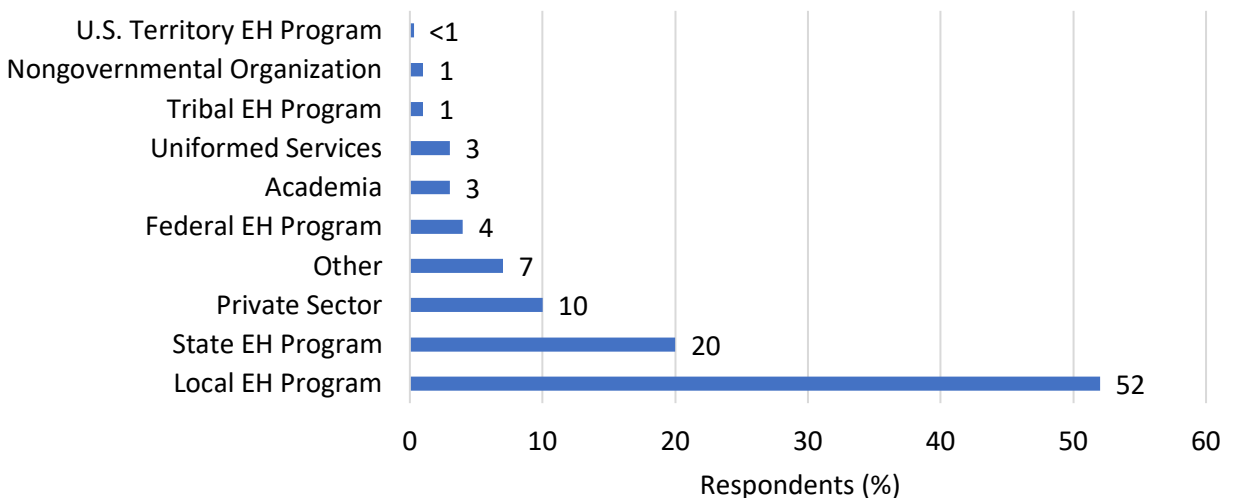

Figure 1. Respondent Representation by EH Workforce Category

Survey respondents were asked to indicate the NEHA region in which their work occurs (Figure 2). The results show that the largest number of respondents are based in Region 4 (198), followed by Region 6 (89), Region 8 (83), and Region 7 (82). Regions 1 and 2 had the fewest number of respondents, 52 and 50, respectively. Respondents could also indicate that their work is based in a U.S. territory, internationally, or is not regional. For these options, 2 respondents reported that they are based in U.S. territories, 13 indicated that they are based internationally, and 21 indicated that their work is not regional.
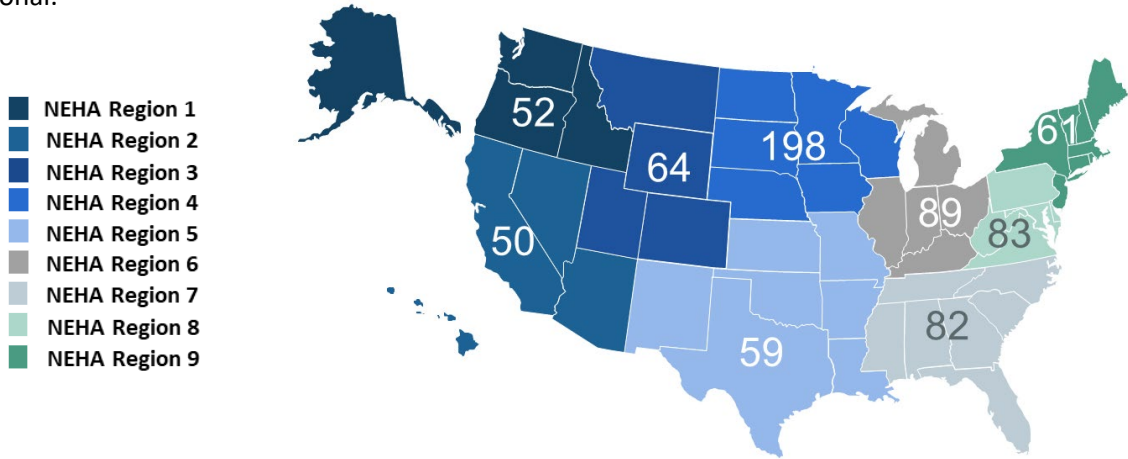
Figure 2. Respondent Representation by NEHA Region

