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The First Nationally Representative Benchmark of the Local Governmental Public Health Workforce: Findings From the 2017 Public Health Workforce Interests and Needs Survey

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ABSTRACT

Context: A changing public health landscape requires local governmental health departments (LHDs) to have a workforce prepared to meet complex challenges. While previous assessments looked at organizational data on the LHD workforce, the Public Health Workforce Interests and Needs Survey (PH WINS) is the first nationally representative survey to examine individual perceptions of training needs, workplace environment, job satisfaction, and awareness of emerging concepts in public health.

Objectives: Characterize key interests and needs of the local governmental public health workforce.

Design: Survey invitations were sent to individual LHD employees on the basis of a stratified sampling approach. The LHDs had to employ a minimum of 25 staff and serve a population of 25 000 or greater to be eligible for inclusion.

Setting: 399 LHDs across the United States.

Participants: A total of 26 533 LHD employees completed the survey (59% response rate).

Results: The majority of local public health workers are female (81%, 95% confidence interval [CI]: 78%-84%) and white non-Hispanic (68%, 95% CI: 64%-72%). Of the nearly quarter of workers who declared an intent to leave within the next year excluding retirement (22%, 95% CI: 19%-25%), the most common reasons included pay (46%, 95% CI: 42%-50%), lack of opportunities for advancement (40%, 95% CI: 38%-50%), and workplace environment (30%, 95% CI: 27%-32%). Across jurisdiction size and supervisory level, skills gaps were noted in budget and financial management, systems and strategic thinking, developing a vision for a healthy community, and change management.

Conclusions: As the first nationally representative sample of the local governmental public health workforce, these data create a national benchmark against which LHDs can measure their workforce. Given the similarities found across LHDs serving different jurisdiction sizes, a unified approach to workforce development should be employed across all LHDs. The LHD leadership should address retention, reward creativity and innovation, improve communication between leadership and employees, and provide opportunities for advancement.

KEY WORDS: job satisfaction, local health departments, public health, public health systems, public health workforce, Public Health Workforce Interests and Needs Survey (PH WINS), workforce development

The public health workforce is recognized as "the most essential element in our collective efforts"[1(p438)] to bolster and strengthen the public's health. A robust, well-prepared, and diverse public health workforce is critical to the prevention, protection, and promotion of the nation's health. The public health workforce began as an extension of doctors, nurses, and sanitarians. As leading causes of mortality in the United States made the transition from infectious disease to chronic disease, the complexity of the national public health landscape increased. So, too, did the workforce—adding epidemiologists, community health organizers and workers, nonclinical health educators, and more.

Economic and political drivers shifted resource availability, requiring new and innovative approaches to deliver essential public health services.[2] As new players continue to emerge, the health care system's increasing focus on "population health" has required governmental public health departments to reexamine their roles in the context of the broader health system. This necessitates a reexamination of the workforce.

In response to these changing dynamics, local governmental public health departments (LHDs) have been encouraged to adopt the role of the community chief health strategist, which "underscores the need for new and sustained leadership at the community level to bring together community stakeholders to prioritize the needs of the community and to leverage resources to build integrated systems to achieve health equity."[3(p1)] Successful support of LHDs in this role requires an understanding of LHD staff's awareness of the 21st century public health system. With a new focus on the roles of nontraditional partnership development, strong clinical and public health linkages, a future-oriented focus on community needs that relies on real-time data, and a push to shift public health strategies more upstream to address the root causes of health inequity, new skill sets are required of the workforce to the challenges of the Public Health 3.0 landscape.[4] While much of the existing research has focused on the federal and state public health workforce,[5-13] limited research exists that describes the characteristics of the LHD workforce, the workplace environments that facilitate an effective local public health system, and the perceptions, attitudes, and skills of individual LHD employees. Few studies describe the overall size, occupational makeup, changes in the LHD workforce, and significant trends that are currently having an impact on the local public health workforce, such as retention and recruitment (eg, retirement, salary).[5,6,14-18] While the National Association of County & City Health Officials' (NACCHO) Profile of Local Health Departments (the Profile Study) and Forces of Change study do provide organizational level information, these studies do not capture the individual perspectives of those who comprise the nation's LHD workforce.

In 2014, the de Beaumont Foundation, in partnership with the Association of State and Territorial Health Officials (ASTHO), fielded the inaugural Public Health Workforce Interests and Needs Survey (PH WINS), the largest survey of the governmental public health department workforce. The aims of PH WINS included information on state health agency (SHA) workforce initiatives, providing a baseline for workforce metrics, and providing insight on their workforce.[13,19] With the initial success of that survey, NACCHO joined this existing partnership to administer the survey to a sample of LHDs to provide the first-ever nationally representative sample of the LHD workforce.

This article explores the LHD sample of PH WINS 2017, with the research aims of ascertaining perceptions of the organizational climate, describing job satisfaction, and identifying priority training and development needs.

