

The Financial and Business Analysis Capacities of the State and Local Public Health Workforce

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ABSTRACT

Objective: To assess the financial competencies and skills of the state and local public health workforce.

Design: Analysis of the 2017 wave of the Public Health Workforce Interests and Needs Survey (PH WINS). Bivariate statistics and logistic regression models identified correlates and predictors of financial skills and skills gaps in the workforce.

Setting: PH WINS was fielded to a nationally representative sample of all staff at all local health departments serving 25 000 or more persons and all state health agency staff.

Participants: A total of 47 604 people responded to PH WINS in 2017 (overall response rate 48%).

Main Outcome Measures: Financial competencies were measured in 3 areas: public health program and service delivery, public health agency funding, and public health agency business planning.

Results: A moderate percentage of the state and local public health workforce (36.7%–40.6%) reported that financial skills were not applicable to their job. Skill levels tended to be modestly but significantly higher for the state health workforce than for the local health workforce. Correlates of financial proficiency and skills gaps varied for the 3 areas assessed and by state versus local setting. In general, administrators, managers and executives, older individuals, and persons working in decentralized or shared departments tended to have higher levels of financial skills proficiency. Persons working in clinical roles, supervisors, newer managers, and persons reporting higher levels of burnout were more likely to report a skills gap.

Conclusions: There are areas of notable strengths in state and local public health workforce financial skills. Yet portions of the workforce that may have been subjected to newer financial training approaches did not consistently report higher financial skills. Findings suggest areas for further improvement in the financial competency of the state and local public health workforce.

KEY WORDS: financial competency, financial skills, local public health, public health workforce, state public health

Ten years ago, a special issue of the *Journal of Public Health Management and Practice* was devoted to public health financial management practices and competencies.¹ Studies noted deficiencies in financial management capabilities, especially in rural or underserved settings.² Some of these

shortcomings may be attributable to the historical lack of financial competencies included in most master of public health (MPH) training programs.³ In an effort to improve the financial analysis capacity of the public health workforce, new financial competencies for public health professionals have been developed and it has been recommended that MPH programs require 1 or more courses in finance or budgeting.^{1,3,4} The Council on Linkages Between Academia and Public Health Practice lists financial planning and management as 1 of 8 core competency domains for public health professionals.⁵

However, the extent to which these workforce development initiatives have been successful at diffusing financial management skills into today's public health workforce is still an open question. Relatively little data are available to track what the public health workforce needs and prioritizes with respect to financial management and business analysis skills. One study asked local health departments (LHDs) to report on their perceptions of the most important

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areas and areas with the most additional training needed. Respondents were health department finance officers and findings indicated that knowledge of budgets, ability to interpret and communicate financial data, and ability to assess the organization's financial status were important areas in need of more progress. This study was critical in that it catalyzed discussion and action around the fact that there are pervasive unmet financial management needs in public health. Yet the study captured the opinions of financial executive officers within health departments and did not capture the perceptions of nonfinancial executive officers, program supervisors, mid-level managers, and other nonsupervisory personnel.⁶

More recently, researchers made use of the first wave of Public Health Workforce Interests and Needs Survey (PH WINS) to assess correlates and predictors of business skills in the public health workforce across state health departments.⁷ Data from more than 10 000 state health department personnel were collected via survey in 2014; findings showed that higher proficiency in business skills was associated with higher job satisfaction and higher annual salary, adjusting for other factors.⁷ These findings were important indicators that suggested both challenges and opportunities related to business analysis skills in the public health workforce. Further analysis of PH WINS data revealed that financial management skills—and budgeting skills in particular—were an area where further training was in demand.⁸ Yet financial skills were 1 of 8 priorities identified as areas where additional training is demanded by public health professionals, suggesting that financial skills may be but one of many areas with training needs.

Thus, although there has been substantially more attention paid to financial analysis skills in public health training programs, graduates may still lack adequate preparation in certain public health financial management skills.³ Moreover, changes in the public health landscape may have resulted in a somewhat modified or expanded set of relevant skills related to finances and economics. Public health professionals are more commonly being asked to demonstrate program financial sustainability or return on investment,^{9,10} and financial management skills are an important component of such initiatives. For large or well-resourced departments, it may be feasible to build a workforce with wide-ranging capacity for functions such as financial management, whereas for other departments, partnerships with others may be required.¹¹ But it is unknown whether there are disparities in the economic, business, and financial analysis capabilities that are increasingly demanded of public health professionals. The purpose of this study was to explore capacity for financial and

business analysis across the state and local public health workforce.