In addition to NEHA region, respondents were asked to indicate the staff size of their EH workforce (Figure 3). Nearly one half of respondents reported that their EH workforce has 1–10 staff members. On the other hand, 21% of respondents reported working at larger EH departments with ≥50 staff members. The survey results show that the size of the workforce varies by workforce category. Figure 4 shows the size breakdown of workforce staff for local, state, and federal EH respondents.
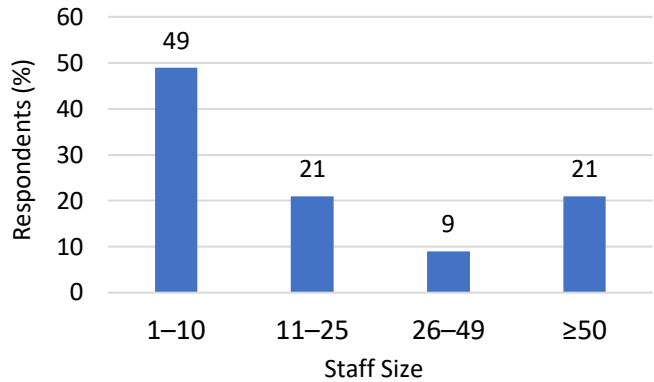
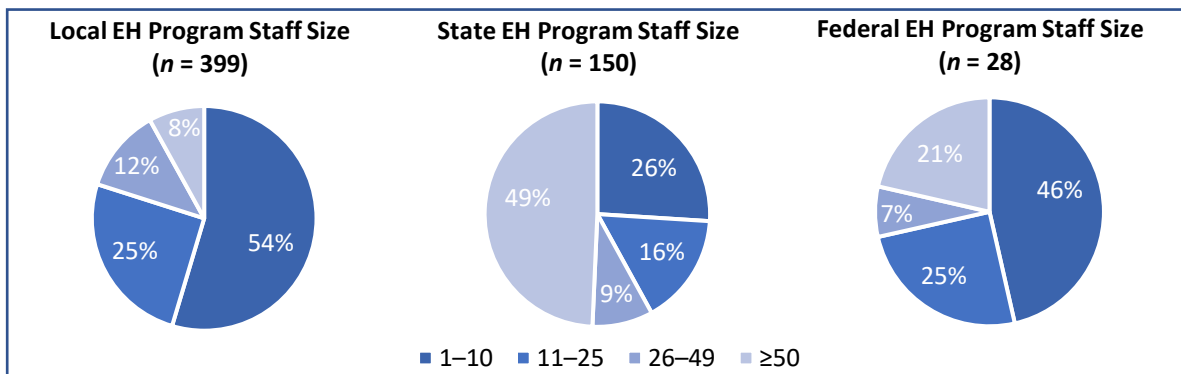**Figure 3. Respondent Representation by EH Workforce Staff Size**

Figure 4. Staff Size for Local, State, and Federal EH Program Respondents

IMPACTS OF THE COVID-19 PANDEMIC ON THE EH WORKFORCE

To assess the changing and shifting priorities of the EH workforce, respondents were asked to indicate needs, gaps, and issues their organization is facing due to COVID-19 (Figure 5). According to the survey, the most frequently identified issue caused by COVID-19 is staffing shortages, with 51% of respondents selecting this response. There is also evidence of a need for training and guidance and an increase in budget, supplies, and other resources. Fewer respondents (40%) indicated that they are experiencing challenges working from home. Further analysis will demonstrate what type of EH workforce (local, state, tribal, territorial, federal, etc.) selected each of these responses.
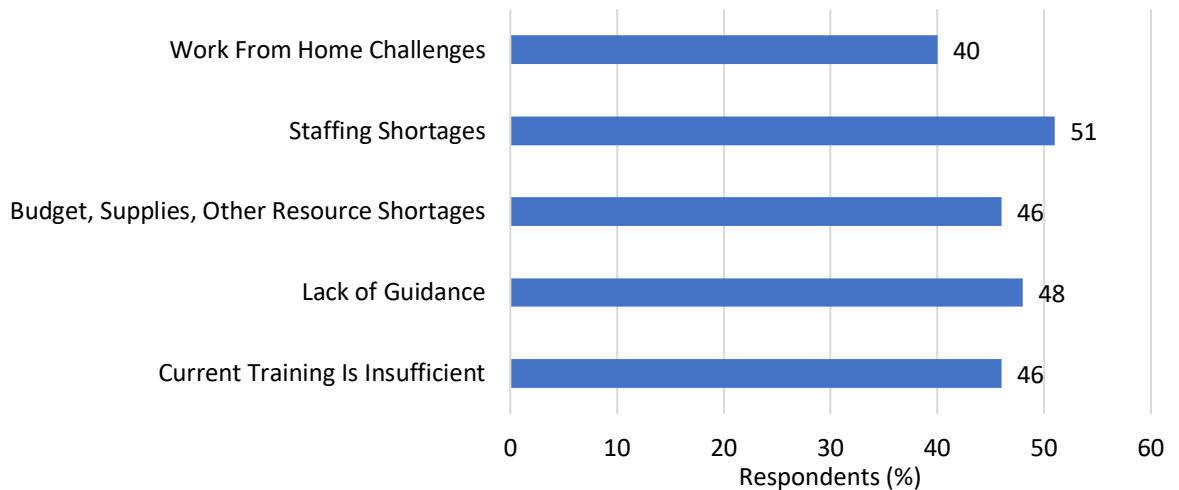

Figure 5. Identified Respondent Needs, Gaps, and Issues Caused by the COVID-19 Pandemic

Table 1 shows the information from Figure 5 by workforce category. Feelings of stress, insufficient training, overwork, and burnout, as well as staff shortages, are indicated the most frequently across workforce categories.

Workforce Category	Current Training Is Insufficient (%)	Lack of Guidance (%)	Budget, Supplies, and Other Resource Shortages (%)	Staffing Shortages (%)	Work From Home Challenges (%)	Feelings of Stress, Overwork, Burnout (%)	Job Function Uncertainties (%)
Local EH Program	**27.1**	**33.8**	**27.1**	32.8	**24.4**	**42.4**	32.2
State EH Program	11.4	**11.4**	11.8	13.2	**9.4**	13.3	12.1
Federal EH Program	2.4	1.7	2.3	1.4	1.7	2.4	1.5
Uniformed Services	0.8	1.2	0.6	0.9	**1.8**	1.8	0.8
Tribal EH Program	0.5	0.8	0.6	0.8	0.3	0.9	0.5
U.S. Territory EH Program	0.3	0	0.2	0.3	0.2	0.2	0.2
Private Sector	**4.9**	**2.3**	**4.9**	4.3	**3.0**	**3.6**	4.2
Academia	2.1	1.1	2.3	1.7	1.7	1.8	1.4
Nongovernmental Organization	0.2	0	0.3	0.3	0.5	0.5	0.2

Table 1. Identified Respondent Needs, Gaps, and Issues Caused by the COVID-19 Pandemic by Workforce Category

Note. Shaded cells with bolded numbers indicate statistical significance.