Methods

PH WINS is the first nationally representative survey of governmental public health workers in the United States. PH WINS instrument focuses on 4 key domains: training needs, emerging concepts in public health, workplace environment, and demographic characteristics. PH WINS was fielded to more than 100 000 state and local public health staff in the fall of 2017 and had a 48% response rate; the full methodology of PH WINS 2017, including information on the sampling frame and survey development, is described elsewhere.[20] This article examines a subset of the overall PH WINS respondent pool: staff from 399 LHDs.

The nationally representative LHD frame was derived from a complex sample. First, respondents were contributed with certainty from participating LHDs that were members of the Big Cities Health Coalition.[21] In addition, respondents were contributed with certainty from health departments that were part of centralized/mixed/shared SHAs. Finally, respondents were included from LHDs that were randomly sampled by size of population served (25 000-250 000 and >250 000) and US Department of Health & Human Services Region.[22] The LHDs had to employ a minimum of 25 staff and serve 25 000 people or more in their jurisdictions to be eligible for inclusion. Across the nearly 3000 LHDs in the United States, a substantial percentage employ fewer than 25 staff or serve fewer than 25 000 people (64%). However, only about 19 000 of 140 000 staff (14%) work in these jurisdictions.[20] It was determined that it would be impractical, in the first attempt to construct a nationally representative sample, to get an adequate number of staff to respond from these smaller LHDs without imposing an unduly burdensome design effect on the study overall—limiting our ability to construct and analyze weighted data sets. As such, PH WINS is representative of midsized and larger LHDs but not smaller ones.

NACCHO contacted leaders of LHDs who had been selected by stratified random sample and invited the department to participate. The LHDs provided staff e-mail addresses to the ASTHO who distributed the survey invitation to every employee in each participating LHD. Potential respondents who

were part of a state health agency were contacted as part of that data collection process and later parsed, as appropriate, into the LHD frame. A total of 26 533 local employees completed the survey (response rate 59% overall). The data were weighted to account for nonresponse and complex sampling design using balanced repeated replication weights. Patterns of missingness are examined and described at length in a more detailed methodology report in this supplement.[20] Stata 15.1 (StataCorp LLC, College Station, Texas) was used to calculate descriptive statistics and cross-tabulations for this report.

Results

Demographics

Nearly 7 out of 10 employees in the nation's LHDs are white, non-Hispanic (Table 1). Staff diversity is greater in health departments serving more than 250 000 people. The proportion of black or African American employees in LHDs serving more than 250 000 people is more than double the proportion of black or African American employees in LHDs serving between 25 000 and 250 000 people.

Regardless of jurisdictional size, only about 12% of LHD employees are 30 years of age or younger, and more than 40% of the workforce is 51 years of age or older. While the majority of the workforce is older than 50 years, more than half of the workforce have been in their current positions for 5 years or less, and 41% are within 5 years of joining their current health department. A greater proportion of the workforce in LHDs serving more than 250 000 people had master's degrees, but the proportion of staff with any public health degree was similar between the different-sized health departments.

Leaving

More than one-fifth of respondents (95% confidence interval [CI]: 19%-25%) intend to leave their organizations in the next year for reasons other than retirement (Table 2). Approximately 22% (95% CI: 21%-23%) reported planning to retire within the next 5 years. Overall, 39% of the LHD workforce are considering leaving in the next year or planning to retire within 5 years. Nearly 60% (95% CI: 55%-63%) of the workforce 51 years of age or older plan to either leave in the next year or retire, which is expected within this age group. However, 30% (95% CI: 25%-36%) of the workforce 30 years of age or younger and nearly a quarter of the workforce aged 31 to 50 years (95% CI: 20%-28%) plan to leave in the next year. Given the relatively low proportion of

the workforce 30 years of age or younger, this group is of particular concern.

Among staff who are considering leaving in the next year for reasons other than retirement, 51% (95% CI: 48%-54%) plan to leave for another job. Of those respondents, this includes 20% of respondents (95% CI: 17%-24%) leaving for another job in governmental public health, 12% (95% CI: 10%-13%) leaving for another governmental job not in public health, 8% (95% CI: 6%-9%) leaving for a nongovernmental public health job, and 11% (95% CI: 9%-13%) leaving for a nongovernmental nonpublic health job. The remaining staff that plan to leave in the next year (49%, 95% CI: 46%-52%) identified a reason not listed on the survey.

Staff who are considering leaving in the next year cited pay (46%, 95% CI: 42%-50%), lack of opportunities for advancement (40%, 95% CI: 38%-50%), and workplace environment (30%, 95% CI: 27%-32%) as the most common reasons for leaving (Figure). Across all groups, pay satisfaction was cited as the top reason to consider leaving, followed by lack of opportunities for advancement and workplace environment. While the rank order was consistent, a greater proportion of nonsupervisors identified pay satisfaction and lack of opportunities for advancement.