Methods

Conceptual approach

This study assumes that public health professionals are aware of and able to accurately assess their own financial management skills and that an individual assesses skills relative to his or her current position, not against potential future roles and responsibilities. Given that a primary tool for improving financial management skills is the development of such skills during educational training programs (eg, MPH and similar)^{3,6} and that such training would thus be equally applied to individuals who eventually work at 1) the state level, 2) the local level in states with decentralized governance, and 3) at the local level in states with centralized or mixed governance, there is a need to understand the entire population of public health professionals. Consistent with public health financial management competency models, financial skills are hypothesized to be important across all job classifications, though the level of skill required may vary according to an individual's supervisory status.¹ Given the fact that financial skills have historically been an area where additional training is needed and that there has been recent diffusion of financial skills into public health training programs,^{3,8} financial skills are hypothesized to be stronger and skills gaps less common among public health professionals who have a public health degree or are certified in public health (CPH), who are younger or newer to the field, and who do not have plans to retire. Financial skills are also hypothesized to be associated with higher job satisfaction,⁷ while their relationship with levels of burnout is less certain^{12,13} and could be either negative (higher skills and fewer skills gap leads to more agency and improved ability to perform one's job) or positive (increased professional demands due to responsibilities related to financial management). Finally, characteristics of the public health department itself may impact the skills needed to perform a job, and therefore one's self-perception of skills or a skills gap. For example, a state with decentralized control could mean that local employees would perform more financial tasks and thus rate their skills and skills gap differently than those in centralized states.

Data source

This study used secondary data from the 2017 wave of the PH WINS.¹⁴ A national survey of the state and local public health workforce, PH WINS, was fielded to

a nationally representative sample of state and local health department staff. The survey used a complex sample design in order to be nationally representative of all public health departments. At the LHD level, staff from LHDs with 25 or more employees and serving populations of 25 000 or greater were randomly sampled across 20 strata on the basis of department size and region of the country. All staff in each selected LHD that participated were asked to complete the survey. Staff were also contributed with certainty from large LHDs and nondecentralized states. The frame is representative of staff at LHDs serving more than 25 000 people and with 25 or more staff. It is not representative of smaller LHDs. Balanced repeated replication weights were used to adjust variance estimates for the survey's complex design. A total of 47 604 people responded to PH WINS in 2017 (overall response rate 48%). More detail regarding PH WINS methodologies is available in the accompanying article in this issue of the *Journal of Public Health Management and Practice*.¹⁴

Measures

The outcome of interest for this study was the capacity for financial and business analysis across the state and local public health workforce (termed throughout as “financial skills”). This was measured using 3 items on PH WINS that asked respondents to describe their current skill level for each of the following: “Describe financial analysis methods applicable to program and service delivery,” “Describe how public health funding mechanisms support agency programs and services,” and “Describe the value of an agency business plan.” All 3 items offered 5 potential response options: not applicable, unable to perform, beginner, proficient, and expert.

A secondary outcome of interest was a skills gap in any of the 3 skills listed previously. A skills gap is defined here as occurring when a respondent reported low proficiency for an important skill. This definition is consistent with previous analyses using PH WINS data.¹⁵ Two PH WINS items were used to determine whether a skills gap was present. A skills gap occurred if a respondent reported having low levels of proficiency (“unable to perform” or “beginner”) for a skill self-rated as being “somewhat important” or “very important” in day-to-day work.

All items were asked of all PH WINS respondents with the exception of training questions—these were asked by tier of supervisory status (nonsupervisors, supervisor/manager, executive). Each of the 3 tiers was asked about each of the 3 financial skills and competencies in differing ways to ensure relevance to a respondent's job duties. To streamline presentation of

findings, this analysis generated summary terms for the 3 general areas of financial skill and competency that respondents were surveyed on. Table 1 shows the original wording for all 9 financial skills and competencies survey items along with the summary terminology adopted for use throughout this analysis.

Respondent characteristics were also measured using several PH WINS items. Respondents were classified as working at the state or local level. A respondent's job type position was measured and aggregated into 1 of 4 job classifications (administration, clinical and laboratory, public health sciences, or social services/other) and also into 1 of 4 supervisory statuses (nonsupervisor, supervisor, manager, and executive). Information about a respondent's experience and tenure was also obtained. Age was classified as 40 years or younger, 41 to 60 years, or older than 60 years. Three separate indicators were available for whether the respondent had less than 5 years' experience in public health practice, less than 5 years' experience in public health management, or had plans to retire within 5 years. Respondents' education and training were measured by whether the individual reported having a public health degree (eg, MPH or doctor of public health) and, separately, whether he or she is CPH. Finally, respondents' satisfaction and burnout were assessed using several measures. Respondents indicated whether they were satisfied or very satisfied with their job overall, their organization, their pay, and their job security. Burnout was calculated using the Oldenburg Burnout Inventory,^{16,17} which ranges from 1 to 4, with 4 indicating the highest level of burnout on the scale.

