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Top Training Needs of the Governmental Public Health Workforce

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ABSTRACT

Context: Workforce development in governmental public health has historically focused on discipline-specific skills. However, as the field of public health has evolved, crosscutting skills have become critical. The 2017 fielding of the Public Health Workforce Interests and Needs Survey (PH WINS) provides a national benchmark for gaps in crosscutting skills in state and local health departments.

Objective: The purpose of this article is to identify top areas of training needs in the governmental public health workforce using data from PH WINS 2017.

Design: PH WINS participants in state and local health departments were surveyed in fall 2017 using a Web-based platform. Balanced repeated replication weights were used to account for complex sample design.

Setting: Forty-seven state health agencies, 26 large city health departments, and a nationally representative sample of mid-to-large local health departments.

Participants: Permanently employed governmental public health staff.

Main Outcome Measures: Training needs were determined by combining self-reported skill importance and proficiency. Skills reported to be of high importance, and low levels of proficiency were coded as training needs. Focus area gaps were defined as having a training need in at least one skill in the focus area.

Results: The largest area of training need, regardless of supervisory status, was in budgeting and financial management (55%; 95% confidence interval [CI], 53-56), with a large gap also identified in systems and strategic thinking (49%; 95% CI, 47-50). There was some variation by supervisory status, with training needs for nonsupervisors in change management and in developing a vision for a healthy community for management.

Conclusions: The PH WINS training needs assessment provides the first nationally representative data on training needs for the state and local health department workforce. Across state and local health departments, there are common critical training needs essential for the current and future practice of public health.

KEY WORDS: governmental public health, training needs, workforce

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Public health workforce development, particularly the identification and provision of training, has historically been studied with a discipline/program-specific or skill-specific focus.[1-6] Numerous organizations have explored the capacity and skills of segments of the public health workforce, such as studies seeking to understand the ability of respondents to conduct epidemiologic investigations or disseminate findings.[7] This siloed approach to studying the governmental public health workforce's discipline-specific training needs and skill gaps echoes the funding mechanisms of state and local governmental public health agencies.[8]

Over the past decade, however, the demands on governmental public health agencies have been rapidly evolving.[1,8-10] The field has been and continues to be challenged by the dynamically changing needs of the populations they serve and by an aging

workforce facing growing issues with recruitment and retention.[11,12] Governmental public health agencies are also adapting to and aligning with national movements such as Public Health 3.0 and accreditation of public health agencies through the Public Health Accreditation Board.[9-11] It is in this context that there is a growing call for workforce development studies that address the current capacity and future needs of the public health workforce.

Despite this increased focus on the changing roles and demands of the governmental public health workforce, less is known about the crosscutting strategic and business skills of the governmental public health workforce that are necessary to be responsive to the dynamic practice environment.[1,10] The 2014 Public Health Workforce Interests and Needs Survey (PH WINS 2014) provided the first nationally representative data of state health agency workers, capturing the perspectives of more than 10 000 state health agency workers from 37 states related to their attitudes, morale, perspectives on their workplace environment, and their crosscutting training needs.[11] Top areas of training need included influencing policy development, understanding the relationships between policies and public health challenges, and assessing factors that influence specific public health problems.[11] While PH WINS 2014 provided critical baseline data about the state health agency workforce, these training needs were assessed broadly and generally and the assessment could not be applied toward the requirements of voluntary accreditation. Furthermore, the practice community found translating and acting on findings related to training needs from PH WINS 2014 to be challenging, particularly in operationalizing the areas in the general findings with the fundamental public health workforce skills that vary across career stages (nonsupervisor, supervisor/manager, executive, etc).[13]

To improve upon the training needs assessment in PH WINS 2014, the Association of State and Territorial Health Officials (ASTHO) and the de Beaumont Foundation convened a workgroup to redesign the training needs assessment for the 2017 fielding of PH WINS to ensure that the training needs assessment was useful, standardized, and built upon best practices. Members of the workgroup represented various stakeholders including state-based governmental public health practitioners, federal agencies, regional public health training centers, and other national partners that support public health workforce development to better identify and target the training and development need of the governmental public health workforce. The full list of workgroup members may be found in the Appendix. Through an iterative process, the training needs assessment in PH WINS 2017 was significantly updated to reflect the

most critical skills of the governmental public health workforce, with the goal of assessing the top training needs across 3 distinct self-reported workforce tiers: nonsupervisory, supervisory, and executive staff.* The purpose of this article is to describe the top crosscutting training needs across the governmental public health workforce.