Employee perceptions of their workplace environment

Employees were asked about their perception of their workplace environment from an individual level, an organizational level, and the role of their supervisor in fostering positive workplace practices. Generally, employee perceptions were not appreciably or consistently different between LHDs serving between 25 000 and 250 000 people and those serving more than 250 000 people (Table 3). Overall, the employees had encouraging perceptions of the work they carry out on a day-to-day basis, and how it relates to agency goals. However, the employees did not feel as positive about activities related to professional growth. Organizational challenges were also identified. Less than half of the workforce agreed that creativity and innovation are rewarded. This was the only statement to which fewer than half of all respondents agreed. More than half of all respondents agreed that communication is good between senior leadership and employees.

Identifying and meeting training needs of staff are another area for growth. A greater proportion of employees from LHDs serving 25 000 to 250 000 people (65%, 95% CI: 61%-69%) reported that their training needs were assessed, compared with employees in LHDs serving greater than 250 000 people (56%,

TABLE 1

Demographic and Workforce Characteristics of Local Health Department Staff, by Size of Population Served, 2017

Demographic/Workforce Characteristic	25 000-250 000 People Served %ᵃ (95% CI)	>250 000 People Served %ᵃ (95% CI)	All LHDs %ᵃ (95% CI)
Gender			
Male	14% (11%-17%)	21% (17%-25%)	19% (15%-22%)
Female	86% (84%-88%)	78% (74%-82%)	81% (78%-84%)
Nonbinary	1% (0%-1%)	1% (0%-1%)	1% (0%-1%)
Race/ethnicity			
American Indian/Alaska Native	2% (1%-3%)	2% (1%-2%)	2% (1%-2%)
Asian	1% (1%-3%)	8% (5%-11%)	6% (3%-8%)
Black or African American	11% (7%-14%)	23% (20%-25%)	19% (16%-21%)
Hispanic or Latino	9% (6%-12%)	18% (13%-22%)	15% (12%-18%)
Native Hawaiian/Pacific Islander	0% (0%-1%)	1% (1%-1%)	1% (0%-1%)
White	83% (79%-87%)	61% (56%-65%)	68% (64%-72%)
Two or more races	5% (4%-7%)	9% (8%-11%)	8% (7%-9%)
Age, years			
Up to age 25	4% (3%-5%)	3% (2%-3%)	3% (2%-3%)
26-35	17% (15%-18%)	19% (17%-22%)	20% (17%-22%)
36-45	21% (20%-23%)	23% (22%-25%)	23% (22%-25%)
46-55	31% (30%-32%)	28% (26%-29%)	27% (22%-25%)
56-65	25% (22%-26%)	23% (17%-27%)	22% (17%-27%)
≥65	3% (2%-4%)	4% (3%-7%)	5% (3%-7%)
Job classification			
Administrative	37% (35%-39%)	36% (33%-39%)	36% (34%-38%)
Clinical and Laboratory	29% (27%-32%)	26% (24%-28%)	27% (25%-29%)
Public health sciences	27% (25%-29%)	31% (26%-37%)	30% (26%-34%)
Social services and all other	7% (6%-8%)	7% (5%-8%)	7% (6%-9%)
Full-time position			
Yes	90% (87%-94%)	91% (90%-93%)	91% (89%-93%)
No	10% (6%-13%)	9% (7%-10%)	9% (7%-11%)
Program area			
Chronic disease and injury	5% (4%-6%)	4% (3%-4%)	4% (3%-5%)
Communicable disease	4% (2%-5%)	8% (6%-9%)	7% (5%-8%)
Environmental health	11% (9%-12%)	14% (8%-19%)	13% (9%-16%)
Maternal/child health	13% (12%-14%)	11% (8%-19%)	12% (10%-13%)
Other health care	9% (7%-11%)	7% (5%-9%)	8% (6%-9%)
All Hazards	2% (1%-2%)	1% (1%-2%)	1% (1%-2%)
Assessment	4% (2%-5%)	7% (5%-9%)	6% (5%-8%)
Communications	5% (4%-6%)	3% (3%-4%)	4% (3%-5%)
Organizational competencies	13% (12%-14%)	12% (9%-14%)	12% (11%-14%)
Other	34% (32%-37%)	33% (31%-35%)	34% (32%-35%)
Supervisory status			
Nonsupervisor	74% (73%-76%)	73% (70%-76%)	73% (71%-75%)
Supervisor	15% (14%-16%)	17% (15%-19%)	16% (15%-18%)
Manager	8% (1%-2%)	8% (1%-2%)	8% (7%-9%)
Executive	3% (2%-3%)	2% (2%-3%)	2% (2%-3%)

(*continues*)

