Public Health Workforce Development Needs: A National Assessment of Executives' Perspectives

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Abstract

Introduction: Workforce development is one of the ten essential public health services. Recent studies have better characterized individual worker perceptions regarding workforce interests and needs, but gaps remain around workforce needs from program managers' perspectives. This study characterized management perspectives regarding subordinate's abilities and training needs and perceived challenges to recruitment and retention.

Methods: In 2017, the Directors Assessment of Workforce Needs Survey was sent to 574 managers at state health agencies across the U.S. Respondents were invited based on the positions they held (i.e., to be included, respondents had to be employed as managers and oversee specific program areas). In 2018, descriptive statistics were calculated, including Fisher's exact for inferential comparisons and Tukey's test for multiple comparisons, as appropriate.

Results: Response rate was 49% after accounting for undeliverable e-mails; 226 respondents met the inclusion criteria. The largest perceived barriers to staff recruitment were wages or salaries (74%) and private sector competition (56%). Similarly, wages or salaries were identified as the main cause of turnover by 70% of respondents, followed by lack of opportunities for advancement (68%), and opportunities outside the agency (67%).

Conclusions: The Directors Assessment of Workforce Needs Survey fills important knowledge gaps and complements previously identified evidence to guide refinement of workforce development efforts. Although competition from the private sector remains challenging, these findings indicate that recruitment and retention must be top priorities in state health agencies nationwide. Prioritizing individual state health agency workforce gaps and committing to provide specific local-level interventions to those priorities is crucial for individual health agencies.

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INTRODUCTION

Multiple studies have recognized challenges facing the governmental public health workforce.[1–3] An aging workforce has led to at least 25% of the public health workforce to be eligible for retirement.[4,5] Given decreases in available public funds and less competitive earnings and working conditions than the private sector,[6–8] recruiting enough qualified candidates to fill vacant public health positions is a growing concern in state health agencies (SHAs) and local health departments.[9–13] This is complicated by the advent of the "gig economy," which began in the private sector but is now common in the public sector as well. [14] Furthermore, demand for public health expertise creates an ongoing need to recruit, train, motivate, and retain the public health workforce.[7,9,15]

Documented decreases in both workforce size and proportion of employees with a formal public health education have led studies to focus on identifying employee needs and knowledge gaps.[1,3,16,17] Training is a major focus of public health in response to assessed needs in the workforce.[6,18–21] Federal governmental agencies offer targeted trainings, including hands-on fellowships, e-learning, and short courses.[22–25] Additionally, the Public Health Training Centers assess workforce training needs and provide training by identifying competency areas, coordinating topics, and decreasing course duplication.[26] Streamlined coordination between regional public health training centers is important to more fully ensure that common goals are established and met.[20,21] To understand employee workforce development needs from the position of SHA division or bureau directors, the Association of State and Territorial Health Officials (ASTHO), in collaboration with the Centers for Disease Control and Prevention (CDC), implemented the Director Assessment of Workforce Needs Survey (DAWNS). The study's purpose is to provide SHA manager perspectives regarding workforce development needs with a focus on employee recruitment, retention, and training needs.

METHODS

Study Population

The 2017 DAWNS was conducted as a mixed-methods exploratory study.[27] This study design typically begins with a qualitative phase, which influences development and fielding of a follow-up quantitative portion. The design is well-suited to capture and catalog process information, (e.g., policies, processes, and barriers), and enables quantification of responses for use in a survey that can be sent to many more respondents. DAWNS used this design, first with a set of key informant interviews with SHA leadership followed by a survey of division or bureau directors at SHAs across the U.S. This report focuses on results of the survey portion of the project. The instrument is available in the Appendix (available online).

The survey targeted managers who lead a program area within a SHA and had oversight or supervision of at least one staff member. The respondent pool was created through targeting members of the ASTHO Affiliate Council (affiliates) and ASTHO Peer Networks (peer network). ASTHO affiliates are independent membership organizations; participating affiliates included the Association of Public Health Laboratories (APHL), Association of Maternal and Child Health Programs (AMCHP), Association of State Public Health

Nutritionists (ASPHN), Council of State and Territorial Epidemiologists, National Association of Chronic Disease Directors (NACDD), and Safe States Alliance (Safe States), who are injury prevention directors. Peer networks are membership groups within ASTHO; participating peer networks included the State Environmental Health Directors Peer Network (SEHD), Directors of Public Health Preparedness Peer Network (DPHP), Public Health Lawyers Peer Network, Legislative Liaisons Peer Network, Informatics Directors Peer Network (IDPN), and the Tobacco Control Peer Network (TCN).