Data analyses

The main analytic objective of this study was to characterize the financial skills of the state and local public health workforce. To this end, univariate statistics were calculated for state and local respondents and for the entire sample. To identify patterns and correlates of financial skills, bivariate statistics were also calculated; differences were tested for statistical significance using *t* tests, χ^2 tests, and analysis of variance tests as applicable.

Multivariable regression models were then used to identify significant correlates and predictors of financial skills related to program and service delivery, agency funding, and business planning. For respondents who reported that financial skills were applicable to their job, logistic regression models regressed whether a respondent identified as being at least proficient (ie, self-reported skill level of “proficient” or “expert”). Separate models were run for each of the 3 financial skills for the state workforce, the LHD

TABLE 1
Financial Skills and Competencies Analyzed

Umbrella Summary Term Used in Analyses	Questionnaire Item for Nonsupervisors	Questionnaire Item for Supervisors/Managers	Questionnaire Item for Executives
Program and Service Delivery	Describe financial analysis methods applicable to program and service delivery	Use financial analysis methods in making decisions about programs and services across the agency	Use financial analysis methods in making decisions about programs and services across the agency
Agency Funding	Describe how public health funding mechanisms support agency programs and services (eg, categorical grants, state general funds, fees, third-party reimbursement, tobacco taxes)	Leverage funding mechanisms and procedures to develop sustainable funding models for the agency (eg, categorical grants, state general funds, fees, third-party reimbursement, tobacco taxes, value-based purchasing, budget approval process)	Leverage funding mechanisms and procedures to develop sustainable funding models for the agency (eg, categorical grants, state general funds, fees, third-party reimbursement, tobacco taxes, value-based purchasing, budget approval process)
Business Planning	Describe the value of an agency business plan (eg, tool for analyzing and planning for a product or service that will meet a community need, generate revenue, and be sustainable)	Design a business plan for the agency (eg, tool for analyzing and planning for a product or service that will meet a community need, generate revenue, and be sustainable)	Design a business plan for the agency (eg, tool for analyzing and planning for a product or service that will meet a community need, generate revenue, and be sustainable)

workforce, and all respondents. Predictor variables included all respondent characteristics described in the “Measures” section previously.

Finally, another set of logistic regression models was performed to identify gaps in financial skills. For respondents who reported that financial skills were applicable to their job, logistic regression models regressed whether a respondent reported a skills gap (ie, low levels or proficiency of unable to perform or beginner for a skill respondent views as being important). Separate models were run for each of the 3 financial skills (program and service delivery, agency funding, and business planning). Models were run for the state workforce, the LHD workforce, and all respondents. Predictor variables included all respondent characteristics described in the “Measures” section previously. All data management and analysis was performed using Stata 15.

Results

Overall findings from PH WINS questions regarding state and local public health workforce financial skills are shown in Table 2. Full demographic characteristics of the sample are available in the appendix (see Supplemental Digital Content Table A2, available at <http://links.lww.com/JPHMP/A543>). The specific percentages reporting each level of skill varied somewhat across the 3 financial skills analyzed. However, broadly speaking a sizable proportion of the public health workforce (36.7%-40.6%) reported that a

specific financial skill was not applicable to their job. A relatively small proportion of the public health workforce rates themselves as “expert” in any of the financial skills surveyed (4.3%-4.4%). Self-reported financial skill levels were found to significantly differ between the state and local public health workforces for 2 of the 3 skills surveyed. For financial analysis skills related to both 1) program and service delivery and 2) agency funding, the LHD workforce was modestly but statistically significantly less likely to report that the given skill was not applicable, but the respondent was more likely to report that he or she was unable to perform or was a beginner at that specific skill.

The perceived importance of the 3 public health financial skills overall was also assessed according to competency level for that skill (data shown in Supplemental Digital Content Appendix Table A1, available at <http://links.lww.com/JPHMP/A543>). Overall, while there was some variation across the 3 skills, approximately 40% to 50% of the public health workforce views each financial skill as very important while less than 20% views each skill as not important. Perceptions of importance were positively associated with financial skill. For each skill, as self-reported skill level increased, the proportion of respondents who viewed the skill as important also increased. Across all 3 skills, more than one-quarter of the public health workforce viewed each financial skill as very important even if it was not applicable to their position.