TABLE 1			
Demographic and Workforce Characteristics of Local Health Department Staff, by Size of Population Served, 2017 (Continued)			
Demographic/Workforce Characteristic	**25 000-250 000 People Served %ᵃ (95% CI)**	**>250 000 People Served %ᵃ (95% CI)**	**All LHDs %ᵃ (95% CI)**
Tenure in current position			
0-5 y	61% (57%-66%)	56% (52%-60%)	58% (54%-61%)
6-10 y	16% (14%-19%)	16% (15%-18%)	16% (15%-17%)
11-15 y	9% (8%-10%)	11% (10%-12%)	10% (10%-11%)
16-20 y	6% (5%-7%)	9% (6%-13%)	8% (6%-11%)
21 or above	8% (6%-9%)	8% (7%-8%)	8% (6%-11%)
Bargaining unit/union			
Yes	22% (17%-27%)	38% (31%-46%)	33% (27%-39%)
No	78% (73%-83%)	62% (54%-69%)	67% (61%-73%)
Tenure in current agency			
0-5 y	43% (40%-47%)	40% (36%-44%)	41% (38%-44%)
6-10 y	17% (16%-19%)	19% (14%-24%)	19% (15%-22%)
11-15 y	14% (12%-15%)	13% (10%-16%)	13% (11%-15%)
16-20 y	10% (9%-11%)	15% (9%-20%)	13% (9%-16%)
21 y or more	16% (13%-19%)	13% (10%-17%)	14% (12%-17%)
Tenure in public health practice			
0-5 y	34% (30%-37%)	28% (23%-33%)	30% (26%-33%)
6-10 y	17% (15%-19%)	19% (17%-21%)	18% (17%-20%)
11-15 y	14% (12%-17%)	17% (14%-19%)	16% (14%-18%)
16-20 y	12% (10%-13%)	17% (12%-21%)	15% (12%-18%)
21 y or more	23% (20%-26%)	20% (15%-24%)	21% (18%-24%)
Tenure in management			
0-5 y	38% (21%-55%)	28% (21%-36%)	32% (24%-40%)
6-10 y	17% (13%-20%)	18% (12%-23%)	17% (14%-21%)
11-15 y	18% (7%-30%)	16% (11%-21%)	17% (12%-22%)
16-20 y	14% (4%-23%)	26% (5%-47)	22% (7%-36%)
21 y or more	13% (7%-19%)	12% (8%-17%)	12% (9%-16%)
Educational attainment			
No College Degree	24% (22%-26%)	18% (14%-21%)	20% (17%-22%)
Associates	21% (16%-25%)	13% (11%-16%)	16% (13%-19%)
Bachelors	37% (35%-40%)	37% (35%-39%)	37% (36%-39%)
Masters	16% (14%-18%)	28% (22%-34%)	24% (19%-28%)
Doctoral	2% (1%-3%)	4% (3%-6%)	4% (3-5%)
Any degree in public health (any level)	10% (8%-12%)	13% (10%-15%)	12% (10%-14%)

Abbreviations: CI, confidence intervals; LHDs, local governmental health departments.
ᵃ Total percentages may exceed 100% because of rounding.

95% CI: 54%-61%). About 40% of LHD staff did not believe that they had enough training to fully utilize the technology needed for their work.

Skill gaps and training needs

The PH WINS assessed the strength of the local workforce in strategic skills across 8 domains. A skill gap occurs when a respondent identifies a skill as important in his or her day-to-day work but reports limited or no ability with that skill. Table 4 identifies the proportion of respondents with at least 1 skill gap in each of the 8 domains by jurisdictional size and employee type. While there are some differences by jurisdictional size, the proportion of respondents with at least 1 skill gap by domain was similar by

TABLE 2							
Intention to Leave by Size of Population Served, Age, and Supervisory Status							
	Size of Population Served		Age in Years			Supervisory Status		
	25 000-250 000 People Served % (95% CI)	**>250 000 People Served % (95% CI)**	**≤30 y % (95% CI)**	**31-50 y % (95% CI)**	**≥51 y % (95% CI)**	**Nonsupervisory % (95% CI)**	**Supervisory[a] % (95% CI)**	**All Staff %[a] (95% CI)**
Considering leaving organization in next year (excluding retirements)	19% (16%-23%)	23% (19%-28%)	30% (25%-36%)	24% (20%-28%)	15% (13%-18%)	23% (21%-26%)	18% (14%-22%)	22% (19%-25%)
Planning to retire within 5 y	22% (20%-24%)	22% (21%-23%)	1% (0%-1%)	3% (2%-4%)	50% (45%-55%)	20% (19%-21%)	28% (26%-30%)	22% (21%-23%)
Considering leaving organization in next year or planning to retire within 5 y	37% (33%-40%)	41% (38%-43%)	31% (25%-36%)	26% (22%-30%)	56% (52%-60%)	39% (37%-41%)	41% (38%-43%)	39% (37%-41%)

Abbreviation: CI, confidence intervals.

[a]Supervisory staff include those who identified as supervisors, managers, or executives.

jurisdictional size. For both jurisdictional sizes, budget and financial management and systems and strategic thinking had the greatest proportion of respondents with at least 1 skill gap. With the exception of executives, more than half of all respondents indicated at least 1 skill gap in the budget and financial management domain, the only domain to exceed 50%.

The proportion of executives reporting skill gaps in either of the domains was generally lower than that of supervisor/managers and nonsupervisory staff. However, the generally small sample size for this group led to larger confidence intervals, so few differences were statistically significant. Of note, more than one-third of executives in both LHDs serving 25 000 to 250 000 people and those serving more than 250 000 people reported at least 1 skill gap in the domain "developing a vision for a healthy community."