The survey also inquired if respondents are anticipating any efforts to reduce the financial burden that might impact EH workforce operations. Options were provided for respondents to indicate what type of impact was anticipated. Generally, respondents indicated that they did not know how efforts to reduce financial burden would impact the EH workforce and operations. Of the respondents, 12% indicated that they are anticipating a reduction in overall budget that might impact EH workforce operations (Figure 6).
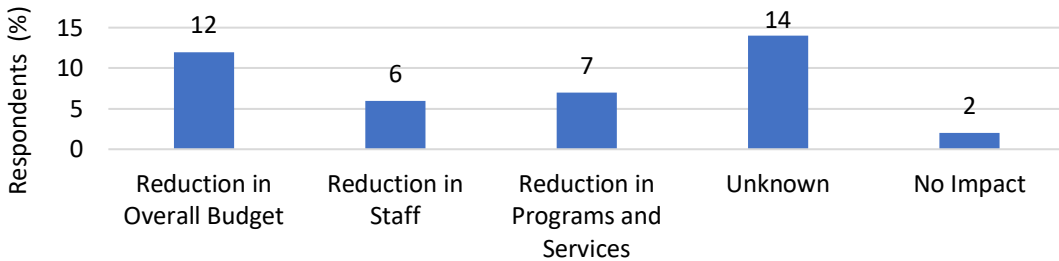

Figure 6. Respondent Anticipation of Efforts to Reduce the Financial Burden That Might Impact EH Workforce Operations

The survey presented a series of statements to EH personnel on coping with varying priorities, worker safety, and COVID-19 information acquisition and asked respondents to indicate their level of agreement with the statements. Respondents generally feel that they have been tasked with additional responsibilities but feel adequately trained to do so, have adequate personal protective equipment (PPE) and EH COVID-19 response resources, and use Centers for Disease Control and Prevention (CDC) documents to inform decision making (Figure 7). Almost one half of respondents (46%), however, agreed or somewhat agreed that there are enough employees to conduct the work. Only 52% of respondents agreed or somewhat agreed that people in their jurisdictions comply with public face mask guidance. Most respondents (64%) use the CDC website as their primary source of EH COVID-19 response information. Likewise, 82% have used CDC's technical support or guidance documents to inform their decisions.
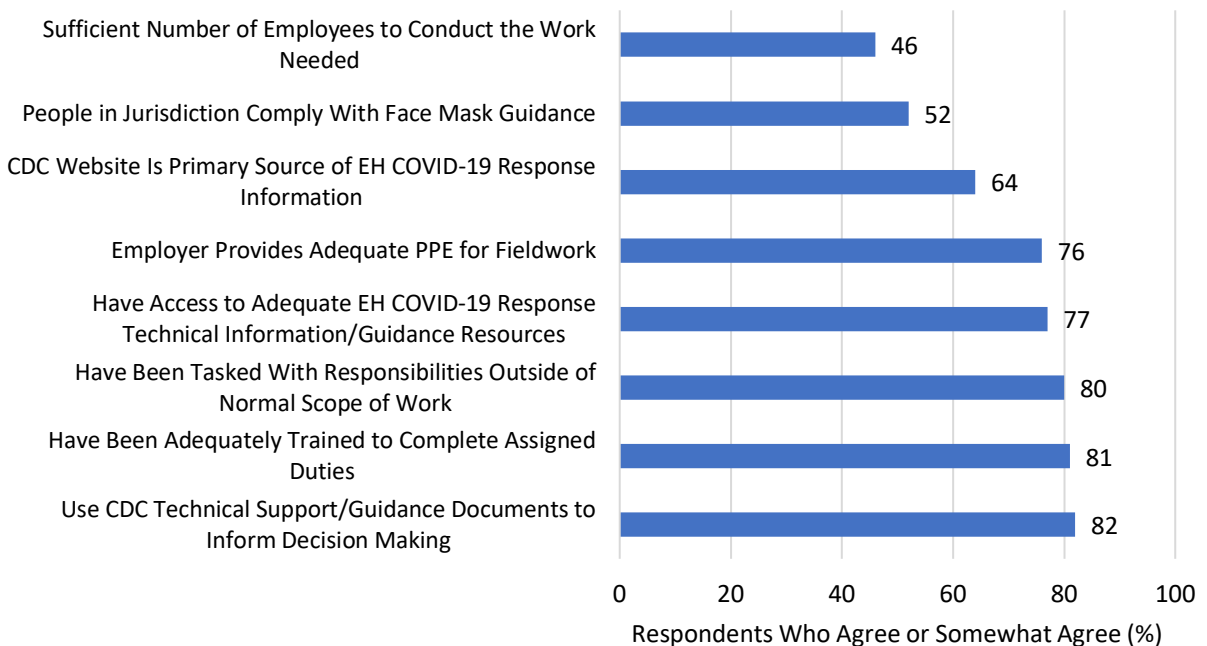

Figure 7. Respondent Level of Agreement With Statements on Coping With Varying Priorities, Worker Safety, and COVID-19 Information Acquisition