Financial skills and competencies for the public health workforce according to job type, experience/

TABLE 2
Overall Financial Skills and Competencies of the State and Local Public Health Workforce

Competency	Self-Reported Skill Level	Overall (n = 41 195)	State Public Health Workforce (n = 16 410)	Local Public Health Workforce (n = 24 785)
Program and service delivery ^a	Not applicable	40.6%	41.1%	40.4%
	Unable to perform	9.2%	8.0%	9.6%
	Beginner	23.7%	21.9%	24.4%
	Proficient	22.3%	23.3%	21.8%
	Expert	4.3%	5.7%	3.7%
Agency funding ^b	Not applicable	36.7%	37.2%	36.4%
	Unable to perform	6.9%	5.6%	7.5%
	Beginner	25.7%	23.6%	26.6%
	Proficient	26.4%	27.8%	25.8%
	Expert	4.4%	5.9%	3.7%
Business planning	Not applicable	40.2%	41.1%	39.9%
	Unable to perform	8.0%	7.1%	8.4%
	Beginner	22.5%	22.5%	22.5%
	Proficient	24.9%	24.8%	24.9%
	Expert	4.4%	4.6%	4.3%

^aP < .01 (P value for significant difference in variable distribution between state and local workforce).

^bP < .001 (P value for significant difference in variable distribution between state and local workforce).

tenure, education, and levels of job satisfaction are shown in Table 3. Findings for skills relating to program and service delivery are shown here while, in the interest of space, findings for the skills related to agency funding and business planned are shown in the Appendix (see Supplemental Digital Content Tables A3 and A4, available at <http://links.lww.com/JPHMP/A543>, respectively). Similar trends were noted across all 3 financial skills examined.

Multivariable models predicting the odds of being proficient and having a skills gap are shown in Tables 4 and 5, respectively. Models found that the odds of being proficient in the 3 clinical skills varied across several important characteristics. Nonsupervisory positions and nonadministrators had the lowest odds of being proficient for all 3 financial competency areas across both state and local settings. Being older or having more years of public health or managerial experience was only sometimes associated with better odds of financial competencies. Neither being CPH nor having a public health degree (MPH or doctor of public health) was consistently associated with higher odds of being proficient in financial skills related to program and service delivery after accounting for other factors in the model. Job satisfaction was also associated with higher odds of being proficient but not across all satisfaction types in all settings. Persons employed at local health agencies were less likely to report financial proficiency, though the

state's governance structure was not associated with odds of proficiency.

Models in Table 5 showed clear associations between skills gaps and certain individual or job characteristics. Notably, nonadministrative positions had higher odds for several of the skills gaps models run. Supervisors in local health agencies were more likely to report skills gaps in all of the 3 financial competencies than nonsupervisors. New public health managers were significantly more likely than those with greater experience to report skills gaps. For at least 2 financial competencies, having a public health degree was associated with lower odds of having a skills gap whereas being CPH was sometimes associated with higher odds of having a skills gap.

Discussion

The financial acumen and capabilities of the public health workforce have been an issue of ongoing discussion for some time. But the extent to which numerous workforce development initiatives have been successful at diffusing financial management skills into today's public health workforce is still an open question. This analysis leveraged a novel data source to explore financial skills and capacities across the state and local public health workforce. Top-level findings are a mixed bag, in that while some progress can be seen, especially for new and highly trained workers,

TABLE 3
Public Health Workforce Competencies for Financial Analysis Methods Applicable to Program and Service Delivery by Workforce Demographics and Department Characteristics

Workforce Characteristic	Self-Reported Skill Level (n = 41 195)				
	Not Applicable	Unable to Perform	Beginner	Proficient	Expert
Overall	40.6%	9.2%	23.7%	22.3%	4.3%
<i>Job type</i>					
Job classification ^a					
Administration	46.9%	6.0%	18.9%	22.7%	5.5%
Clinical and laboratory	41.7%	14.4%	24.4%	17.6%	1.9%
Public health sciences	31.7%	9.2%	29.1%	25.6%	4.6%
Social sciences	45.6%	9.0%	21.7%	19.7%	4.0%
Supervisory status ^a					
Nonsupervisor	45.5%	9.6%	22.7%	19.1%	3.3%
Supervisor	36.1%	9.6%	26.4%	24.0%	3.9%
Manager	19.3%	6.4%	27.6%	38.0%	8.7%
Executive	7.9%	4.6%	21.1%	46.2%	20.3%
<i>Experience/tenure</i>					
<5 y public health practice experience ^a					
No	38.8%	9.3%	23.3%	24.2%	4.6%
Yes	45.1%	8.8%	24.6%	17.8%	3.7%
<5 y public health management experience ^b					
No	43.0%	9.4%	20.1%	23.1%	4.3%
Yes	39.0%	9.0%	26.1%	21.7%	4.3%
Plans to retire within 5 y ^c					
No	40.8%	9.1%	24.6%	21.5%	4.0%
Yes	40.1%	9.3%	21.0%	24.5%	5.1%
Age, y ^a					
≤40	40.6%	8.9%	28.5%	18.4%	3.6%
41-60	40.0%	9.2%	22.0%	24.1%	4.7%
>60	42.2%	10.0%	18.2%	25.0%	4.6%
<i>Education/training</i>					
Certified in public health					
No/not reported	40.7%	9.6%	24.2%	21.3%	4.2%
Yes	30.7%	12.5%	27.2%	23.6%	6.1%
Public health degree (MPH/DrPH) ^a					
No	41.9%	8.8%	22.9%	22.1%	4.3%
Yes	27.8%	12.7%	31.6%	23.7%	4.2%
<i>Satisfaction and burnout</i>					
Percent who are satisfied with					
Overall job	78.5%	78.5%	84.9%	84.8%	78.3%
Organization	66.9%	65.1%	76.8%	71.6%	68.7%
Pay	45.3%	43.2%	52.5%	54.1%	48.6%
Job security	73.3%	68.1%	72.3%	71.7%	73.4%
Measures of burnout (score from 1 to 5, 5 is high)					
Burnout	2.33	2.35	2.27	2.25	2.23
Exhaustion	2.32	2.38	2.29	2.26	2.25
Disengagement	2.34	2.32	2.24	2.23	2.22