Emerging concepts in public health

PH WINS assessed the staff's awareness of and perception of the importance of 6 emerging concepts in
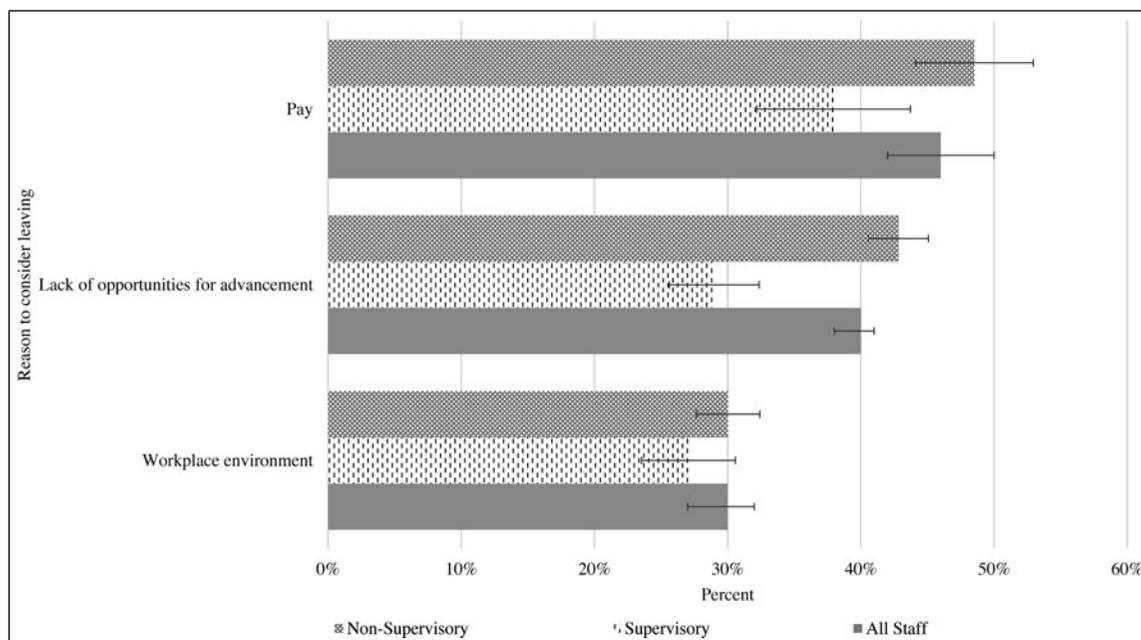
FIGURE Top 3 Reasons Local Health Department Staff[a] Are Considering Leaving Their Organization Within Next Year, 2017
[a]Among staff who reported that they are considering leaving their organization within the next year, excluding for retirement. Supervisory staff include those who identified as supervisors, managers, or executives. Bar represents point estimate. Error bars represent 95% confidence intervals.

TABLE 3

Local Health Department Staff's Perceptions of Workplace Environment, by Size of Population Served, 2017

Perception	Percentage of Staff Who Agreed or Strongly Agreed With the Perception		
	25 000-250 000 People Served % (95% CI)	>250 000 People Served % (95% CI)	All LHDs % (95% CI)
About me			
The work I do is important.	95% (94%-97%)	95% (94%-96%)	95% (95%-96%)
I am determined to give my best effort at work every day.	95% (93%-97%)	95% (94%-97%)	95% (94%-96%)
I know how my work relates to the agency's goals and priorities.	90% (86%-93%)	90% (88%-92%)	90% (88%-92%)
I feel completely involved in my work.	86% (83%-89%)	85% (82%-88%)	85% (83%-87%)
I am satisfied that I have the opportunities to apply my talents and expertise.	74% (71%-76%)	73% (66%-79%)	73% (88%-92%)
I have had opportunities to learn and grow in my position.	72% (70%-75%)	71% (67%-74%)	71% (69%-74%)
My training needs are assessed.	65% (61%-69%)	56% (54%-61%)	60% (57%-63%)
About the organization			
Employees learn from one another as they do their work.	84% (81%-87%)	83% (80%-85%)	83% (81%-85%)
Supervisors/team leaders work well with employees of different backgrounds.	75% (72%-78%)	72% (68%-75%)	73% (70%-75%)
Supervisors/team leaders in my work unit support employee development.	74% (70%-77%)	71% (70%-73%)	72% (71%-74%)
I recommend my organization as a good place to work.	73% (70%-77%)	71% (68%-75%)	72% (70%-75%)
Employees have sufficient training to fully utilize technology needed for their work.	59% (55%-64%)	58% (55%-61%)	59% (56%-61%)
Communication between senior leadership and employees is good in my organization.	56% (52%-60%)	48% (44%-52%)	51% (47%-54%)
Creativity and innovation are rewarded.	46% (42%-50%)	44% (43%-45%)	45% (43%-47%)
About my supervisor			
My supervisor treats me with respect.	84% (82%-86%)	85% (82%-88%)	84% (82%-87%)
My supervisor and I have a good working relationship.	84% (82%-86%)	81% (79%-84%)	82% (81%-84%)
My supervisor provides me with opportunities to demonstrate my leadership skills.	69% (67%-72%)	68% (67%-70%)	69% (67%-70%)