Measures

The study was guided by the 2016 Workforce Gaps study, the 2014 and 2017 Public Health Workforce Interests and Needs Survey, and the DAWNS interview phase.[6,18] The survey was developed during 2017 and captured information regarding recruitment barriers and perceived causes of turnover among SHA professional staff. Additionally, DAWNS explored the perceived ability of public health staff (non-supervisory and non-clerical) regarding seven strategic skills incorporated in the 2017 Public Health Workforce Interests and Needs Survey (PH WINS) instrument, training requirements for new supervisors, and readiness of newly hired staff. All participating affiliate or peer network members identified were sent a web-based invitation to participate in DAWNS. Recruitment proceeded in concert with the affiliates and peer networks through direct ASTHO outreach. Respondents were excluded from analysis if they did not have supervision or oversight of staff. Data were analyzed in aggregate and by affiliate or peer network.

Statistical Analysis

In 2018, descriptive statistics were generated and inferential comparisons were made using Fisher's exact and Tukey's test for multiple comparisons, as appropriate. In the barriers, turnover, and training needs domains, 4-point scales were dichotomized for parts of the analyses. The survey was delivered during early summer 2017 using the Qualtrics® web platform, version 2017 and analyzed in Stata, version 15.0. Visualizations were created in Tableau, version 10.3. CDC reviewed this study for human protection and determined it to be not human subjects research.

RESULTS

Overall, 574 people identified across 12 affiliates or peer network groups were invited to participate; 23 e-mails were returned undeliverable. In total, 272/551 (49%) individuals responded to the survey. After excluding 46 respondents not meeting the inclusion criteria, 226 respondents representing all 50 states, eight territories, and the District of Columbia were included in the analyses. Among respondents, 61% (n=134) were female; 21% (n=46) were people of color; and 61% (n=131) were aged 48 years (Table 1). On average, respondents had served in their current position for 7 years (median, 5 years); in their current agency for 14 years (median, 13 years); in public health practice for 19 years (median, 19 years); and in management for 13 years (median, 13 years).

Among barriers to recruitment, low wages and salaries, sufficient funding to cover positions, and competition from the private sector were identified as the most common barriers, with

the majority of respondents indicating these were large or very large barriers (74% [n=67], 60% [n=134], and 56% [n=127] respectively; Figure 1). Wages and salaries were the most frequently identified barrier for members of SEHD (87% of respondents, n=16); IDPN (83%, n=10); NACDD (81%, n=21); DPHP (81%, n=25); ASPHN (78%, n=7); AMCHP (74%, n=16); TCN (70%, n=16); and Public Health Lawyers Peer Network (67%, n=2). APHL members identified sufficient funding to cover positions as the largest barrier (89%, n=24), and Legislative Liaisons Peer Network and Safe States respondents identified "time to hire is too long" as the top barrier (67% for each, n=2 and n=14). Among nine of 12 groups, the majority of respondents identified competition from the private sector as a large or very large barrier.

Among perceived causes of turnover among professional public health staff, 70% (n=157) of respondents identified wages and salaries as a large or very large driver (Figure 2). Lack of opportunities for advancement (68%, n=152) and other opportunities outside the agency (67%, n=150) were the other substantial causes for employment turnover. Leadership changes (14%, n=32); supervisor satisfaction (14%, n=31); and lack of training (8%, n=17) were the least-often identified causes of turnover. Wages and salaries were identified as the main cause of turnover by 92% of IDPN respondents (n=11); 88% of ASPHN respondents (n=7); 85% of APHL respondents (n=22); 78% of SEHD respondents (n=18); 67% of AMCHP respondents (n=14); and 58% of TCN respondents (n=14). Opportunities outside the agency were identified as the largest cause of turnover by 100% of Public Health Lawyer respondents (n=3), 84% of DPHP (n=26), 83% of Legislative Liaisons Peer Network respondents (n=5), 74% of Council of State and Territorial Epidemiologists (n=17), 69% of NACDD (n=18), and 57% of Safe States respondents (n=12).