Expanded Scope of Work

Respondents from all workforce categories have experienced increased responsibilities outside their typical scope of work (Figure 8). Respondents from federal EH programs have experienced the least amount of additional responsibilities (56%). Respondents detailed their thoughts on the expanded scope of work. One respondent commented, "We are being asked to do our normal jobs on top of numerous new responsibilities and there is not enough time in the day to achieve everything." Another respondent said, "We simply do not have bandwidth to conduct normal job operations, so nearly 100% of my normal work is on hold and has been since March."
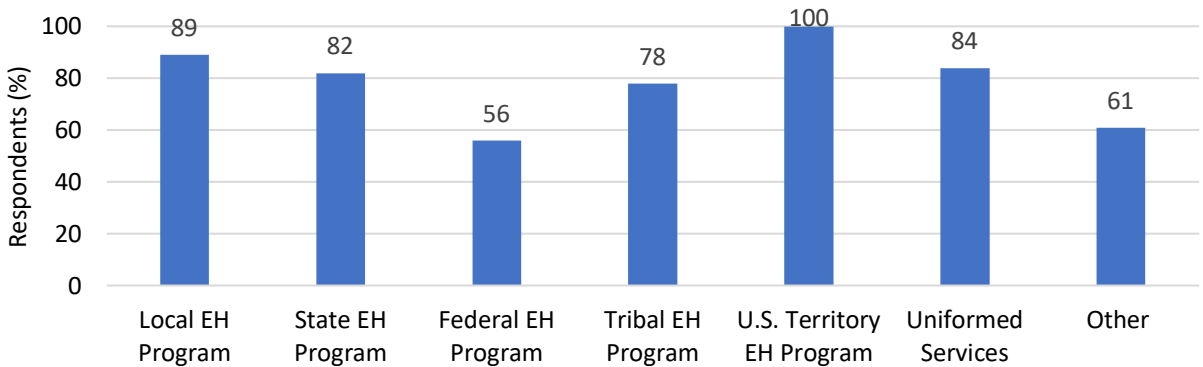
Figure 8. Respondents Tasked With Responsibilities Outside Scope of Work by Workforce Category

Capacity to Respond

When asked if their program had enough employees to conduct the work needed, the percentage of respondents who agreed with having an insufficient number of employees was high among several workforce categories. The highest report of an insufficient number of staff was reported by tribal EH programs (67%). Over one half of the respondents from state EH programs (64%) and local EH programs (60%) also reported an insufficient number of staff (Figure 9). Figure 10 shows the percentage of respondents who reported insufficient staff numbers by workforce size.

Respondents explained staffing challenges and issues in comments such as, "Both before and during the pandemic, we have had employees move around to other positions (within our health department and outside of it) and the old positions were never filled with responsibilities passed to others on the team who may or may not have been overloaded already." Another respondent commented that "there is too much work, expectations are that we work 24/7 and immediately respond to all inquiries, and the working from home model reduces the separation of personal and work time. Plus, our families and loves ones are also experiencing many difficulties from job/wage loss, lack of childcare, can't see loved ones from afar. It's overwhelming."
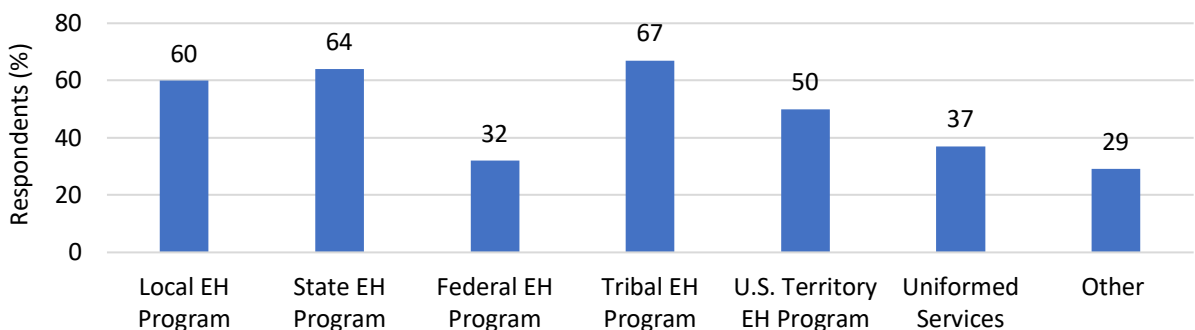
Figure 9. Respondents Reporting an Insufficient Number of Staff by Workforce Category
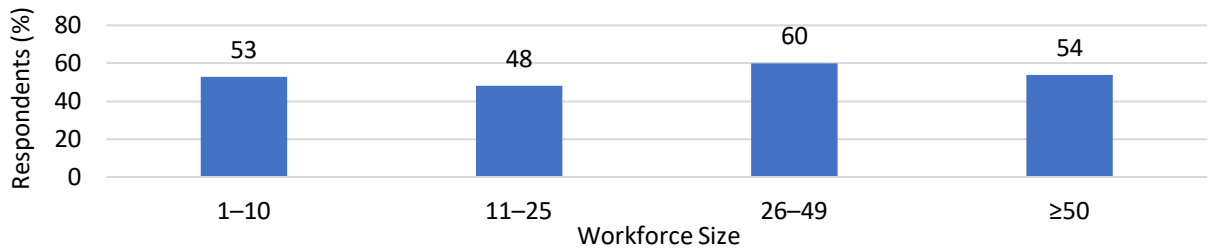
Figure 10. Respondents Reporting an Insufficient Number of Staff by Workforce Size

