

# Environmental Health Competency Questionnaire Report



Summary Results • February 22, 2021



## SUMMARY REPORT OF QUESTIONNAIRE FINDINGS

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**D**uring the summer of 2020, the Environmental Health & Equity Collaborative’s Education and Workforce Committee undertook an assessment of current environmental health workforce needs related to specific knowledge, skills and competencies. Ultimately, the committee recruited a total of 51 respondents from a variety of environmental health backgrounds to take its questionnaire.

The effort was conducted in response to both anecdotal evidence of a lack of sufficiently prepared graduates to fill current entry-level environmental health positions, as well as insights from a recently published article on the Understanding the Needs, Challenges, Opportunities, Vision and Emerging Roles in Environmental Health (UNCOVER EH) project, which is a joint effort of Baylor University, the National Environmental Health Association, and Centers for Disease Control and Protection<sup>1</sup>. The UNCOVER EH article cited, among other things, an impending loss of veteran environmental health practitioners to retirement and concern related to an insufficient number of trained individuals to fill the gap. The committee’s intent was to gather data from coalition members that might illuminate the current environmental health workforce situation and needs related to entry-level positions in the field.

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<sup>1</sup> Gerding, Justin A., Elizabeth Landeen, Kaitlyn R. Kelly, Sandra Whitehead, John Sarisky, and Bryan Brooks (2019) Uncovering Environmental Health: An Initial Assessment of the Profession’s Health Department Workforce and Practice. *Journal of Environmental Health* (81/10), 24-33.

## QUESTIONNAIRE RESPONSES

### Job Positions and Areas of Employment

Fifty-one people responded to the questionnaire. The majority of respondents are environmental health directors or managers and environmental health specialists involved in the hiring of entry-level environmental health professionals, followed by bureau chiefs, environmental health professors and a variety of environmental health practitioners also involved in entry-level hiring within their organizations (Table 1).

The overwhelming majority of respondents work for local or state health departments, followed by a small number working in the U.S. Public Health Service (USPHS) and U.S. International Health Services (USIHS) (Figure 1). Respondents work in a variety of environmental health employment areas, with food safety and sanitarian leading the work-area categories, followed by environmental health education, environmental issues/monitoring, and recreational environmental health (Table 2). Numerous “other” categories were listed as well, highlighting the diversity of opportunities available in the field (Table 3).

**TABLE 1. JOB TITLE/POSITION OF RESPONDENTS (N=51)**

Job Title/Positions	Total Responses	Job Title/Position	Total Responses
Environmental Health Manager	8	Health Assessor	1
Director	6	Consultant/Educator	1
Bureau Chief	3	Emergency Preparedness Director	1
Assistant Professor	2	Director of Training	1
Environmental Health & Safety Manager	2	Director, Environmental Public Health	1
Project Manager	2	District Standardization Officer	1
Senior Environmental Health Officer	2	Division Director	1
Environmental Health Specialist II	2	Env. Epidemiology Program Manager	1
Toxicologist	2	Environmental Health Administrator	1
Assistant Environmental Director	1	Environmental Health Officer	1
Assistant Public Health Administrator	1	Environmental Health Program Supervisor	1
Chief Sanitarian	1	President & Principal	1
Environmental Health Specialist	1	Registered Nurse	1
Environmental Health Specialist IV	1	Safety and Health Expert	1
Environmental Health Specialist, Sr.	1	State Environmental Health Director	1
Food Safety Inspection Inspector	1	Health Assessor	1

Additional job positions submitted by respondents included:

- Family and Woman-Owned Small Business
- Environmental Health Bureau
- Radon Mitigation Contractor