Respondents indicated that their SHAs were adequately addressing some causes of turnover. Overall, 36% of respondents (n=81) said they felt "lack of acknowledgement or recognition" was being adequately addressed by their agency. This was true for 33% of respondents for lack of training (n=73); job satisfaction was 30% (n=68); supervisor satisfaction was 23% (n=52); lack of flexibility was 20% (n=45); other opportunities inside the agency was 17% (n=39); work overload or burnout was 16% (n=35); stress was 16% (n=36); lack of opportunities for advancement was 14% (n=31); leadership changeover was 13% (n=29); retirement was 12% (n=26); pay was 9% (n=20); weakening of benefits was 3% (n=7); and opportunities outside the agency was 3% (n=6).

The vast majority of respondents indicated that each of the listed strategic skills was somewhat or very important in their staff's day-to-day work (Appendix Table 1, available online). Specifically, this included the following: collect valid and reliable data for use in decision making, 99% (n=223) reported somewhat or very important to staff's day-to-day work; communicate in a way that different audiences can understand, 97% (n=219); deliver programs and custom service in a culturally competent manner, 96% (n=218); identify evidence-based approaches to addressing public health concerns, 96% (n=217); support application of quality improvement strategies for agency programs and services, 95% (n=214); assess the environment concerns that can influence the work, 89% (n=201); and use community assets and resources to improve health in a community, 85% (n=193).

Despite the perceived high importance of the skills in their staff's day-to-day work, ability did not appear concomitant with perceived skill level. Significant variation existed in the percentage of staff reported as being proficient or expert in a given skill (Table 2). Among the seven strategic skills, respondents (n=221–225) indicated the level of proficiency or expertise they observed in their staff was 66%, on average, of their staff in the area of communications; 68% in collecting valid and reliable data; 67% in identifying evidence-based approaches; 71% in delivering programs in a culturally competent manner; 57% for assessing drivers that might influence one's work; 57% for using community assets; and 63% for supporting quality improvement.

When asked about the level of training required for new supervisors, overall, 70% of respondents (n=150) indicated new supervisors in their SHA were required to take supervisor-related training; when supervisor-related training was required, the average number of hours required was 21 (median, 16 hours; Appendix Table 2, available online). Significant variation by group was reported, with Legislative Liaison Peer Network having the fewest number of respondents indicating supervisor-related training was required (50%, n=3), compared with ASPHN members who had 90% (n=8) report their new supervisors were required to take training. On average, the number of required training hours for new supervisors ranged from 0 to 100 (mean=21, median=16, IQR, 8–30).

Regarding readiness of newly hired public health staff, all respondents indicated that newly hired non-supervisory or non-clerical staff required time to become independent in their respective jobs. On average, respondents reported it took 10 months to train new staff with a bachelor's degree, compared with 8.6 months for those with a non–public health master's, and 7.5 months for those with a public health master's degree (Appendix Table 3, available online). Differences were statistically significant at p<0.05 for people with a bachelor's degree compared with either master's degree; the difference between master's degrees was statistically significant (p=0.0061). When asked about how prepared newly hired staff were when they joined their agency, in association with the master's degree type held, 43% of respondents (n=96) indicated that new staff with a public health master's degree were equally prepared as new staff who had other types of master's degrees; 54% (n=120) said new staff with a public health master's degree were better prepared, and 2% (n=5) said new staff with a public health master's degree were less well-prepared coming onboard a new position in the agency (Appendix Figure 1, available online).

DISCUSSION

DAWNS ascertains workforce needs from the perspective of programmatic leaders and managers in SHA and is the first survey targeting multiple layers of SHA leadership on these subjects. Although previous efforts, such as PH WINS and the Public Health Workforce Gaps Study, focused on public health workers and agency leadership, respectively,[6,18] understanding workforce development needs from a managerial perspective is necessary to better understand the differences between the motivations of managers and employees. DAWNS supports and complements previous surveys and efforts offering additional evidence for decision making regarding the public health workforce.