Methods

Development of the 2017 PH WINS training needs assessment

Following an environmental scan to identify existing instruments, processes, and frameworks/competency models widely adopted in the field, 5 guiding frameworks or competency models were identified as central to development of the revised training needs assessment in PH WINS 2017. The environmental scan findings became the basis for an iterative review process that involved the identification and prioritization of the following 8 focus areas for inclusion in the training needs assessment:

1. Effective communication
2. Use of data for decision making
3. Cultural competency/competence
4. Budgeting and financial management
5. Change management
6. Systems and strategic thinking
7. Develop a vision for a health community
8. Cross-sectoral partnerships

As with prioritization of the focus areas, a systematic approach was used to identify, develop, and revise skills for inclusion in the instrument. Existing needs assessment instruments used in the field were examined to identify relevant and actionable skills aligning with the 8 focus areas in the 2017 PH WINS training needs assessment. Items were modified to reflect the nature of the governmental public health workforce and the expected progression of responsibility and application of skills across 3 self-reported workforce tiers from description and identification for nonsupervisory staff; application for supervisors/managers; and maintenance or oversight for executives. Cognitive testing was conducted on the adapted skill items, and items were revised accordingly. The 3-tier-specific assessments were pilot tested to evaluate instrument usability and flow. The final instrument included 2- to 4-tier-specific skills within

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*Supervisory levels are defined as follows: *Executive*: member of Senior Executive Service or equivalent; *Supervisor*: employee is responsible for employees' performance appraisals and approval of their leave but does not supervise other supervisors; *Manager*: employee is in a management position and supervises 1 or more supervisors; *Nonsupervisor*: employee does not supervise other employees.

each focus area. Table 1 shows each focus area and related skills by workforce tier.

Sample and analysis

PH WINS, in its second fielding in 2017, is a nationally representative survey of employees in state health agencies and medium to large local health departments. There are 4 primary domains in the survey: workplace engagement, the training needs assessment, emerging concepts in public health, and demographics. PH WINS 2017 was administered online between September and December 2017. Approximately 102 000 invitations to participate were sent across 3 survey frames: state health agency workers in 47 participating states; workers from 26 member agencies of the Big Cities Health Coalition, a project of the National Association of County and City Health Officials (NACCHO) representing leaders of health departments in large urban areas; and employees in a nationally representative sample of medium- to large-sized local health departments with at least 25 staff members and serving a population of at least 25 000. The survey was conducted as a census in participating health departments. In total, 47 604 individuals responded to PH WINS 2017, and after accounting undeliverable e-mails, the response rate was 47% across all frames.[14] The population studied in this analysis comprises the 41 817 of 43 697 respondents who indicated they were permanently employed by their health department, which represents 97% of all respondents. The full methods of PH WINS are detailed elsewhere in this supplement.[14]

The training needs assessment question stem, drawn from PH WINS 2014, asked respondents' self-perception of the importance of each skill in their day-to-day work and their proficiency in the specific skills in a matrix table. The 4-point Likert scale for importance ranged from not important to very important. The skill-level scale included 5 response options including not applicable, unable to perform, beginner, proficient, and expert. In line with previous PH WINS analyses, training needs were determined by combining self-reported skill importance and proficiency.[11] Self-perceived skill gaps were noted by a dichotomous variable. Respondents who reported a skill to be of high importance ("somewhat important" or "very important") to their current position and who also reported a low level of proficiency for that item ("unable to perform" or "beginner") were coded as having a skill gap for that skill.

Data were analyzed using Stata Statistics/Data Analysis, version 15 (StataCorp LP, College Station, Texas). To account for the complex PH WINS survey design, STATA survey commands employing replicate weights and balanced repeated replication for variance estimation were used to calculate point and variance estimates for specified statistics and cross-tabulations. Findings reported later include both point estimates and their associated 95% confidence interval (CI).

Results

Across all tiers, most respondents reported that each skill included in the instrument was somewhat important or very important to their day-to-day job (range is 66%-99% for all skills across all tiers). Table 2 displays the estimated percentage of respondents who reported at least 1 skill gap for at least 1 skill item within each focus area. Across all tiers, the focus areas with the highest self-reported training needs were budget and financial management (55%; 95% CI, 53-56), systems and strategic thinking (49%; 95% CI, 47-50), developing a vision for a health community (44%; 95% CI, 43-46), and change management (43%; 95% CI, 41-45). Furthermore, P values associated with the design-based F statistic based on the corrected weighted Pearson χ^2 statistic show there was a statistically significant difference in self-reported skills gaps across tiers for all focus areas.