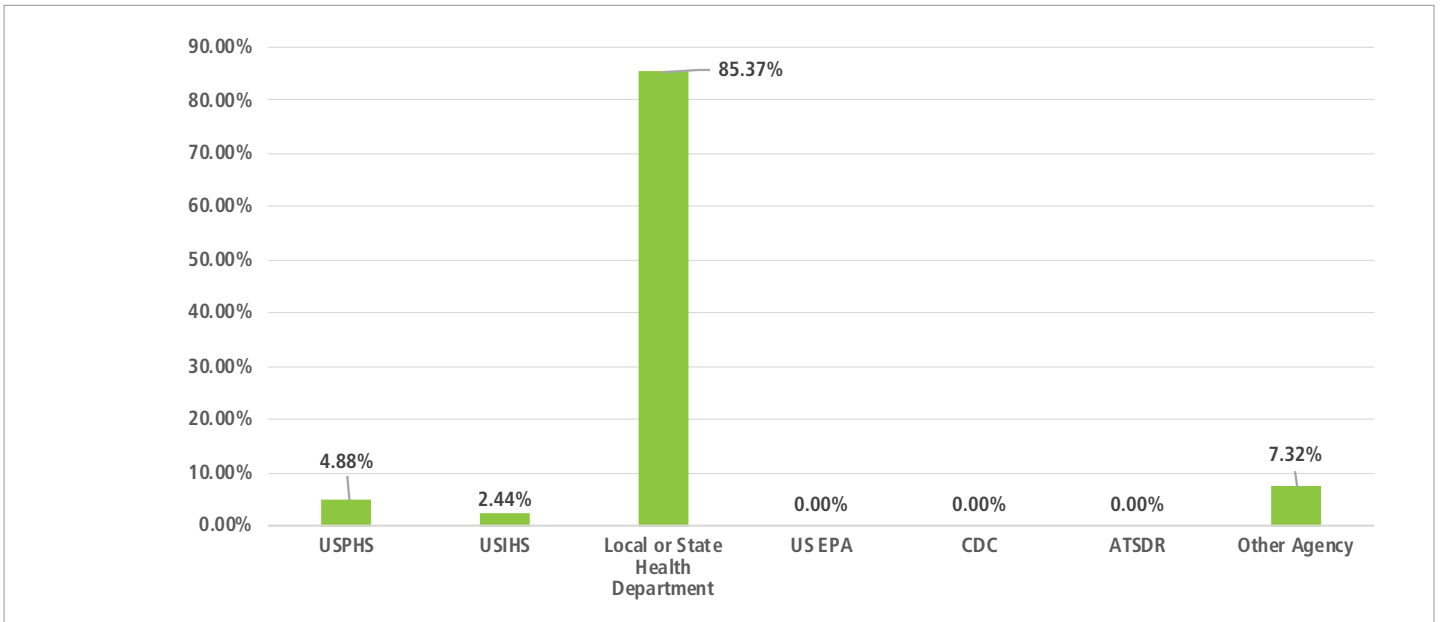


Figure 1. Distribution of Respondents Working at Government Agencies — Local, State, Federal, Tribal, etc. (N = 41)

TABLE 2. DISTRIBUTION OF RESPONDENTS' AREAS OF ENVIRONMENTAL HEALTH EMPLOYMENT

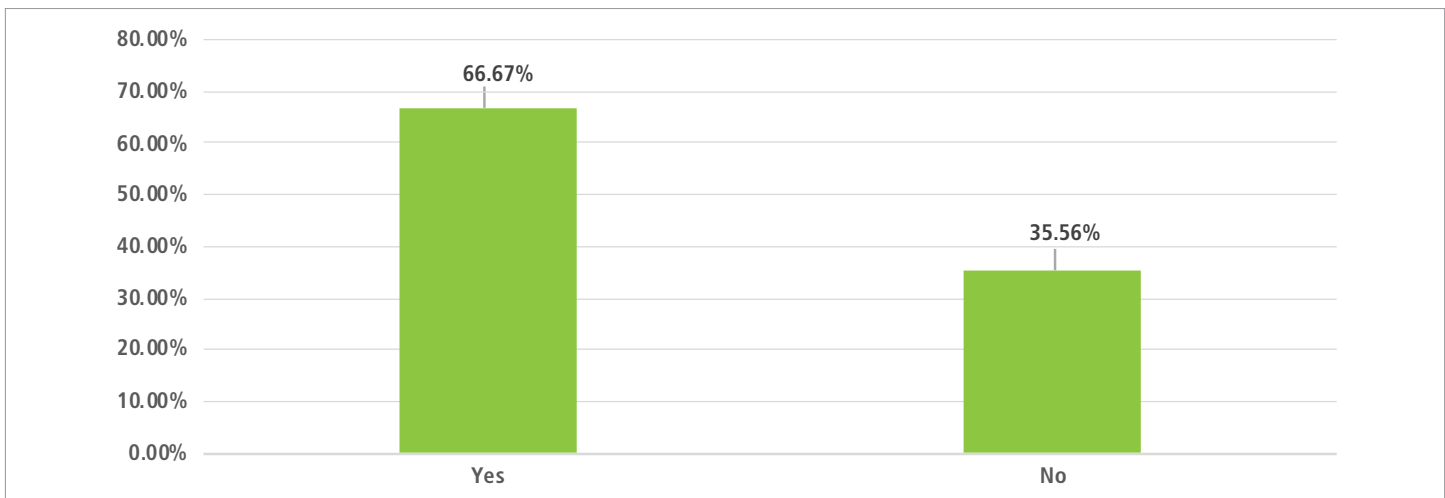
Environmental Health Employment Area (N = 51)	Percentage of Respondents (N=51)
Food Safety	49.02%
Sanitarian	49.02%
Environmental Health Education	33.33%
Environmental Issues/ Monitoring	33.33%
Recreational Environmental Health	33.33%
Water or Wastewater Treatment	29.41%
Emergency Preparedness and Response	25.49%
Other	25.49%
Vector Control	23.53%
Solid and HAZMAT Waste Management	9.80%
Environmental Justice	7.84%
Remediation	5.88%
Air Quality Management	5.88%
Climate Change	5.88%
Industrial Hygiene	5.88%
Agriculture or Food Production	3.92%
Academic Research	3.92%
Manufacturing	0.00%
Resource Extraction	0.00%
Laboratory	0.00%