(continues)

TABLE 3
Public Health Workforce Competencies for Financial Analysis Methods Applicable to Program and Service Delivery by Workforce Demographics and Department Characteristics (Continued)

Workforce Characteristic	Self-Reported Skill Level (n = 41 195)				
	Not Applicable	Unable to Perform	Beginner	Proficient	Expert
<i>Department characteristics</i>					
Employed by ^b					
State health agency	41.1%	8.0%	21.9%	23.3%	5.7%
Local health agency	40.4%	9.6%	24.4%	21.8%	3.7%
State's governance classification ^b					
Centralized	43.3%	10.1%	21.1%	21.6%	4.0%
Decentralized	39.8%	9.4%	25.4%	21.7%	3.7%
Shared or mixed	41.2%	8.2%	21.0%	23.8%	5.9%
Health and Human Services region					
1 and 2	13.6%	8.3%	7.1%	15.1%	19.9%
3	9.4%	10.9%	9.2%	8.2%	10.1%
4	27.7%	23.5%	26.3%	28.6%	27.3%
5	13.1%	16.9%	17.2%	12.1%	8.9%
6	8.8%	9.0%	8.2%	8.6%	9.3%
7	2.5%	3.4%	4.2%	3.9%	1.8%
8	4.0%	4.6%	5.4%	4.4%	3.2%
9	15.8%	16.7%	15.9%	14.5%	15.8%
10	5.3%	6.7%	6.5%	4.8%	3.8%

^aP < .001 (P values for significant difference in variable mean/distribution).

^bP < .01 (P values for significant difference in variable mean/distribution).

^cP < .05 (P values for significant difference in variable mean/distribution).

substantial gaps remain in terms of financial skills and competencies of the public health workforce.

Overall, a sizable proportion of the state and local public health workforces does not report having positions for which financial analysis skills are applicable. This study did not seek to uncover whether or not financial analysis skills are truly applicable to these positions. It is intrinsically important to understand the workforce's own perception of the importance of these skills irrespective of any preconceived notions. The finding that 40% to 50% of all public health professionals do not report financial skills to be applicable to their roles is that workforce training requirements is perhaps not entirely surprising, especially for frontline or other nonsupervisory positions. Yet in combination with other findings, this poses substantial challenges for training the next generation of public health professionals. Specifically, of the portion of the workforce that does not view financial skills as applicable, respondents are roughly split between viewing these skills as important versus unimportant. Moreover, persons who do not view financial skills as important tend to have disproportionately

nonsupervisory roles. While this study did not address career progression, it is plausible to think that these nonsupervisory individuals may eventually progress into supervisory roles. Therefore, while a sizable portion of the public health workforce does not view financial skills as applicable, many of these same individuals may someday progress into roles for which financial skills are critical. This finding may have important implications for schools and programs of public health and other workforce training standards. There may be good justification for tiered training standards that provide nuanced or niche skills to individuals if and when they are required by their current or anticipated positions rather than uniformly providing training in all skills to all of the public health workforce regardless of their perceived importance of a given skill. Standards may need to reflect the multimodal nature of whether and how public health positions actually require financial competencies and skills.