Fifty-five percent of nonsupervisors (95% CI, 54-56) and 56% of supervisors/managers (95% CI, 54-58) reported a budget and financial management skill gap compared with 46% (95% CI, 40-51) of executives (Table 3). More than half of supervisors/managers also reported a systems and strategic thinking skill gap (56%; 95% CI, 54-57), with nearly half of executives (46%; 95% CI, 40-51) and nonsupervisors (46%; 95 CI, 45-48) also reporting skill gaps in that area. Among nonsupervisors, skill gaps were also frequently noted across change management (44%; 95% CI, 41-46) and developing a vision for a healthy community (43%; 95% CI, 42-45). Supervisors/managers also reported frequent skills gaps for developing a vision for a healthy community and change management (50%; 95% CI, 48-50; and 43%; 95% CI, 41-44, respectively).

Top training needs by skill

While the skills were tailored across workforce tiers, it is possible to make general observations about training needs across the tiers. The top 2 training needs for nonsupervisors and supervisors/managers, with more than 40% of respondents reporting skill gaps, were related to financial analysis methods and funding mechanisms, with 41% and 42%, respectively, of respondents in those tiers also reported a skill gap related to agency business plans (Table 3). Nearly a third

TABLE 1

PH WINS 2017 Skill Items by Focus Area and Tier

Focus Area	Nonsupervisor	Supervisor/Manager	Executive
Effective communication	Effectively target communications to different audiences	Communicate in a way that different audiences can understand	Communicate in a way that different audiences can understand
	Communicate in a way that persuades others to act	Communicate in a way that persuades others to act	Communicate in a way that persuades others to act
Data for decision making	Identify appropriate sources of data and information to assess the health of a community	Identify appropriate sources of data and information to assess the health of a community	Ensure the use of appropriate sources of data and information to assess the health of a community
	Collect valid data for use in decision making	Use valid data to drive decision making	Use valid data to drive decision making
	Identify evidence-based approaches to address public health issues	Apply evidence-based approaches to address public health issues	Ensure the application of evidence-based approaches to address public health issues
Cultural competency/ competence	Describe the value of a diverse public health workforce	Support development of a diverse public health workforce	Develop a diverse public health workforce
	Support inclusion of health equity and social justice principles into planning for program and service delivery	Incorporate health equity and social justice principles into planning for programs and services	Incorporate health equity and social justice principles into planning across the agency
	Deliver socially, culturally, and linguistically appropriate programs and customer service	Implement socially, culturally, and linguistically appropriate policies, programs, and services that reflect the diversity of individuals and populations in a community	Ensure the implementation of socially, culturally, and linguistically appropriate policies, programs, and services that reflect the diversity of individuals and populations in a community
Budgeting and financial management	Describe financial analysis methods applicable to program and service delivery	Use financial analysis methods in managing programs and services	Use financial analysis methods in making decisions about programs and services across the agency
	Describe how public health funding mechanisms support agency programs and services	Identify funding mechanisms and procedures to develop sustainable funding models for programs and services	Leverage funding mechanisms and procedures to develop sustainable funding models for the agency
	Describe the value of an agency business plan	Implement a business plan for agency programs and services	Design a business plan for the agency
Change management	Describe the influence of internal changes on organizational practices	Modify programmatic practices in consideration of internal and external changes	Manage organizational change in response to evolving internal and external circumstances
	Assess the external drivers in your environment that may influence your work	Assess the drivers in your environment that may influence public health programs and services	Assess the drivers in your environment that may influence programs and services across the agency
Systems and strategic thinking		Integrate current and projected trends into strategic planning for programs and services	Integrate current and projected trends into organizational strategic planning
	Describe how social determinants of health impact the health of individuals, families, and the overall community	Build cross-sector partnerships to address social determinants of health	Influence policies external to the organization that address social determinants of health
	Participate in quality improvement processes	Apply quality improvement processes to improve agency programs and services	Create a culture of quality improvement at the agency or division level
	Describe your agency's strategic priorities, mission, and vision	Implement an organizational strategic plan	Ensure the successful implementation of an organizational strategic plan

(*continues*)