Abbreviations: CI, confidence intervals; LHDs, local governmental health departments.

their daily work. At least three-quarters of all respondents reported hearing of the trends queried except for Health in All Policies and Multi-Sectoral Collaboration (Table 5). Greater proportions of LHD staff reported awareness of emerging concepts that relate more to internal operations—quality improvement and evidence-based public health—compared with the trends that focus more on external engagement. For those who reported awareness of these emerging concepts, quality improvement (70%, 95 CI: 68%-72%) and evidence-based public health (64%, 95% CI: 60%-68%) were the trends that were more often cited as having an impact on the respondents' day-to-day work. Generally, differences were small by supervisory status and jurisdictional size. However, large differences were found between the proportion of nonsupervisory staff and supervisory staff who believed that quality improvement would have an impact on their day-to-day activities. A greater proportion of supervisors, managers, and executives in LHDs serving between 25 000 and 250 000 people had heard of these emerging concepts, compared with nonsupervisory staff. This difference was not found in LHDs serving more than 250 000 people.

Discussion

Differences in the size of the LHD workforce and population served have led to an approach of tailoring programs, resources, and interventions to LHD characteristics. These data demonstrate that the workforce training needs, retention, and perceptions in LHDs

TABLE 4
Self-Reported Skill Gaps[a] and Training Needs Among Local Health Department Staff, by Supervisory Status and Size of Population Served, 2017

Percentage of Staff Who Said at Least 1 Skill/Ability in the Category Was Important But Their Proficiency Was Low

Skill Gap Domain[c]	LHDs Serving 25 000-250 000 People			LHDs Serving >250 000 People			All LHDs		
	Nonsupervisory % (95% CI)	Supervisory[b] % (95% CI)	All Staff (95% CI)	Nonsupervisory % (95% CI)	Supervisory[b] % (95% CI)	All Staff % (95% CI)	Nonsupervisory % (95% CI)	Supervisory[b] % (95% CI)	All Staff % (95% CI)
Effective communication	19% (17%-21%)	21% (16%-25%)	20% (18%-22%)	20% (18%-21%)	12% (9%-15%)	18% (17%-19%)	20% (19%-21%)	15% (12%-18%)	18% (17%-19%)
Data for decision making	33% (29%-36%)	33% (27%-39%)	33% (29%-37%)	29% (28%-30%)	26% (21%-31%)	28% (26%-30%)	30% (29%-32%)	28% (24%-32%)	30% (28%-32%)
Cultural competence	32% (29%-36%)	39% (34%-45%)	34% (31%-38%)	27% (22%-33%)	32% (24%-40%)	28% (23%-34%)	29% (25%-33%)	35% (29%-40%)	31% (26%-35%)
Budget and financial management	59% (57%-61%)	64% (59%-69%)	61% (58%-63%)	54% (52%-56%)	53% (46%-59%)	54% (51%-56%)	56% (54%-57%)	57% (52%-62%)	56% (54%-58%)
Change management	50% (46%-53%)	50% (44%-55%)	50% (47%-52%)	43% (39%-47%)	43% (41%-46%)	43% (38%-46%)	45% (42%-49%)	46% (43%-48%)	45% (43%-48%)
Systems and strategic thinking	50% (45%-54%)	62% (58%-67%)	53% (50%-57%)	46% (44%-47%)	50% (38%-62%)	47% (44%-50%)	47% (45%-49%)	54% (46%-63%)	49% (46%-52%)
Develop a vision for a healthy community	46% (42%-50%)	55% (51%-59%)	48% (45%-51%)	43% (41%-45%)	45% (41%-50%)	44% (42%-45%)	44% (42%-46%)	49% (45%-53%)	45% (44%-47%)
Cross-sectoral partnerships	39% (34%-44%)	39% (34%-44%)	40% (37%-44%)	38% (35%-40%)	39% (34%-44%)	38% (36%-39%)	38% (36%-41%)	39% (36%-43%)	39% (37%-40%)

Abbreviations: CI, confidence intervals; LHDs, local governmental health departments.

[a] Skill gap was defined as respondents indicating a skill as "somewhat" or "very" important in their day-to-day work but also judged themselves as a "beginner" or "unable to perform" the skill.

[b] Supervisory staff include those who identified as supervisors, managers, or executives.

[c] Skills were grouped into 8 categories.