Addressing barriers to recruitment and causes of turnover is crucial in public health. DAWNS identified low wages and salaries and competition from the private sector as significant SHA barriers to recruitment and retention. This was consistent across peer networks and affiliates. PH WINS data indicate public health salaries vary substantially across position type, supervisory status, and geography.[26] Setting compensation at levels necessary to recruit and retain employees in the governmental public health sector may not be feasible because of budgetary constraints, potential public concern, and policy debate. However, more fully understanding how workers with similar levels of education, experience, years of service, and other compensation-related characteristics are paid in the private sector can help identify strategies to address compensation levels and nonfinancial incentives for public health workers. Several barriers to recruitment appear to be nonfinancial in nature, including a perceived too-long of a time to hire, as well as weak candidate pools for jobs. Although it may be that certain pools are weak due to lack of competitive salary offerings, it may be the case that more must be done to strengthen the pipeline broadly.[12,28] Moreover, a better understanding of barriers to recruitment and turnover at the local level (especially urban versus rural) would benefit the field.

Although salaries matter to governmental public health employees,[26] as evidenced by these and PH WINS findings, they are not the sole determinant of job satisfaction or the only cause of turnover in SHA.[29] Additional efforts are needed at the SHA level to improve job satisfaction and to successfully recruit, motivate, and retain high-quality staff. For example, public health managers striving to improve job satisfaction and retention levels might focus on improving key metrics, like employee's perceptions related to supervisor satisfaction, organizational support, and employee engagement.[30] Additionally, creating opportunities for employees' growth and advancement in health departments appears critical, especially for disciplines with corollaries outside of governmental public health, like in the healthcare sector or else-where in the public sector (e.g., lawyers, preparedness coordinators, legislative liaisons, epidemiologists, chronic disease, and injury specialists). Efforts could include opportunities for staff to share their knowledge on the job, offering coaching and constructive feedback from supervisors, creating career development plans, allowing employees the ability for decision making by leading projects, as well as offering flexible work schedules could help employees recognize that they are valued members and decrease turnover.

This study also identified a substantial disconnect between the perceived importance of critical broader skills necessary to staff's day-to-day work and the ability and proficiency of staff to perform those skills. Although continued excellence in core programmatic and scientific disciplines remains a priority, the governmental public health workforce increasingly requires strategic and broader skills and knowledge, which allows them to meet evolving public health needs. Public health leaders can prioritize strategies to complement specialized skills with strategic skills.[31] To ensure ability matches the level of importance at public health agencies, actions to build and strengthen strategic skills can include the use of job performance measures and incentives that take these skills into account, the development of strategic skills training for supervisors and non-supervisors, and the integration of strategic skills into day-to-day work.[31]

DAWNS also explored the perceived work readiness among newly hired non-supervisory staff in SHA. Although the pathway from college or graduate schools to successful job performance has not been clearly defined, measured, or evaluated in public health, the current findings indicate that staff holding a bachelor's degree took up to 25% longer to function independently than staff with a master's degree in public health or other fields. Although holding a graduate degree might play a major role in the recruiting of new employees in health departments, only 17% of the state and local health department workforce has any type of formal public health education, and even among public health science staff, only 30% have a formal public health degree.[16] Being deliberate about building internal capabilities, investing in expertise and skill building will strengthen the workforce. Funded internship and fellowship programs are key to these efforts. Furthermore, understanding the level to which the new hires are perceived as possessing attitudes and attributes that enable them to be prepared for success in the workforce will aid in offering targeted training to decrease the lapse between hiring and independent function and to identify the areas in which the workforce requires additional training.[6]

Limitations

Some limitations to this study exist. Respondents were asked whether their SHAs were adequately addressing causes of turnover; however, this assessment was about perceptions and did not allow for the exploration of approaches or description of activities that SHAs are taking to mitigate barriers to retention. Obtaining that information would have been advantageous to SHAs aiming to address similar challenges. Additionally, the survey did not offer a measure for what adequately addressing causes of turnover represented, making it a subjective interpretation of the question; however, these findings indicate that some health agencies are proactively identifying and addressing these concerns. Finally, although the study achieved a high response rate, not all invited individuals responded to the survey; therefore, the findings might be different from the views of those not included.

CONCLUSIONS

Reliable workforce data can guide the design or refinement of governmental public health initiatives. DAWNS fills crucial knowledge gaps to guide the ongoing refinement of workforce development efforts occurring at all levels of the public health enterprise. DAWNS findings are complementary to those identified by the Public Health Workforce Gaps Study, and the 2014 PH WINS[10,11,23]; the new knowledge acquired by these studies should be used to offer an in-depth view of workforce needs and gaps, from managerial and leaders to workers' perspectives, and allow decision makers to assess future policy and program effectiveness, measure progress, and engage in constructive discussions on sensitive topics.