TABLE 1			
PH WINS 2017 Skill Items by Focus Area and Tier (*Continued*)			
Focus Area	**Nonsupervisor**	**Supervisor/Manager**	**Executive**
Develop vision for healthy community	Describe the value of community strategic planning that results in a community health assessment or community health improvement plan	Apply findings from a community health assessment or community health improvement plan to agency programs and services	Ensure health department representation in a collaborative process resulting in a community health assessment or community health improvement plan
	Describe the importance of engaging community members in the design and implementation of programs to improve health in a community	Engage community members in the design and implementation of programs to improve health in a community	Ensure community member engagement in the design and implementation of programs to improve health in a community
	Describe your role in improving the health of the community served by the agency	Assess how agency policies, programs, and services advance population health	Advocate for needed population health services and programs
Cross-sectoral partnerships	Engage community assets and resources to improve health in a community	Identify and engage assets and resources that can be used to improve health in a community	Negotiate with multiple partners for the use of assets and resources to improve health in a community
	Collaborate with public health personnel across the agency to improve the health of the community	Engage in collaborations within the public health system, including traditional and nontraditional partners to improve the health of a community	Build collaborations within the public health system among traditional and nontraditional partners to improve the health of a community

Abbreviation: PH WINS, Public Health Workforce Interests and Needs Survey.

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of executives reported a skill gap related to funding mechanisms and agency business plans, and a third of executives reported a skill gap around influencing policies external to the organization that address social determinants of health. Respondents across tiers also reported skill gaps related to strategic planning, drivers that influence public health programs and services, and engagement of community members in the design and implementation of community programs.

Discussion

The field of governmental public health has been shifting from delivery of clinical services toward policy and systemic changes, including partnering with and across sectors, to address existing and emerging public health challenges. This shift requires significant changes in the practice of public health and the requisite skills needed by the workforce.[8,15] It is

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TABLE 2									
Estimated Percentage of Self-reported Skill Gaps Among Permanent Employees for Each Focus Area Overall and by Workforce Tier									
			Workforce Tier						
	Overall		**Nonsupervisors**		**Supervisors/ Managers**		**Executives**		**Significant Differences[a]**
Focus Area	**%**	**95% CI**	**%**	**95% CI**	**%**	**95% CI**	**%**	**95% CI**	
Budget and financial management	55	53-56	55	54-56	55	52-59	46	41-51	2, 3
Systems and strategic thinking	49	47-50	46	45-48	53	47-59	48	46-50	
Developing a vision for a healthy community	45	43-46	43	42-45	48	45-51	35	32-39	1, 2, 3
Change management	43	41-45	44	42-46	43	42-45	28	24-33	2, 3
Cross-sectoral partnerships	38	36-39	37	36-39	39	36-42	28	24-32	2, 3
Cultural competency/competence	31	29-34	29	27-32	35	31-40	32	28-36	
Data for decision making	28	27-29	29	24-30	27	24-30	20	18-23	2, 3
Effective communication	18	17-19	19	19-20	19	19-20	9	7-12	2, 3

[a]1, statistically significant difference at P < .05 between nonsupervisors and supervisors/mangers; 2, statistically significant difference at P < .05 between nonsupervisors and executives; 3, statistically significant difference at P < .05 between supervisors/managers and executives.

TABLE 3
Percentage and 95% Confidence Interval Estimates for Top Self-reported Skill Gaps Among Permanent Employees by Workforce Tier