TABLE 5
Local Health Department Staff's Awareness and Perceptions of Emerging Concepts, by Supervisory Status and Size of Population Served, 2017

Concept	LHDs Serving 25 000-250 000 People						LHDs Serving >250 000 People						All LHDs	
	Nonsupervisory		Supervisory[b]		All Staff		Nonsupervisory		Supervisory[b]		All Staff		All Staff	
	Heard of Concept (95% CI)	Impact[a] (95% CI)	Heard of Concept (95% CI)	Impact[a] (95% CI)	Heard of Concept (95% CI)	Impact[a] (95% CI)	Heard of Concept (95% CI)	Impact[a] (95% CI)	Heard of Concept (95% CI)	Impact[a] (95% CI)	Heard of Concept (95% CI)	Impact[a] (95% CI)	Heard of Concept (95% CI)	Impact[a] (95% CI)
1: Cross-jurisdictional sharing of public health services	68% (66%-69%)	53% (49%-58%)	80% (77%-83%)	54% (47%-61%)	71% (69%-72%)	53% (49%-57%)	70% (66%-75%)	55% (53%-57%)	79% (76%-82%)	55% (52%-58%)	73% (70%-75%)	55% (53%-56%)	73% (70%-75%)	55% (53%-56%)
2: Fostering a culture of quality improvement (QI)	77% (75%-80%)	66% (63%-68%)	88% (85%-90%)	78% (74%-81%)	80% (84%-86%)	69% (67%-71%)	79% (77%-80%)	66% (65%-68%)	88% (83%-92%)	80% (75%-84%)	81% (80%-83%)	70% (68%-72%)	81% (80%-83%)	70% (68%-72%)
3: Public health and primary care integration	73% (71%-75%)	55% (51%-59%)	82% (80%-83%)	57% (51%-62%)	75% (74%-77%)	56% (52%-59%)	76% (74%-77%)	56% (54%-58%)	82% (79%-86%)	57% (55%-59%)	77% (76%-79%)	56% (54%-58%)	77% (76%-79%)	56% (54%-58%)
4: Evidence-based public health practice	77% (75%-80%)	62% (59%-65%)	89% (84%-95%)	72% (69%-75%)	80% (78%-83%)	65% (63%-67%)	79% (75%-82%)	63% (62%-65%)	86% (82%-90%)	65% (56%-75%)	81% (80%-83%)	64% (60%-68%)	81% (80%-83%)	64% (60%-68%)
5: Health in All Policies	57% (54%-61%)	49% (44%-54%)	66% (59%-73%)	46% (31%-62%)	60% (56%-63%)	48% (41%-56%)	60% (58%-63%)	55% (49%-62%)	65% (58%-71%)	47% (41%-55%)	61% (60%-63%)	53% (49%-58%)	61% (60%-63%)	53% (49%-58%)
6: Multisectoral collaboration	61% (59%-64%)	55% (51%-58%)	77% (73%-80%)	62% (53%-70%)	65% (63%-67%)	57% (52%-61%)	63% (62%-65%)	58% (56%-59%)	77% (74%-80%)	63% (59%-66%)	67% (65%-69%)	59% (57%-61%)	67% (65%-69%)	59% (57%-61%)

Abbreviations: CI, confidence intervals; LHDs, local governmental health departments.

[a] Among staff who have heard of concept, percentage of staff that feel the concept impacts day-to-day work a "fair amount" or a "great deal".

[b] Supervisory staff include those who identified as supervisors, managers, or executives.

serving between 25 000 and 250 000 people are similar to the workforce in LHDs serving more than 250 000 people. Differences that reached statistical significance were mostly not large enough to be of practical significance. This has important implications for workforce planning in LHDs, as it supports employing a single, unified approach rather than a segmented approach.

Priority training and development needs

Perceived differences in health department training needs have also been a barrier to national planning. The consistency of workforce training needs across health departments of differing jurisdiction size and individuals with different levels of supervisory authority supports the creation of a national workforce training plan. More than 60% of the LHD workforce surveyed indicated at least 1 deficiency in the budget and financial management domain. The domains of systems and strategic thinking (49%); change management (45%); and developing a vision for a healthy community (45%) followed. Additional analysis of the training gaps within each domain is needed, but these 4 domains should be a focal point of new training developed to improve and enhance the skills of the public health workforce.

Organizational climate, job satisfaction, and retention

Similarities were demonstrated across LHDs in factors associated with retention. When surveyed in 2017, 39% of the LHD workforce reported an intention to leave their positions by 2023, with half looking to leave in the next 12 months for a reason other than retirement. This escalates the importance of retention in the LHD workforce. Retention is especially critical in a governmental context, as vacant positions can remain unfilled or be filled by staff with less experience and lower salary requirements. The number of public health workers in the nation's SHAs and LHDs never fully rebounded from layoffs associated with declining government budgets in 2008.[15] Several PH WINS data points can inform comprehensive workforce retention strategies, particularly those aimed at creating a positive workplace environment that supports and recognizes individual pursuits.

Among those who were intending to leave their positions, compensation and a lack of opportunities for advancement were the most commonly cited reasons for leaving. While compensation is often out of the control of the supervisor or, at times, even the agency, there are strategies to build employees' skills, even in the absence of opportunities for promotion. Departments have an opportunity to improve metrics

for employee engagement such as *Supervisors/team leaders in my work unit support employee development*, *My supervisor/team leader provides me with opportunities to demonstrate my leadership skills*, and *I am satisfied that I have the opportunities to apply my talents and expertise*.