Addressing public health workforce priorities identified through surveys, including DAWNS, should be conducted through synchronization of efforts among stakeholders at both the SHA and national level. National and professional organizations are coordinating about how to best address shared priorities toward a strong, well-trained, and sustainable public health workforce. Prioritizing SHA workforce gaps and committing to provide

specific interventions to those priorities is crucial for individual health agencies. Deeper focus on job satisfaction, exploring options for making salaries more competitive in positions of shortage, and providing more opportunities for employee development at the SHA level are logical steps within the sphere of control of most leaders. For example, based on evidence derived from existing surveys, prioritizing specific training needs of their workforce and managers, facilitating access to targeted trainings, and developing best practices and models at the individual agency will result in a stronger workforce. Furthermore, sharing those best practices with other SHA facing similar challenges can help build capabilities across public health.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

ACKNOWLEDGMENTS

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Barriers to recruitment
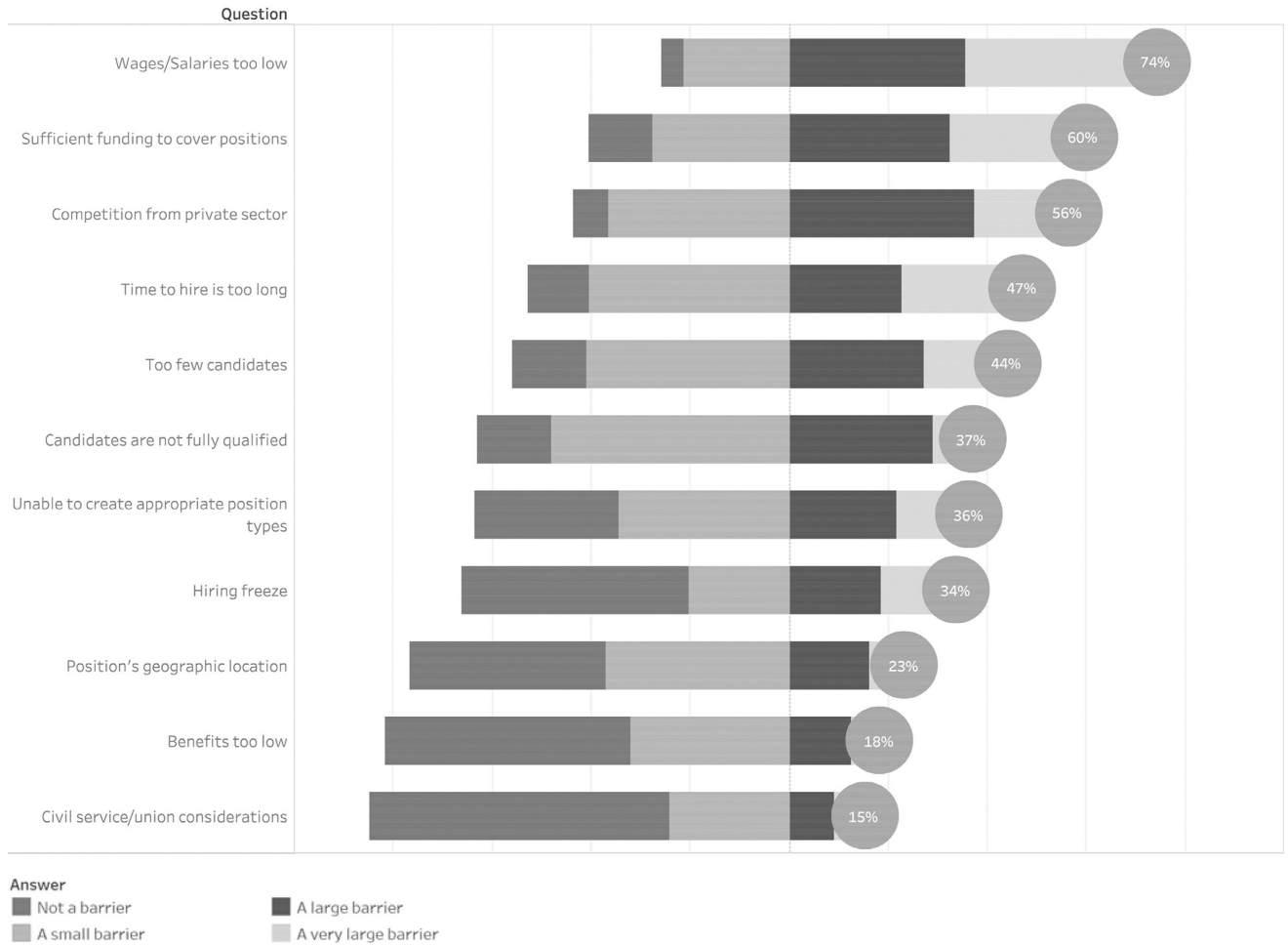