**TABLE 3. OTHER AREAS OF ENVIRONMENTAL HEALTH EMPLOYMENT LISTED BY RESPONDENTS**

Environmental Health Assessment
Field Response for Air, Land, Water, Retail & Certain Manufactured Foods, Rabies, Septic Tanks, Rabies, Vector, EBL Investigations, Rad & Chemical Emergency Response, Environmental Laboratory (Water, Air, Rad, Milk & Dairy)
Hazardous Building Materials Training for Certification, Accreditation and Regulatory Compliance (focusing on the difference between “legal” and “safe”)
Health Care
Healthy Homes and Childhood Lead Poisoning Prevention
Injury Prevention
Job Not Related to Environmental Health
Lead Poisoning Prevention
Management
Occupational and Environmental Health Nursing
Population Health/Public Health Nursing, Infectious and Communicable Disease
Radon Mitigation Services
Toxicology/Risk Assessment/Exposure Surveillance

### Entry-Level Hiring Information

More than 60% of respondents had hired an entry-level environmental health employee in the last year (October 2019-October 2020) (Figure 2). Lack of funding or no need for new employees are the main reasons for lack of new hires in the past year. Just over 10% of respondents cite “no qualified applicants” or “hiring freeze” as reasons for no new hires in the last year (Figure 3). Interestingly, while a low number of respondents cite “no qualified applicants” (Figure 3) as a reason for not hiring entry-level positions in the last year, 80% of respondents also report a low level of availability of qualified applicants for entry-level, environmental health-related positions (Figure 4). It is possible, though, that last year represented an anomaly with regard to the availability of qualified candidates for entry-level positions in environmental health.



**Figure 2. New Entry-Level Environmental Health Hires in the Past Year (N 45)**

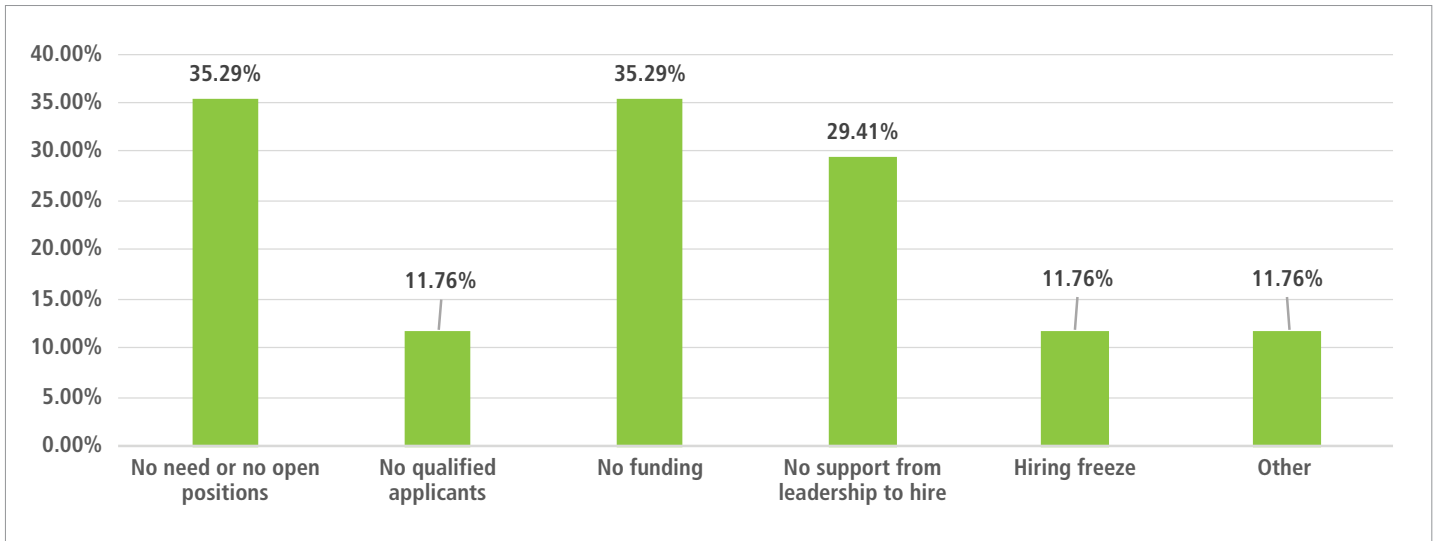


Figure 3. Reasons Given for Not Hiring (N 17)