	Skill	n	%	95% CI
Nonsupervisors with skill gap	Describe financial analysis methods applicable to program and service delivery	29 377	45	44-46
	Describe how public health funding mechanisms support agency programs and services	31 804	44	42-47
	Describe the value of community strategic planning that results in a community health assessment or community health improvement plan	29 273	42	40-44
	Describe the value of an agency business plan	27 232	41	37-46
	Describe the influence of internal changes on organizational practices	29 923	39	37-41
	Participate in quality improvement processes	31 146	37	34-39
	Describe the importance of engaging community members in the design and implementation of programs to improve health in a community	26 885	34	32-37
	Assess the external drivers in your environment that may influence your work	28 189	34	32-36
	Describe the importance of engaging community members in the design and implementation of programs to improve health in a community	26 885	34	32-37
	Engage community assets and resources to improve health in a community	24 982	31	27-35
Supervisors/managers with skill gap	Use financial analysis methods in managing programs and services	12 528	42	41-44
	Identify funding mechanisms and procedures to develop sustainable funding models for programs and services	12 710	42	39-46
	Implement a business plan for agency programs and services	12 228	41	38-45
	Assess the drivers in your environment that may influence public health programs and services	11 494	38	37-39
	Integrate current and projected trends into strategic planning for programs and services	11 945	38	34-41
	Implement an organizational strategic plan	12 065	37	34-40
	Assess how agency policies, programs, and services advance population health	11 135	37	34-40
	Engage community members in the design and implementation of programs to improve health in a community	10 032	36	34-38
	Apply findings from a community health assessment or community health improvement plan to agency programs and services	10 024	36	33-38
Executives with skill gap	Influence policies external to the organization that address social determinants of health	1 217	33	28-38
	Design a business plan for the agency	1 174	31	27-35
	Leverage funding mechanisms and procedures to develop sustainable funding models for the agency	1 198	31	26-37
	Use financial analysis methods in making decisions about programs and services across the agency	1 005	26	22-30
	Advocate for needed population health services and programs	942	26	22-30
	Incorporate health equity and social justice principles into planning across the agency	974	25	22-28
	Assess the drivers in your environment that may influence programs and services across the agency	961	25	20-30
	Integrate current and projected trends into organizational strategic planning	887	22	18-27
	Ensure community member engagement in the design and implementation of programs to improve health in a community	818	22	19-27
	Negotiate with multiple partners for the use of assets and resources to improve health in a community	810	22	18-26

(*continues*)

TABLE 3
Percentage and 95% Confidence Interval Estimates for Top Self-reported Skill Gaps Among Permanent Employees by Workforce Tier (*Continued*)

	Skill	n	%	95% CI
Nonsupervisors with skill gap	Effective communication			
	Effectively target communications to different audiences	13 707	14	13-16
	Communicate in a way that persuades others to act	14 175	14	13-15
	Data for decision making			
	Identify appropriate sources of data and information to assess the health of a community	17 723	21	19-24
	Collect valid data for use in decision making	13 758	14	12-16
	Identify evidence-based approaches to address public health issues	18 670	22	20-23
	Cultural competency/competence			
	Describe the value of a diverse public health workforce	13 943	17	15-18
	Support inclusion of health equity and social justice principles into planning for program and service delivery	19 670	25	23-28
	Deliver socially, culturally, and linguistically appropriate programs and customer service	13 737	15	13-16
	Budget and financial management			
	Describe financial analysis methods applicable to program and service delivery	28 009	45	44-46
	Describe how public health funding mechanisms support agency programs and services	30 393	44	42-47
	Describe the value of an agency business plan	25 895	41	37-46
	Change management			
	Describe the influence of internal changes on organizational practices	28 618	39	38-41
	Assess the external drivers in your environment that may influence your work	26 941	34	32-35
	Systems and strategic thinking			
	Describe how social determinants of health impact the health of individuals, families, and the overall community	22 140	29	26-32
	Participate in quality improvement processes	29 850	37	34-40
	Describe your agency's strategic priorities, mission, and vision	25 312	27	26-29
	Developing a vision for a healthy community			
	Describe the value of community strategic planning that results in a community health assessment or community health improvement plan	28 040	42	40-44
	Describe the importance of engaging community members in the design and implementation of programs to improve health in a community	25 734	35	32-37
	Describe your role in improving the health of the community served by the agency	18 629	21	18-34
	Cross-sectoral partnerships			
	Engage community assets and resources to improve health in a community	23 716	31	27-35
	Collaborate with public health personnel across the agency to improve the health of the community	23 955	28	26-61
Supervisors/managers with skill gap	Effective communication	3 528	9	8-10
	Communicate in a way that different audiences can understand			
	Communicate in a way that persuades others to act	4 517	12	11-13
	Data for decision making			
	Identify appropriate sources of data and information to assess the health of a community	7 123	23	21-24
	Use valid data to drive decision making	5 107	14	13-15
	Apply evidence-based approaches to address public health issues	5 873	18	16-19

TABLE 3
Percentage and 95% Confidence Interval Estimates for Top Self-reported Skill Gaps Among Permanent Employees by Workforce Tier (*Continued*)