While prior studies have examined data on leaders' perceptions of financial skills of the public health workforce⁶ or the state public health workforce,⁷ this

TABLE 4
Odds Ratios From Logistic Regression for Likelihood of Members of the Public Health Workforce Being Proficient in 3 Separate Financial Competency Areas^a

Predictor Variable	Program and Service Delivery			Agency Funding			Business Planning		
	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies
<i>Job type</i>									
<i>Job classification</i>									
Administration	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Clinical and Laboratory	0.44 ^b	0.38 ^b	0.46 ^b	0.65 ^b	0.57 ^b	0.67 ^b	0.52 ^b	0.58 ^b	0.52 ^b
Public health sciences	0.67 ^b	0.59 ^b	0.72 ^c	1	0.90 ^d	1.04	0.92	0.84 ^c	0.93
Social sciences	0.69 ^c	0.64 ^c	0.72	1.06	0.82	1.14	0.74 ^d	0.71 ^d	0.76
<i>Supervisory status</i>									
Nonsupervisor	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Supervisor	1.14 ^d	1.35 ^b	1.03	0.80 ^c	1	0.73 ^b	0.88	1.33 ^c	0.75 ^c
Manager	1.96 ^b	2.08 ^b	1.89 ^c	1.53 ^d	1.71 ^b	1.48	1.47 ^b	2.13 ^b	1.25 ^d
Executive	3.26 ^b	2.79 ^b	3.60 ^b	1.83 ^b	2.06 ^b	1.81 ^c	1.88 ^b	2.05 ^b	1.86 ^b
<i>Experience/tenure</i>									
<5 y public health practice experience	0.88	0.96	0.83 ^d	0.79 ^c	0.69 ^b	0.84	0.9	1.07	0.85 ^d
<5 y public health management experience	0.85 ^d	0.81 ^d	0.88	0.75 ^d	0.87	0.72 ^d	0.78 ^c	0.84 ^d	0.77 ^c
Plans to retire within 5 y	1.01	1.07	0.99	0.95	1.01	0.93	1.21 ^c	1.08	1.25 ^c
<i>Age y</i>									
≤40	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
41-60	1.26 ^b	1.22 ^b	1.26 ^d	1.1	1.11	1.09	1.13	1.25 ^b	1.11
> 60	1.46 ^c	1.30 ^c	1.51 ^d	1.32	1.33 ^d	1.32	1.03	1.34 ^c	0.96
<i>Education/training</i>									
Certified in public health	1.13	1.16	1.1	1.11	1.46 ^c	1.02	1.65 ^b	1.66 ^c	1.67 ^b
Public health degree (MPH/DrPH)	0.70 ^b	0.72 ^b	0.68 ^b	1.1	1.13 ^d	1.08	0.68 ^c	0.60 ^b	0.79
<i>Satisfaction</i>									
Burnout index	0.60 ^b	0.56 ^b	0.61 ^b	0.66 ^b	0.61 ^b	0.67 ^b	0.44 ^b	0.47 ^b	0.44 ^b
Satisfied/very satisfied with:									
Job overall	1.03	0.92	1.1	1.05	0.87	1.14	0.93	0.82 ^d	0.93
Organization	0.72	0.78 ^c	0.68	0.7	0.83 ^b	0.66	0.9	0.82 ^c	0.99
Pay	0.95	0.88 ^d	0.99	1.11	1.03	1.15	0.91	0.94	0.89
Job Security	1.18 ^d	1.09	1.2	1	0.97	1.01	0.95	0.94	0.98
<i>Department characteristics</i>									
Employed by									
State health agency	Reference	...	...	Reference	...	...	Reference	...	...
Local health agency	0.83 ^c	...	...	0.78 ^b	...	...	0.96	...	...
State's governance classification									
Centralized	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Decentralized	1.12	1.08	1.15	1.06	1.06	1.07	1.30 ^c	1.17 ^d	1.27 ^d
Shared or mixed	1.19 ^b	1.1	1.22 ^d	1.1	1.01	1.14	1.22 ^c	1.15	1.25 ^d

(continues)

TABLE 4
Odds Ratios From Logistic Regression for Likelihood of Members of the Public Health Workforce Being Proficient in 3 Separate Financial Competency Areas^a (Continued)

Predictor Variable	Program and Service Delivery			Agency Funding			Business Planning		
	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies
Health and Human Services region									
1 and 2	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
3	1.48	1.32 ^d	1.65	1.13	1.05	1.18	0.58	1.2	0.39
4	1.77 ^d	1.27 ^d	2.15	1.27	1.18	1.33	0.65	1.43 ^c	0.43
5	1.3	1	1.49	0.88	1.02	0.85	0.36	1.03	0.23
6	1.69 ^d	1.29 ^c	1.96	1.19	1.19	1.21	0.6	1.39 ^c	0.4
7	1.27	0.80 ^d	1.61	1.19	1.1	1.25	0.51	0.92	0.39
8	1.3	1.05	1.42	1.03	1.05	1.03	0.46	1.15	0.28
9	1.5	1.09	1.75	1.15	1.07	1.21	0.51	1.14	0.34
10	1.09	0.97	1.16	0.9	1.03	0.85	0.4	1.24	0.23
Constant from regression model	2.49 ^b	4.74 ^b	1.59	3.62 ^b	4.56 ^b	2.52 ^d	14.41 ^b	5.45 ^b	19.26 ^c
n (model sample size)	23 410	9448	13 962	25 087	10 062	15 025	23 644	9425	14 219

^a Models include data only for respondents reporting that a given financial skill was applicable to their position.