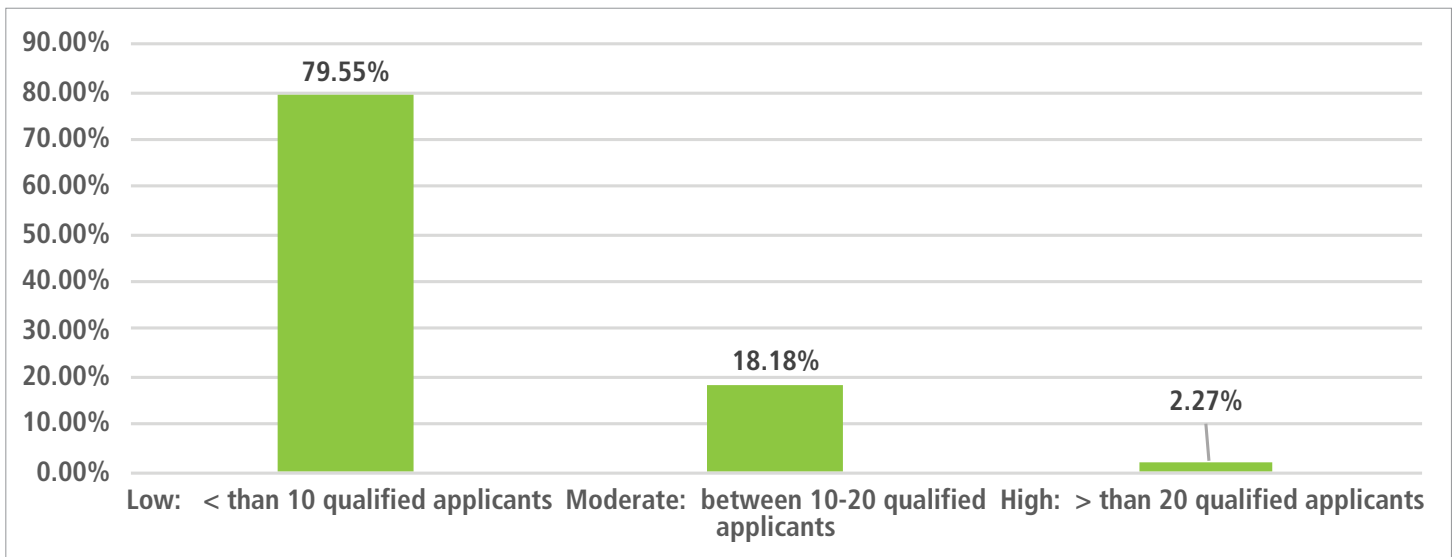


Figure 4. Respondents' Estimate of the Level of Availability of Qualified Applicants (N 44)

## Knowledge, Skills and Competency of Environmental Health Entry-Level Employees

Respondents were asked to rate entry-level employee preparedness in environmental health knowledge and skills areas. These were compiled from a number of sources, including the UNCOVER EH article in the June 2019 issue of the Journal of Environmental Health<sup>1</sup>. The knowledge and skills shown in Figure 5 are areas cited as relevant to entry-level environmental health positions by more than 44% of respondents. More than 50% of these respondents cite somewhat prepared employees in the areas of emergency preparedness and response, disease prevention and indoor air quality, while 50% or more of respondents report employees are not prepared in areas of onsite wastewater, public swimming pools, lead prevention, day care/early child development facilities, body art, campgrounds and recreational vehicles, soils, public drinking water systems, other recreational water (beaches), and healthy homes (Figure 5). These numbers also reflect other questionnaire responses showing a low level of available applicants for entry-level environmental health positions (Figure 4). Additional environmental health program areas respondents cited as necessary skills for entry-level environmental health positions are listed in Table 4. Respondents were also asked to rate levels of proficiency in entry level hires in a variety of EH related competencies. Competencies were chosen by the Committee partially based on consultation with APHA, the NCEH, CDC, and a recently published review of current EH Competencies that are in use around the world in a report by Augustin Martin and Megan Latshaw of Johns Hopkins University<sup>2</sup>.

Competencies shown in Figure 6 are those cited as relevant to entry level EH positions by more than 50% of respondents. Competency assessments show respondents observe “very proficient” competency levels for computer and information technology, problem solving and reporting, documentation and record keeping. Fifty percent or more respondents find employees “proficient” in collaboration, communication, cultural sensitivity, information gathering, project management, and risk assessment (Figure 6). **Areas cited as “not proficient” by at least 40% of respondents included assessment and analysis, community engagement, conflict resolution, cross sector resolution, GIS, organizational behavior, risk communication, systems thinking and toxicology** (Figure 6).