Insufficient Training

Respondents were asked to rate their agreement with whether they have been sufficiently trained to complete their assigned duties. Respondents from state EH programs (23%) and local EH programs (21%) reported the most inadequate training (Figure 11). Many respondents commented on the challenges and needs around training. One respondent commented that "all in-person trainings have been canceled so finding things we can do on our own time is challenging. Also, given our need to respond to COVID-19, time for training is incredibly limited."
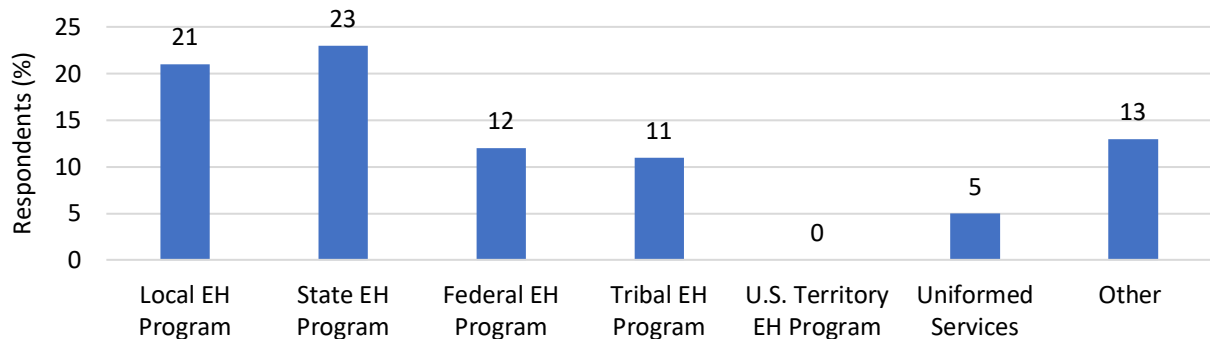
Figure 11. Respondents Reporting Insufficient Training by Workforce Category

Most respondents reported having sufficient access to EH COVID-19 resources despite having insufficient training. Even with access to COVID-19 resources, many expressed frustrations in continually changing information and guidance. The comments made by respondents exemplify the struggles the EH workforce faces with the available information and guidance. One respondent stated that "coordinating resources from FEMA and National Supply has been challenging. Also, mixed messaging from various agencies has been a huge obstacle when trying to relay appropriate information to stakeholders and communities. This has also impacted policy development and guidance documents." Another respondent commented that "there is so much conflicting guidance from many different agencies, which it makes it tough to give definitive answers."

Worker Safety

When asked if their employer provided adequate PPE to wear in the field, 25% of respondents from tribal EH programs indicated a lack of PPE from their employer. Respondents from state EH programs (23%), federal EH programs (20%), and local EH programs (16%) also reported a lack of PPE provided by their employer. Respondents from the Uniformed Services and Other category reported a minimal need for additional PPE (Figure 12). Many respondents expressed challenges related to accessing adequate PPE. The following comment illustrates common challenges with acquiring PPE: "Initial shortages of PPE and PPE costs made early response difficult, particularly use of N95 respirators and fit test regulation clarity. Also, supply and effectiveness of cloth PPE has caused much confusion with individuals believing these items protect them from others."
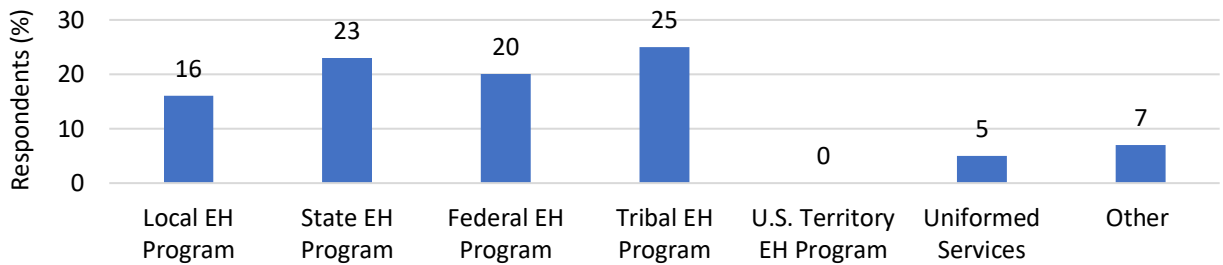
Figure 12. Respondents Reporting Inadequate Provision of PPE by Workforce Category