^b P < .001.

^c P < .01.

^d P < .05.

study was the first to examine these issues across the entire field. It is notable to report that correlates of financial competencies at both the state and local levels remained largely consistent. However, the overall competency levels were significantly higher at the state level than at the local level.

To an extent, it is reasonable to wonder what the “correct” level of financial skills should be for public health practitioners. For this reason, individuals’ perceptions of their own skills relative to their own needs are especially important. Several findings regarding correlates of proficiency and skills gaps also warrant discussion.

It has been more than 5 years since the Association of Schools and Programs of Public Health adopted its original core competency framework that incorporated some elements of financial competencies and skills. So we would expect that newer public health professionals would be better equipped with financial skills. However, regression models show that persons with less than 5 years’ public health practice experience tended to have the same levels of proficiency in many skill areas and were actually *more* likely to report skills gaps. Likewise, compared with older individuals, persons younger than 40 years tended to have the same levels of proficiency. This means that this study found no evidence that the proficiency levels are improving among these specific segments of

the public health workforce. To the extent that these relationships are causal, a complex picture emerges that suggests the potential existence of a split in terms of financial competency between new public health professionals with and without public health degrees.

Similarly, nuanced pictures emerged in the examination of correlates of financial skills gaps across the public health workforce. A skills gap requires recognition of the importance of financial competencies *and* low self-rated skills; these portions of the workforce may be less likely to report 1 or both of these. For example, although a nonsupervisory individual who is new to the public health workforce may not be proficient in financial or business analysis skills, he or she may not view financial skills as all that important. This would not be counted as a skills gap in this analysis.

This study’s findings should be viewed in light of its limitations. First, data are self-reported and, as with any survey, the potential exists for response bias or other forms of bias. While this is an acknowledged limitation of this study, one advantage of PH WINS is that its sampling strategy (described elsewhere¹⁴) mitigated many of these concerns. Moreover, response bias would be especially concerning if there were reason to believe that persons were differentially more or less likely to respond to the survey or any of the specific questions on the basis of

TABLE 5
Odds Ratios From Logistic Regression for Likelihood of Having a Skills Gap in 3 Separate Financial Competency Areas^a

Predictor Variable	Program and Service Delivery			Agency Funding			Business Planning		
	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies
<i>Job type</i>									
Job classification									
Administration	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Clinical and laboratory	1.73 ^b	2.00 ^b	1.65 ^b	1.45 ^b	1.72 ^b	1.39 ^b	1.68 ^b	1.55 ^b	1.68 ^b
Public health sciences	1.09	1.34 ^b	0.99	0.93	1.1	0.87	0.94	0.98	0.94
Social sciences	1.22	1.48 ^c	1.13	0.94	1.29	0.86	1.22	1.30	1.20
Supervisory status									
Nonsupervisor	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Supervisor	1.03	0.84 ^c	1.12	1.24 ^c	1.00	1.36 ^c	1.18 ^d	0.85	1.33 ^c
Manager	0.78 ^d	0.68 ^b	0.84	0.76	0.68 ^b	0.79	0.92	0.68 ^b	1.07
Executive	0.47 ^b	0.59 ^b	0.41 ^b	0.66 ^d	0.62 ^c	0.66	0.76 ^d	0.70 ^d	0.78
<i>Experience/tenure</i>									
<5 y public health practice experience	0.96	0.93	1.00	1.1	1.31 ^b	1.04	1.05	0.93	1.09
<5 y public health management experience	1.30 ^d	1.28 ^c	1.29	1.36 ^c	1.12	1.46 ^d	1.26 ^b	1.17 ^d	1.27 ^c
Plans to retire within 5 y	1.12	0.99	1.18	1.11	1.00	1.15	0.9	1.01	0.86
<i>Age, y</i>									
≤40	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
41-60	0.98	0.96	0.99	0.95	0.93	0.96	1.03	0.93	1.05
>60	0.78	0.87	0.75	0.75	0.78 ^d	0.74	1.06	0.83	1.15
<i>Education/training</i>									
Certified in public health	0.99	0.91	1.03	1.03	0.87	1.09	0.69 ^c	0.63 ^d	0.70 ^c
Public health degree (MPH/DrPH)	1.11 ^d	1.06	1.14	0.85 ^d	0.85 ^c	0.85	1.01	1.10	0.91
<i>Satisfaction</i>									
Burnout Index	1.27 ^c	1.44 ^b	1.22	1.21 ^d	1.44 ^b	1.14	1.68 ^b	1.64 ^b	1.65 ^b
Satisfied/very satisfied with									
Job overall	1.18	1.09	1.21	0.94	1.14	0.85	1.06	1.07	1.09
Organization	1.41	1.30 ^b	1.46	1.47 ^d	1.20 ^c	1.60 ^d	1.18 ^d	1.41 ^b	1.06
Pay	1.14 ^d	1.13 ^d	1.15	0.91	0.99	0.89	1.08	1.05	1.09
Job security	0.72	0.89	0.68	0.9	0.97	0.90	1.00	0.97	0.99
<i>Department characteristics</i>									
Employed by									
State health agency	Reference	...	...	Reference	...	...	Reference	...	...
Local health agency	1.23 ^b	...	...	1.30 ^b	...	...	1.14	...	...
State's governance classification									
Centralized	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Decentralized	0.85 ^d	0.85 ^d	0.83	0.92	0.92	0.88	0.78 ^b	0.87 ^c	0.76 ^d
Shared or Mixed	0.83 ^c	0.85 ^d	0.82	0.91	0.90	0.89	0.83 ^b	0.85	0.82 ^d
Health and Human Services region									
1 and 2	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
3	0.74	0.87	0.66	0.76	1.06	0.65	1.65	0.98	2.14
4	0.7	0.89	0.61	0.74	0.97	0.64	1.57	0.92	2.08