**TABLE 4. ADDITIONAL ENVIRONMENTAL HEALTH PROGRAM AREA SKILLS RESPONDENTS CITED AS NECESSARY FOR ENTRY-LEVEL ENVIRONMENTAL HEALTH POSITIONS**

Climate Change
Customer Service
Database Management/Epidemiology/Statistics
Health/Risk Assessment
Hotel/Tourist Establishment Inspections, Outbreak Investigation
Public Accommodations, Septic Tank Pumping Contractors, Jails/Prisons, Cosmetics Manufacturing
Tourist Establishment Inspections (Hotel/Motel), Migrant Labor Camp Inspections

<sup>2</sup> Martin, Augustin and Megan Latshaw (2020) Environmental Health Competencies, Prepared for the Environmental Health & Equity Collaborative’s Workforce and Education Workgroup.

**Employee Preparedness Level in EH Program Knowledge Areas Rated Necessary for Entry Level Applicants by more than 44% of Respondents**

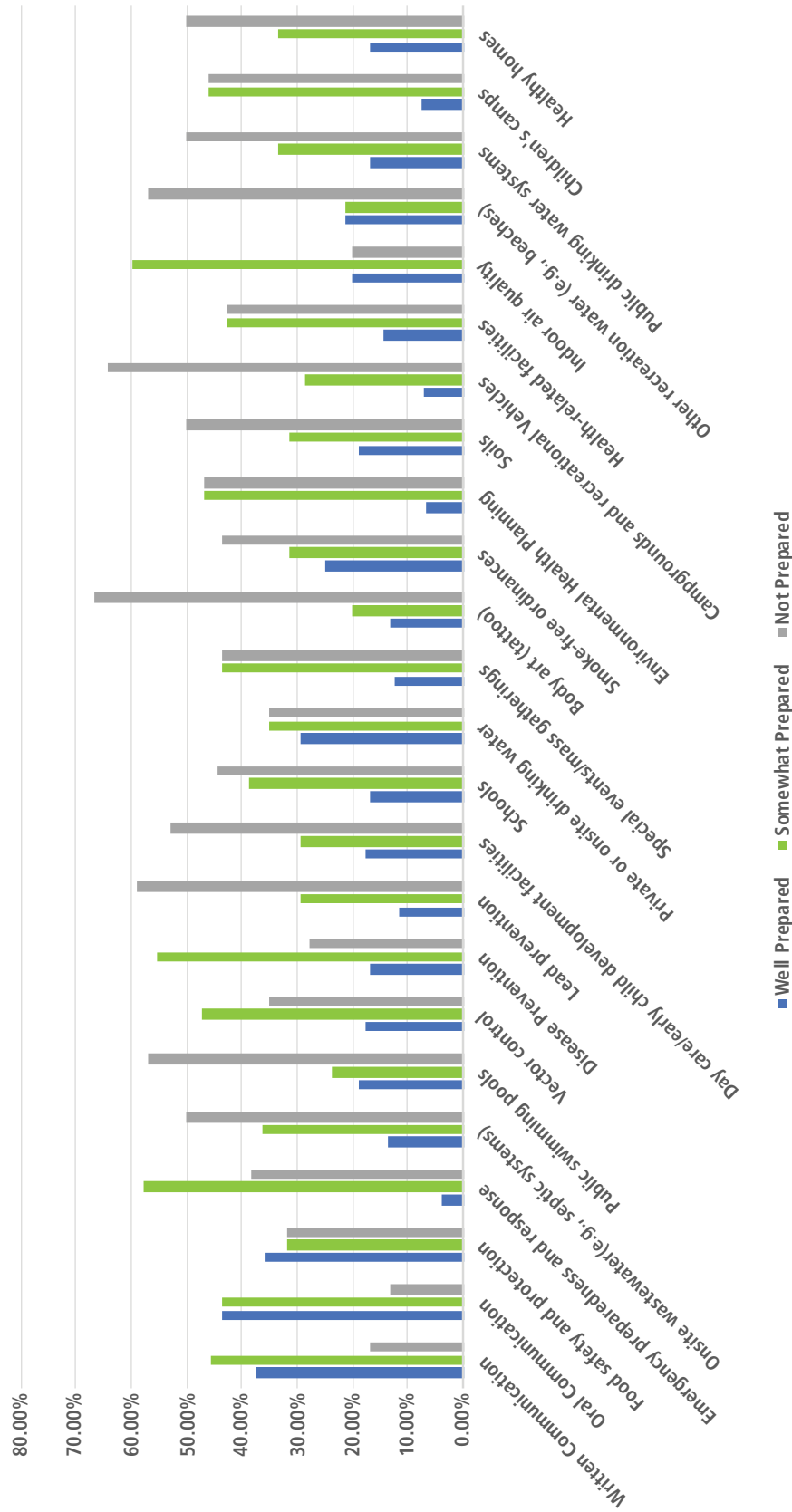


Figure 5. Desired Level of Preparedness for New Environmental Health Hires vs. Assessed Levels



Respondents Rating of Entry Level Employee Competency Levels - Includes Competencies Deemed Applicable to Job by More Than 50% of Respondents (Competencies partially based on APHA, the NCEH, CDC, and EH Competencies Report by Latshaw and Martin)