BURNOUT IN THE EH WORKFORCE

There was a substantial number of respondents who agreed or strongly agreed (74% and 67%, respectively) that they are experiencing burnout symptoms, including feeling more emotionally exhausted and feeling worn out at the end of the working day. Other symptoms of burnout reported include feeling that every working hour is tiring, feeling exhausted thinking about another day at work, and feeling frustrated about their work. As burnout symptoms progressed, respondents tend to agree or strongly agree more (Figure 13).
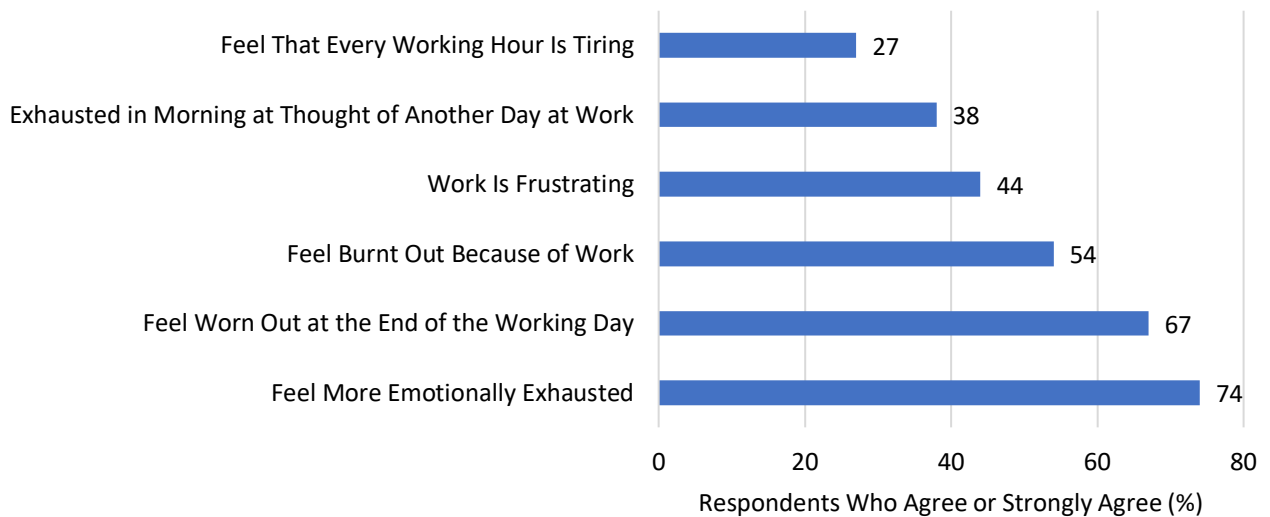

Figure 13. Respondent Level of Agreement With Burnout Symptoms in the EH Workforce

Most respondents across workforce categories feel emotionally exhausted (Figure 14). In terms of being emotionally exhausted, 100% of respondents from U.S. territory EH programs agreed, followed by 80% from local EH programs, 74% from the Uniformed Services, and 72% from state EH programs. Furthermore, 67% of respondents from tribal EH programs report emotional exhaustion followed by 64% of respondents from federal EH programs. A similar trend is presented in Figure 15, which shows the percentage of respondents who reported their level of agreement with being emotionally exhausted by workforce size. As these data indicate, the EH workforce is experiencing high levels of burnout due to COVID-19. These feelings were expressed throughout the survey in respondent comments. The following comments exemplify the burnout and stress felt among the EH workforce.

"The entire staff, including EH, is incredibly burnout and stressed. We are all feeling the heavy weight of competing priorities and not being able to get work done due to the response work that has to be done."

"This has been one of our biggest issues throughout. The stress of the pandemic in general, coupled with the sudden increase in work, lack of guidance, and the enormous pressure of trying to manage a pandemic while dealing with seemingly endless angry and upset people, has been incredibly difficult and taxing. Additionally, staff have had to work consistently long days and/or weekends, with many not receiving compensation because they are salary employees."

"The amount of work we are doing is too much, especially in addition to our normal duties. Normally I like my job and look forward to it. Now whenever I get an e-mail, however, I get anxiety before reading it."
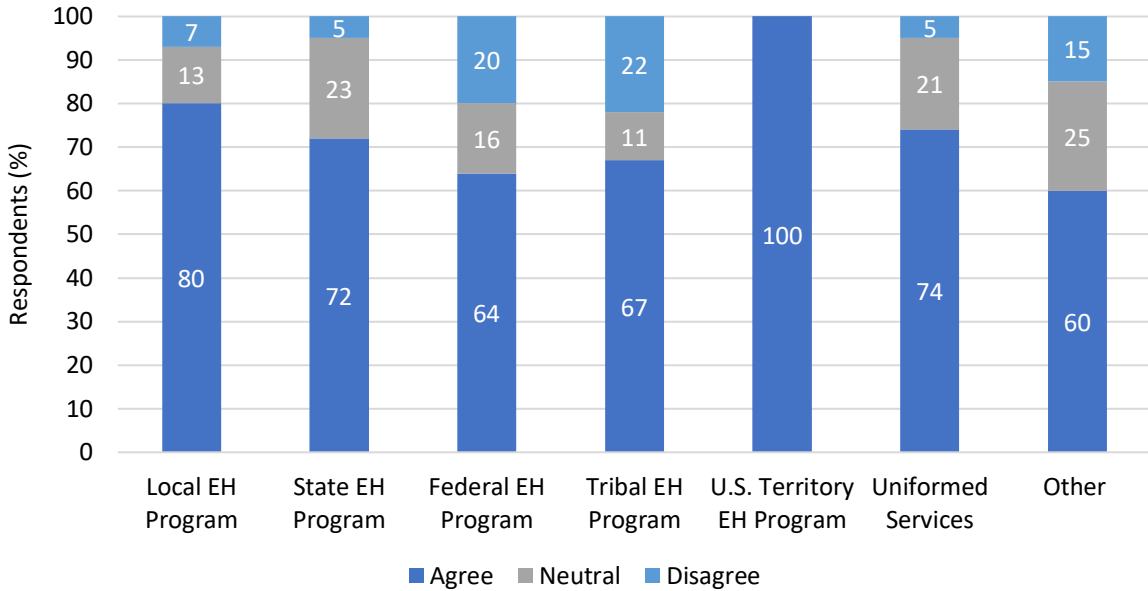
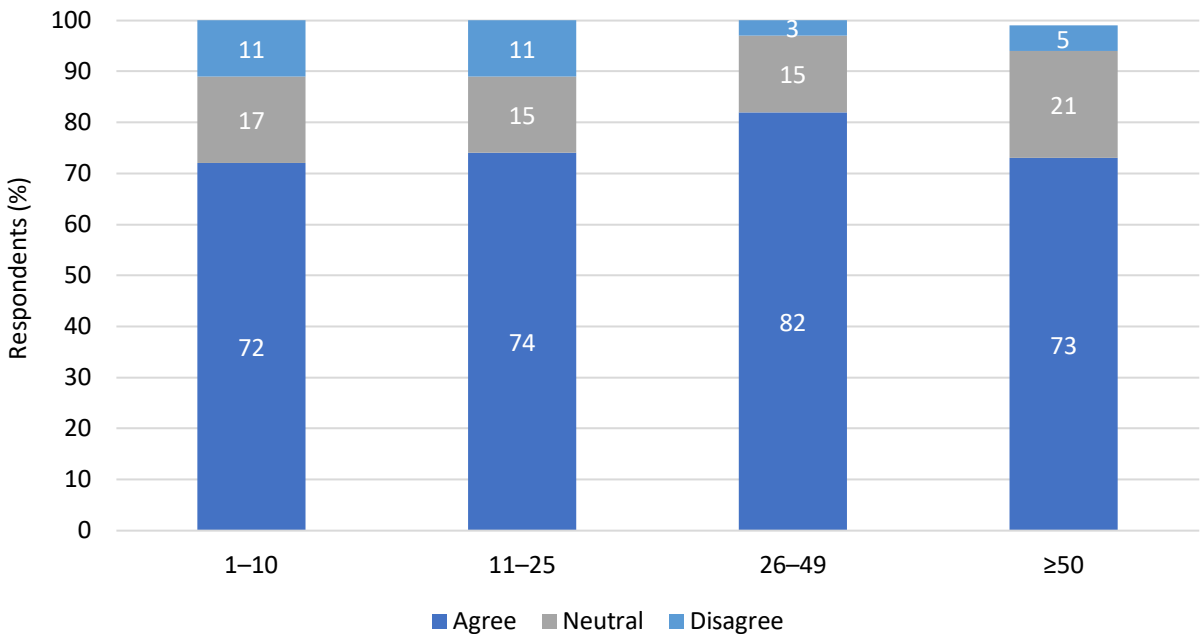**Figure 14. Respondent Level of Agreement With Being Emotionally Exhausted by Workforce Category**