One opportunity is to ensure that training opportunities are available. Studies show that accessibility to training can contribute to a more engaged workforce.[23] Currently, 40% of the LHD workforce report that their training needs were not assessed. These metrics are amenable to the influence of leaders within the organization but require a dedicated commitment on the part of leadership to improve and lead to possible retention.

These efforts can also benefit the overall morale by allowing staff opportunities to develop creative strategies to enhance the work environment. The LHD workforce comprises skilled, motivated, mission-driven, challenge-seeking people who use a combination of creativity, abilities, talent, skills, and knowledge to solve problems. This is the very definition of a modern knowledge worker, a concept initially defined by Peter Drucker in 1959.[24] However, less than half of the LHD workforce believe that creativity and innovation are rewarded at their LHD. This is a serious problem, not only because it limits the development of potential strategies to improve community health outcomes but also because creativity is highly tied to worker engagement.[11,25] Those in leadership positions in LHDs and those funding public health workforce development must elevate this as a national workforce development priority and a key metric to track.

In addition, retention strategies are not solely the responsibility of leadership. More than one-third of the workforce has 16 years of public health experience. With more than 80% of the workforce indicating that employees learn from one another, engaging this concentration of experienced workers in retention activities, like mentoring or job shadowing, could be an asset to retention.

In addition to retaining existing staff, this collaborative effort among staff can help LHDs develop a broader workforce pipeline for LHDs to help drive recruitment of qualified public health workers. A total of 12% of the LHD workforce is 30 years of age or younger. However, approximately one-third of the workforce has zero to 5 years of public health experience. This suggests that entry into the LHD workforce occurs later in one's career. The LHDs should consider how an established on-the-job education or training component can benefit them by assessing staff who are entering the field later in their career and who may lack public health experience. A valuable input into the workforce pipeline is the growing number of

graduates with Bachelor of Science in public health degrees.[26] A strong value proposition will need to be made for these workers to consider a career in governmental public health. The LHDs should consider experiential learning opportunities and internships that can attract early-career professionals to LHD service.

Emerging concepts in public health

Fostering a culture of quality improvement and a movement to evidence-based public health practice have been developmental priorities for the public health workforce. While a somewhat recent development, these concepts have gained considerable recognition through advancement by organizations such as the Public Health Accreditation Board. This is reflected in the responses of the LHD workforce, with more than 80% being aware of both concepts and with each having the greatest proportion of respondents indicating that these emerging concepts have an impact on their day-to-day work. However, while these internally facing emerging concepts resonated with the workforce, in a Public Health 3.0 context, 2 key emerging concepts are lagging. A total of 61% and 67% of the workforce had heard of Health in All Policies and Multi-Sector Collaboration, respectively. Of those who had heard of these, less than 60% of respondents indicated that they would have an impact on their day-to-day work. While frameworks such as Public Health 3.0 and community chief health strategist are viewed as central to maintaining and achieving improved community health, the requirements of these frameworks cannot be realized without a national commitment to ensure a workforce conversant in the skills and emerging concepts central to them.[4]

Limitations

There are nearly 3000 LHDs in the United States. This study did not examine LHDs that serve the smallest jurisdictions, populations less than 25 000 or have fewer than 25 staff, which comprise 64% of the nation's LHDs. Nonresponse bias is a potential limitation of this study. If departments that opted not to participate in PH WINS or individuals who choose not to respond to the survey are different than participants and respondents, generalizability may be limited. Balanced repeated replication weights were used to account for sample design and nonresponse. In addition, as with all self-reported data, there is the possibility for response bias; the potential for social desirability bias is especially worthy of consideration for skill gaps and training needs, as well as for the importance and impact of national trends.

Implications for Policy & Practice

- These data create the first-ever nationally representative benchmark against which the local governmental public health workforce can be measured.

- The workforce in LHDs serving 25 000 to 250 000 and >250 000 are quite similar. A single, unified national approach to workforce development for LHDs should be developed and implemented.

- The LHDs need to prioritize retention. Comprehensive workforce retention strategies should focus on supporting employee development, including opportunities for staff to apply their talents and demonstrate their leadership skills. Individual employee training needs must also be assessed, the results of which can be used to train and better engage employees.

- To fulfill the vision of Public Health 3.0, the workforce's understanding of multisectoral collaboration and health in all policies must improve.

Conclusion

These data can be used in 2 ways. First, these data create a national benchmark against which other health departments can measure their workforce. These data are a sample of LHDs serving at least 25 000 people. Those LHDs not included in the sample can field this survey internally and have a point of comparison both regionally and nationally. The second way these data can be used is to advocate for greater alignment and synergy in LHD workforce development and increased action. These data demonstrate that there are limited practical differences between LHDs serving 25 000 to 250 000 people and those serving more than 250 000 people. Training needs, workplace perceptions, and awareness of national trends are common, and, therefore, so are many of the solutions needed. Many of these solutions are within the control of LHD leadership. To achieve workforce gains, workforce training is necessary to address skill gaps, but equally needed are strategies for leaders to address and improve key metrics identified here.

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