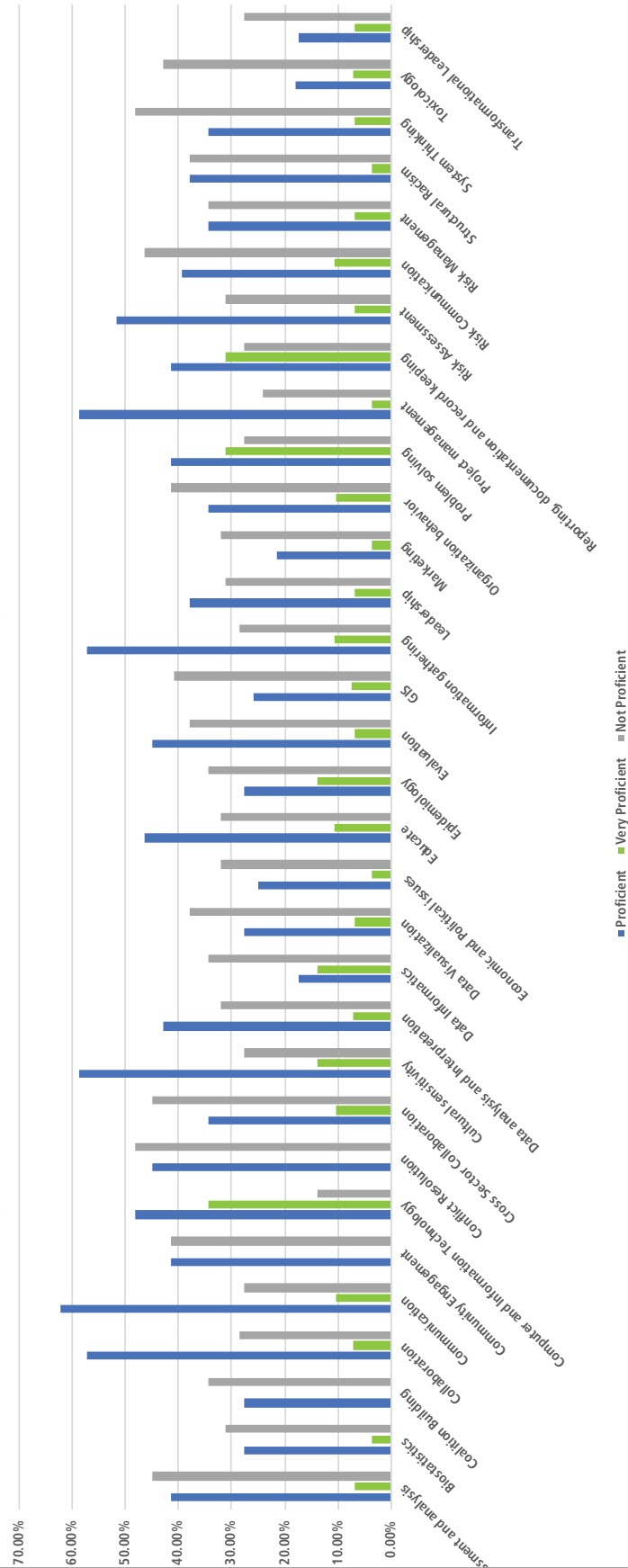


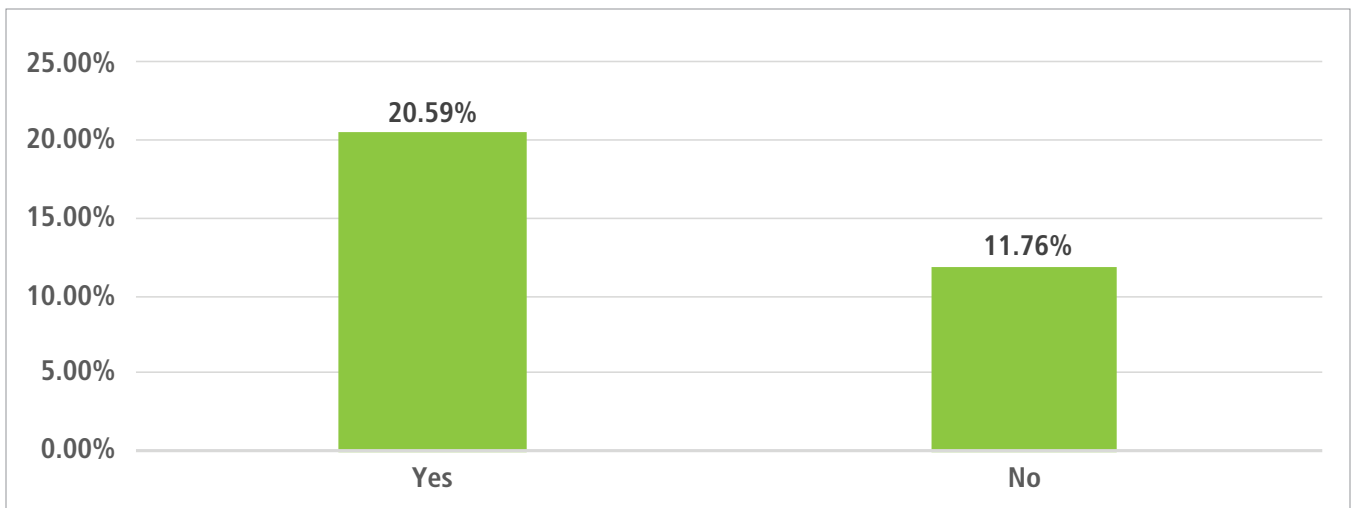
Figure 6. Entry-Level Competencies of New Hires (N=29)