Figure 15. Respondent Level of Agreement With Being Emotionally Exhausted by Workforce Size

Figure 16 shows the various COVID-19 response activities the EH workforce has been engaged in. Most respondents indicated being involved in public relations and communication activities (63%) and enhanced inspections and enforcement work (62%). Only 7% of respondents indicated being involved in crowd dispersal.
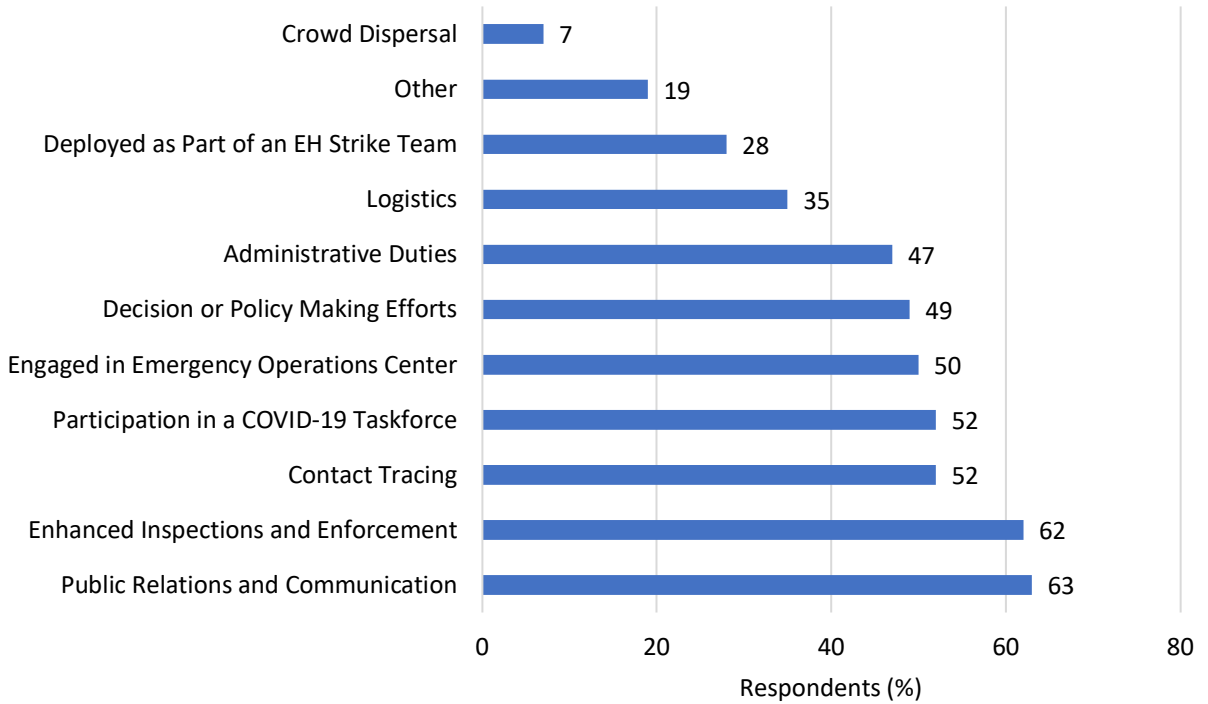