	Skill	n	%	95% CI
	Cultural competency/competence			
	Support development of a diverse public health workforce	6 215	19	17-20
	Incorporate health equity and social justice principles into planning for programs and services	9 169	30	29-31
	Implement socially, culturally, and linguistically appropriate policies, programs, and services that reflect the diversity of individuals and populations in a community	7 328	23	21-24
	Budget and financial management			
	Use financial analysis methods in managing programs and services	12 083	42	41-44
	Identify funding mechanisms and procedures to develop sustainable funding models for programs and services	12 255	43	41-46
	Implement a business plan for agency programs and services	11 526	42	39-44
	Change management			
	Modify programmatic practices in consideration of internal and external changes	9 429	30	28-32
	Assess the drivers in your environment that may influence public health programs and services	10 849	0	35-39
	Systems and strategic thinking			
	Integrate current and projected trends into strategic planning for programs and services	11 501	37	35-40
	Build cross-sector partnerships to address social determinants of health	9 558	33	32-35
	Apply quality improvement processes to improve agency programs and services	10 282	30	28-32
	Implement an organizational strategic plan	11 388	38	36-40
	Developing a vision for a healthy community			
	Apply findings from a community health assessment or community health improvement plan to agency programs and services	9 654	35	33-37
	Engage community members in the design and implementation of programs to improve health in a community	9 677	35	34-37
	Assess how agency policies, programs, and services advance population health	10 764	38	35-41
	Cross-sectoral partnerships			
	Identify and engage assets and resources that can be used to improve health in a community	9 685	34	32-35
	Engage in collaborations within the public health system, including traditional and nontraditional partners to improve the health of a community	8 785	30	28-32
Executives with skill gap	Effective communication			
	Communicate in a way that different audiences can understand	197	5	4-6
	Communicate in a way that persuades others to act	251	6	4-10
	Data for decision making			
	Ensure the use of appropriate sources of data and information to assess the health of a community	582	15	13-18
	Use valid data to drive decision making	278	7	5-9
	Ensure the application of evidence-based approaches to address public health issues	548	14	12-17
	Cultural competency/competence			
	Develop a diverse public health workforce	513	13	11-16

(*continues*)

TABLE 3
Percentage and 95% Confidence Interval Estimates for Top Self-reported Skill Gaps Among Permanent Employees by Workforce Tier (*Continued*)

Skill	n	%	95% CI
Incorporate health equity and social justice principles into planning across the agency	974	25	22-28
Ensure the implementation of socially, culturally, and linguistically appropriate policies, programs, and services that reflect the diversity of individuals and populations in a community	649	16	13-20
Budget and financial management			
Use financial analysis methods in making decisions about programs and services across the agency	1 005	26	22-31
Leverage funding mechanisms and procedures to develop sustainable funding models for the agency	1 198	31	26-37
Design a business plan for the agency	1 174	31	27-35
Change management			
Manage organizational change in response to evolving internal and external circumstances	651	16	14-19
Assess the drivers in your environment that may influence programs and services across the agency	959	25	20-27
Systems and strategic thinking			
Integrate current and projected trends into organizational strategic planning	874	22	18-27
Influence policies external to the organization that address social determinants of health	1 217	33	28-38
Create a culture of quality improvement at the agency or division level	710	18	14-22
Ensure the successful implementation of an organizational strategic plan	642	16	12-21
Developing a vision for a healthy community			
Ensure health department representation in a collaborative process resulting in a community health assessment or community health improvement plan	708	20	16-25
Ensure community member engagement in the design and implementation of programs to improve health in a community	806	22	19-26
Advocate for needed population health services and programs	931	25	22-30
Cross-sectoral partnerships			
Negotiate with multiple partners for the use of assets and resources to improve health in a community	799	22	18-26
Build collaborations within the public health system among traditional and nontraditional partners to improve the health of a community	715	19	16-22

critical that the state and local governmental public health workforce, as the key player in promoting and protecting the health and well-being nationwide, is proficient not only in traditional public health skills but also in crosscutting strategic skills to address this evolving approach to public health practice.[10] While previous research primarily focused on discipline-specific skills for specific professions within health departments, this study using PH WINS 2017 data provides a comprehensive national picture of both broad categories and specific strategic skills needed by the workforce, and the current self-reported state of gaps in the workforce's skills. Staff likely have expertise in their programmatic and scientific areas, but the data

make clear that there are significant, systemic gaps in skills and public health training in key areas. While it is heartening that the majority of the workforce, regardless of the setting and supervisory level, identified nearly all of the skills in PH WINS as important for their day-to-day work, the large percentages reporting gaps in critical skills limit the field's ability moving forward to protect and advance population health.