(continues)

TABLE 5

Odds Ratios From Logistic Regression for Likelihood of Having a Skills Gap in 3 Separate Financial Competency Areas^a (Continued)

Predictor Variable	Program and Service Delivery			Agency Funding			Business Planning		
	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies	All	State Health Agencies	Local Health Agencies
5	0.83	1.05	0.74	0.97	1.04	0.90	2.42	1.15 ^c	3.34
6	0.68	0.85	0.60	0.76	0.93	0.67	1.64	0.91	2.17
7	0.91	1.39 ^c	0.74	0.68	1.05	0.55	2.04	1.33 ^b	2.53
8	0.92	1.17	0.80	0.83	1.06	0.71	2.06	1.17 ^d	2.65
9	0.83	1.03	0.73	0.8	0.99	0.71	1.98	1.08	2.65
10	0.85	1.06	0.76	0.9	1.04	0.84	2.05	0.91	3.00
Constant from regression model	0.34 ^b	0.19 ^b	0.51 ^d	0.38 ^c	0.20 ^b	0.66	0.08 ^b	0.16 ^b	0.08 ^c
n (model sample size)	23 410	9448	13 962	25 087	10 062	15 025	23 644	9425	14 219

^aModels include data only for respondents reporting that a given financial skill was applicable to their position.

^bP < .001.

^cP < .01.

^dP < .05.

their financial skills. There is no reason to suggest that this was the case here. Second, while a major focus of this study was exploring whether training core competencies are improving the financial skills of the public health workforce, it is not possible to determine whether any individual respondent was subject to these specific interventions. Finally, while regression models could control for other observable factors, they are associative and not causal in nature.

Conclusion

Meaningful effort has been undertaken to improve the financial competencies and skills of the public health workforce. Findings from PH WINS of state and local public health professionals suggest mixed results in terms of the progress that has been achieved to date. Small pockets of the workforce at both state and local departments report expert or proficient skills, often in managerial or executive positions where financial skills may be exceptionally important. Receiving public health training—which is where the main effects of workforce training initiatives may be disproportionately felt—appears to be correlated with greater financial proficiency and fewer financial skills gaps. These are undoubtedly positive findings. Yet some areas remain in need of additional progress. Having CPH certification did not appear to be positively associated with financial skills or proficiencies. The local public health workforce also tended to have slightly lower levels of proficiency than its state-level counterparts. Sizable portions of the public health

Implications for Policy & Practice

- Concerted efforts have been undertaken to strengthen the financial skills and competencies of the public health workforce. Yet little empirical data have been able to conclusively show whether or not the workforce at the state and local levels are financially proficient.
- PH WINS data show mixed results in terms of the progress that has been achieved to date. Managers, supervisors, and those with public health degrees tend to have higher levels of proficiency and fewer financial skills gaps.
- Persons who we might expect to have been subjected to revised financial training approaches—newer public health practitioners and managers, younger individuals, and those with a CPH—did not consistently report higher financial skills.
- Overall, there are both areas of notable strengths and areas in need of further improvement in terms of the financial competency of the state and local public health workforce.

workforce also do not view financial skills as relevant to their current positions and therefore do not perceive these skills as important. This may potentially understate the true size of the skills gap across the public health workforce. As some of these individuals progress upward on the career ladder, they may enter roles that do require financial skills, so the extent to which portions of the workforce should or should not be subject to required financial trainings is an area in

need of additional consideration. Overall, there are both areas of notable strengths and areas in need of further improvement in terms of the financial competency of the state and local public health workforce.

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