Figure 1.
Barriers to recruitment—Directors Assessment of Workforce Needs Survey.
Note: Values shown in a circle represent the percentage of respondents indicating the item is a large barrier or very large barrier to recruitment.

Figure 2.
Perceived causes of turnover from Directors Assessment of Workforce Needs Survey respondents.
Note: Values shown in a circle represent the percentage of respondents indicating the item is a large barrier or very large barrier to recruitment.
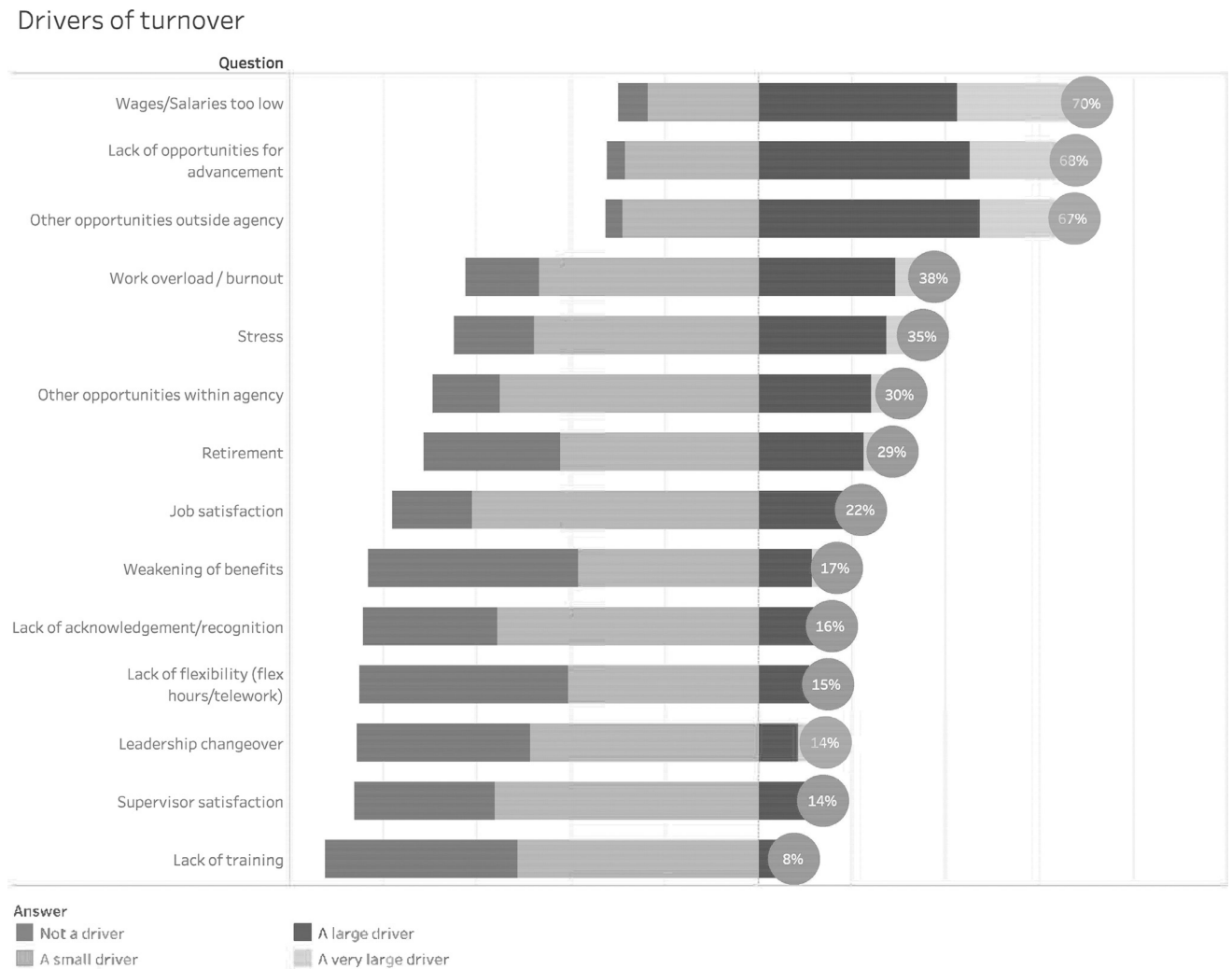
Table 1.