The public health landscape is evolving, and with increased emphasis on the interrelationships of other systems on health, the workforce needs to be agile and skilled in collaborating and working across sectors to address the social determinants of health. However, the current workforce self-reports significant gaps in

the skills needed to negotiate this changing landscape. Gaps in change management and systems and strategic thinking skills, particularly among those in supervisory and executive positions within health departments who are often setting the vision and culture for their agencies, point to potential challenges in realizing the future direction of public health as envisioned in Public Health 3.0.[8] As the chief health strategists for their departments, it is essential that executives are equipped with the skills needed to work across sectors, including the health care system, to take action to improve community and population health systematically and proactively; significant self-reported gaps exist in policy development, cross-sectoral partnerships, systems and strategic thinking, and change management, all of which are critical for the role of chief health strategist.

More than half of the workforce self-identified training needs in at least one budgeting and financial management skill, which is consistent with previous research on gaps in the business skills of the workforce and the need for financial management competencies for the public health workforce.[16,17] In the current era of limited financial resources, it is essential that budgeting and financial management skills, particularly related to the description and application of financial analysis methods and identification and leveraging of a variety of funding mechanisms, are emphasized and developed in the current and future workforce to ensure a maximization of those resources. With new opportunities and methods of maximizing funding, it may be challenging to leverage these creative or innovative uses of funding with limited proficiency related to budgeting and financial management across all segments of the workforce.[18]

The training needs assessment in PH WINS 2017 provides the first national and nationally representative data on self-reported training needs for the state health agency and local health department workforce—from health department to health department, across state and local health departments, there are common critical skill gaps. The results from this assessment point to the need for a specific and targeted national workforce training agenda, as the top areas of training needs remain consistent regardless of supervisory status and regardless of setting as presented elsewhere in this supplement. While there are a number of training needs assessments in the field that are specialized in nature, limited funds for training and the clear alignment of training needs across all segments of the workforce suggest that efficiencies of scale should be leveraged to align and identify common direction for a national training agenda for these strategic skills, as echoed by other research in the field.[19]

Academic, training, and practice partner organizations involved in the provision of training for the current workforce should prioritize the identification and development of relevant training opportunities using principles of and best practices for adult learning that are specific to the field of governmental public health in the top areas of training needs. Partners in schools and programs of public health training the future public health workforce should focus on the development of crosscutting strategic skills in addition to the technical skills of specific disciplines in public health. As leaders in state and local health departments, health officials can support training and growth in their current workforce and invest in recruiting and retaining well-trained staff and support development of current staff to advance skills when promoting from within. It is critical that national leaders in public health with a responsibility to promote and protect the health and well-being of the nation ensure that the workforce is well equipped to address the emerging and evolving challenges of public health and that the nation's health agencies are working at their optimal level to ensure that healthy agencies can lead to healthy people.

Limitations

There are several limitations to consider in interpreting the results of this study. The data presented are nationally representative but reflect the responses of the state and local health departments that participated in the survey and may not be reflective of state and local health departments that did not participate, including smaller local health departments that did not meet the inclusion criteria for the survey as described elsewhere in this supplement. In addition, if individual respondents were different from nonrespondents within participating state health agencies and local health departments, nonresponse bias could have occurred.

Another limitation to this study is that the training needs assessment reflects self-reported importance and proficiency in skills by respondents and is not necessarily indicative of job performance. However, research has shown that in some cases of self-assessment of skills, proficiency is often overestimated by those who have limited proficiency, which may indicate that there are in fact even more widespread training needs than identified in the results.[20]

Conclusion

These findings identify a number of areas of gaps in crosscutting skills that, along with technical and discipline-specific skills, are essential for the current and future workforce to be able to address evolving

Implications for Policy & Practice

- The 2017 fielding of PH WINS provides a national benchmark for crosscutting training needs for the state and local governmental public health workforce.

- The largest areas of training need for the workforce are in budgeting and financial management, systems and strategic thinking, change management, and developing a vision of a health community.

- Areas of training need persist regardless of supervisory status.

- Given the consistency in training needs, public health leaders should focus on developing these skill areas throughout the workforce.

challenges in public health. With nationally representative data on training needs for the state and local health department workforce from PH WINS 2017, these findings suggest that there are opportunities for state health agencies and local health departments, as well as partners in the field, to prioritize staff development through training on budgeting and financial management and systems and strategic thinking.

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Appendix

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