Other comments noted in response to this question include:

- Novice environmental health specialists are well educated but can't communicate easily with restaurant workers who are often oral oral culture learners and may learn better through demonstration.
- Novice environmental health employees have a lack of strategic thinking/planning related skills.

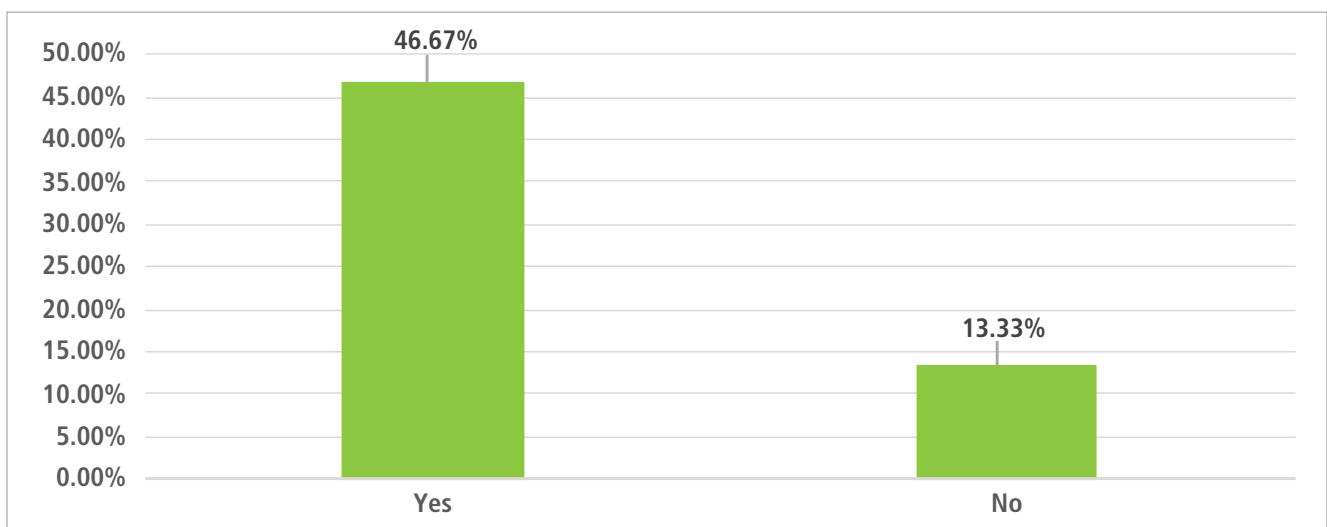
### **Knowledge, Skills and Competency-Based Training for New Environmental Health Hires**

Respondents were asked if their organizations provide training to increase environmental health knowledge and skills among new hires. Figure 7 shows that about 20% of respondents said they provide some type of training.



**Figure 7. Number of Respondents Whose Organization Provides or Encourages Environmental Health Program Area Training to Increase Knowledge and/or Skills of New Environmental Health Hires (N 34)**

Figure 8 shows that a larger percent of organizations provide environmental health competency-based training. Numerous additional types of training choices other than those listed in the questionnaire were also provided by respondents. These are shown in Table 5 below.



**Figure 8. Organizations Providing or Encouraging Any Environmental Health Competency-Based Training for New Hires**

**TABLE 5. OTHER COMPETENCY TRAINING PROVIDED OR ENCOURAGED BY EMPLOYER'S ORGANIZATION**

City Employee Trainings for Risk Management
Climate Change
Communication
Core Competency Training
Diversity Training
Employer Can Provide
Emergency Management
Ethics
FDA National Voluntary Retail Food Regulatory Program Standards Training Courses
Geographic Information Systems
Information Tech
Internal Training
Leadership
Problem Solving
Risk Communication Training
ServSafe Manager Training
State and National Training/Webinars
Communication/Cultural Sensitivity Training/Technical Knowledge
Time Management
Annual Learning about Data Assessment, Communication, Community Engagement, Public Health Science, Program Planning, Leadership, Systems Thinking or Policy Development

## Job Recruitment

All respondents reported advertising job opportunities. Below is a list of recruiting methods and websites utilized by respondents (Table 6).