Demographics of Directors Assessment of Workforce Needs Survey Respondents

Demographics	*n* (%)
Gender	
Male	87 (39)
Female	134 (61)
Educational attainment (highest degree)	
Bachelors	40 (18)
Doctoral	149 (66)
Masters	34 (15)
None	3 (1)
Race or ethnicity	
American Indian or Alaskan Native	2 (1)
Asian	11 (5)
Black/African American	15 (7)
Hispanic/Latino	7 (3)
Native Hawaiian or other Pacific Islander	6 (3)
Two or more races	5 (2)
White	174 (79)
Age, years	
<30	1 (1)
30–44	60 (28)
45–59	112 (52)
60	42 (20)
Years in current position	
<5	105 (47)
5–9	63 (28)
10–14	31 (14)
15	25 (11)
Years in current state health agency	
<5	42 (19)

Demographics	n (%)
5–9	41 (18)
10–14	38 (17)
15	102 (46)
Years in public health practice	
<5	13 (6)
5–9	24 (11)
10–14	36 (16)
15	150 (67)
Years in public health management	
<5	36 (16)
5–9	46 (21)
10–14	43 (19)
15	97 (44)
Group	
Association of Maternal and Child Health Programs (AMCHP)	21 (9)
Association of Public Health Laboratories (APHL)	27 (12)
Association of State Public Health Nutritionists (ASPHN)	9 (4)
Council of State and Territorial Epidemiologists (CSTE)	23 (10)
Preparedness Peer Network	31 (14)
Informatics Peer Network	12 (5)
Public Health Lawyers Peer Network	3 (1)
Legislative Liaisons Peer Network	6 (3)

Demographics	n (%)
National Association of Chronic Disease Directors (NACDD)	26 (12)
Environmental Health Directors Peer Network	23 (10)
Safe States	21 (9)
Tobacco Control Peer Network	24 (11)

Note: Total number of respondents was 226. Each demographic area received between 219 and 226 responses; those who did not respond are not included in percentage totals.

Table 2.

Ability of Skills in Day-to-Day Work, by Affiliate or Peer Network (Proficient or Expert)

Variable	AMCHP	APHL	ASPHN	CSTE	DPHP	Informatics	LAW	Legislative Liaisons	NACDD	SEHD	Safe States	TCN	Average
Communicate In a way that different audiences can understand, %	66	43	75	73	71	67	78	65	63	67	72	73	66
Collect valid and reliable data for use In decision making, %	63	69	64	80	64	81	87	63	66	67	71	65	69
Identify evidence-based approaches for addressing public health Issues, %	64	47	70	72	62	71	83	62	80	56	77	79	67
Deliver programs and customer service In a culturally competent manner, %	71	58	78	78	75	76	81	60	67	66	76	75	71
Assess the drivers In your environment, %	59	32	63	50	66	77	27	66	58	52	58	72	57
Use community assets and resources to Improve health In a community, %	66	24	70	57	70	67	59	61	69	51	65	74	60
Support application of quality Improvement strategies for agency Droerams and services, %	60	68	59	59	71	74	81	76	62	56	53	59	63

AMCHP, Association of Maternal and Child Health Programs; APHL, Association of Public Health Laboratories; ASPHN, Association of State Public Health Nutritionists; CSTE, Council of State and Territorial Epidemiologists; DPHP, Directors of Public Health Preparedness Peer Network; NACDD, National Association of Chronic Disease Directors; SEHD, State Environmental Health Directors Peer Network; TCN, Tobacco Control Peer Network. The Appendix (available online) provides additional information on these Items and the survey Instrument.