Figure 16. EH Workforce Involvement in the COVID-19 Response

Impact on Inspections

EH inspections have been impacted considerably by COVID-19 (Figure 17). Results from the survey show that 13% of respondents are not conducting inspections. The majority of respondents indicated that inspections are taking place for retail food establishments (69%), followed by inspections for recreational water (44%), wells (41%), other (35%), and vector control (30%).
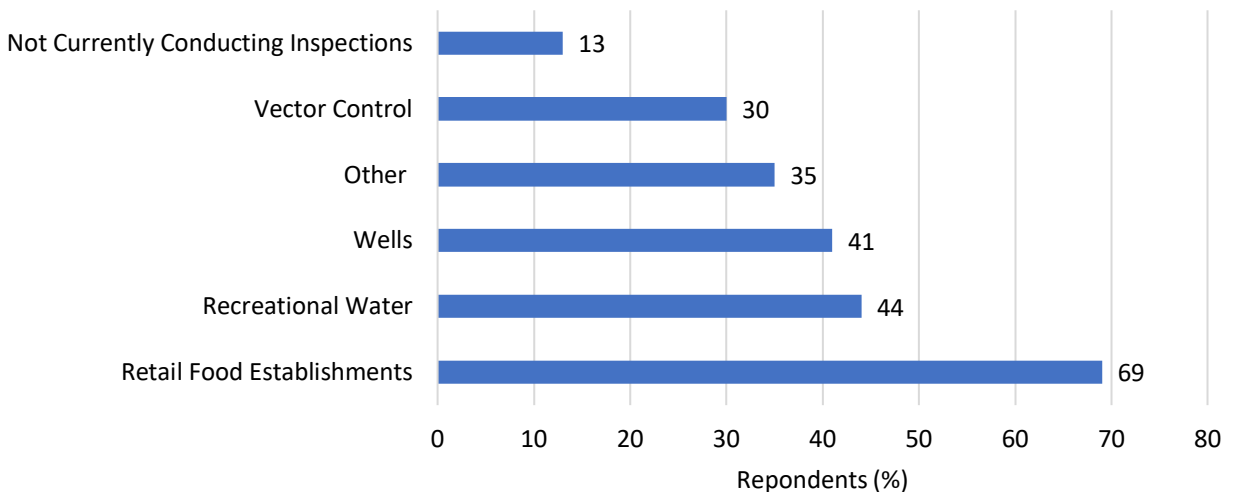

Figure 17. EH Inspections Performed by Respondents During COVID-19

Furthermore, 77% indicated that they conduct in-person inspections, whereas 20% indicated that they are performing virtual inspections. Respondents also selected desk audits and other options as current alternatives to in-person inspections (Figure 18).
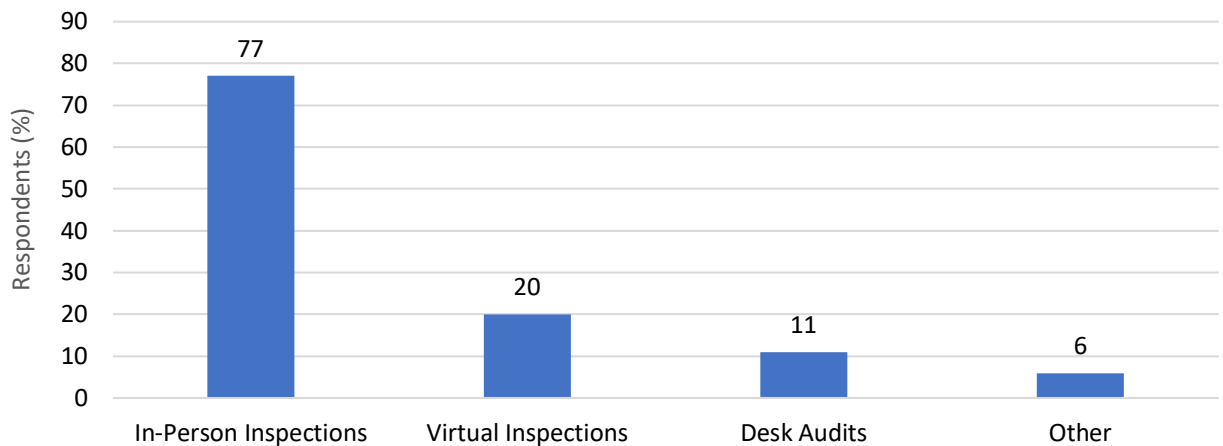

Figure 18. Types of EH Inspections Being Conducted by Respondents

LESSONS LEARNED FROM THE FIELD

Respondents were asked an open-ended question to share lessons learned in response to COVID-19. The following comments are examples of the many lessons learned over the course of this year.

"In times of a crisis, we rely on the relationships we have built. Build those relationships now so you know who to reach out to in times of crisis and so that you are a trusted source to those individuals in a time of crisis."

"Remain flexible, utilize your problem-solving abilities, and effective communication is the most important tool available to EH practitioners."

"Ensure a high-quality business continuity plan regarding pandemic/evacuation of facilities to ensure smooth transition to and from homework situations and production flexibility."

"Without support administration regarding enforcement, establishments continue to push the limits of compliance and when this crisis finally comes under control, we need to be hyper focused on preparing for the next pandemic. We need to be building stakeholder infrastructure to ensure we're ready. We have also learned that we need to recognize local health department weaknesses and struggles and listen to what they need."

"Obtain extensive knowledge and invest in highly secure and effective technology to assist with the adjustment from in-person to virtual. Be flexible. Learn how to adapt. Be empathetic and sensitive to your staff needs. Listen closer to concerns. Provide mental health and counseling resources as needed."

"Ensure that your policies and procedures are documented and accurate at all times so you do not have to figure it out during an emergency. Maintain technological efficiency as a rule so you do not have to rush to find sufficient technology during an emergency."