**TABLE 6. RECRUITMENT STRATEGIES CITED BY RESPONDENTS**

Recruitment Strategies	Total Responses	Recruitment Strategies	Total Responses
Indeed	12	General Job Posting Sites	1
State Hiring Website	11	Glassdoor	1
College Campuses - Various Positions & Locations	5	Governments	1
LinkedIn	5	Handshake	1
County Website	4	<a href="https://careers.sc.gov">https://careers.sc.gov</a>	1
Agency Facebook Page	3	<a href="https://jobs.utah.gov/">https://jobs.utah.gov/</a>	1
Listserv for Environmental Health	3	Internal	1
NEHA Website	3	Job Announcement Strategy	1
Agency Website	2	<a href="http://snhd.org">snhd.org</a> (Local Website)	1
Local Newspaper	2	Monster	1
State Environmental Health Organization Website	2	Mostly Internal Listing First	1
State Public Health Association	2	NV Apps Online State Job Application Portal	1
USA jobs	2	Sent to Local Universities	1
Academic Public Health Entities	1	State Dept of Health Web Site	1
Association of Food and Drug Officials	1	State Health Commissioner Website	1
Career Fairs at Major Universities	1	To Hire Locally - Local Job Posting Locations	1
City Website	1	Twitter	1
Civil Service Website	1	State Environmental Health Association	1
Company Website	1	Word of Mouth	1

## Conclusions

This questionnaire provides an initial look at the availability and environmental health competency level of entry-level environmental health hires. The majority of questionnaire respondents were environmental health practitioners involved in the hiring process in local or state health departments. Respondents work primarily in food safety and as sanitarians, followed by those in environmental health education, environmental issues/monitoring, recreational environmental health, water or wastewater treatment, and emergency preparedness and response.

Questionnaire results show the following:

- Available Qualified Applicants: Respondents report a low number of available qualified applicants for entry-level environmental health positions.

- **Employee Preparedness:** 50% of respondents report entry-level environmental health employees are not prepared in the environmental health practice areas most relevant to respondent's job, including onsite wastewater, public swimming pools, lead prevention, day care/early child development facilities, body art, campgrounds and recreational vehicles, soils, public drinking water systems, other recreational water (beaches) and healthy homes.
- **Employee Competency in Environmental Health Program Areas:** At least 40% of respondents find entry-level environmental health employees not proficient in environmental health practice areas most relevant to respondents, including assessment and analysis, community engagement, conflict resolution, cross-sector resolution, geographic information systems, organizational behavior, risk communication, systems thinking, and toxicology.
- **Employee Competency in Social Areas Concerning Environmental Health Practice:** 40% or more respondents find entry-level hires proficient in collaboration, communication, community engagement, conflict resolution and cultural sensitivity, while just over 35% report proficiency in identifying and understanding structural racism.
- **Training:** More than 45% of employers encourage or provide environmental health competency-based training for new hires. The high number of people not proficient in some areas and the low percent (just over 20% for knowledge and skills training and less than 50% for competency training) of employers who provide training indicate a significant gap that stakeholder organizations can help fill by developing training modules to help meet needs in the workforce.

This workforce questionnaire was distributed in October 2020 in the midst of the COVID 19 crisis. While the committee is grateful for the many responses it received, it is likely the overwhelming demand of pandemic response limited the ability of many in the field to participate. Additionally, the questionnaire was a broad effort to assess the current number and competency level of entry-level environmental health hires, leaving room for further, more in-depth exploration in the future.

Prospective questionnaires might include a request for job classifications and descriptions, as the content of entry-level job position announcements likely varies considerably and may not match those provided in the questionnaire (e.g., what do employers expect of new environmental health hires?). Another future question might ask whether employers prefer new hires to be trained in specific skills and tasks or prefer an employee with a strong foundation in environmental health related sciences and assessment.

Also, the questions regarding job preparedness in programmatic knowledge areas and competency level assessment for environmental health competencies may have caused confusion, as these categories are very closely aligned and there is some overlap. Lastly, a question regarding the educational backgrounds of new environmental health hires (e.g., high school diploma, higher education diploma) and whether the employee attended an accredited degree program would be helpful in painting a more nuanced assessment of the workforce.

As the questionnaire responses show, the environmental health field is incredibly diverse and many environmental health efforts intersect (e.g., one person might be in charge of many different environmental health areas). This situation makes it more challenging to quantify employment needs transferable to the academic arena. As indicated in the environmental health competencies assessment by Martin et al.<sup>2</sup> it may be helpful to work toward more clearly defining core environmental health competencies and knowledge areas to include specific explanations and examples that can be addressed by educational programs and accreditors.

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2 Martin, Augustin and Megan Latshaw (2020) Environmental Health Competencies, Prepared for the Environmental Health & Equity Collaborative's Workforce and Education Workgroup.

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