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Public Health Workforce Development During and Beyond the COVID-19 Pandemic: Findings From a Qualitative Training Needs Assessment

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ABSTRACT

Context: The Region V Public Health Training Center (RVPHTC) serves the public health workforce in Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. An important tool in priority-setting workforce development is the training needs assessment (TNA), which is vital to identifying and addressing the capacity-building needs of the public health workforce.

Program: In 2021, we conducted semistructured qualitative interviews with key partners in the local, state, and tribal health workforce.

Implementation: Findings reflect the results of 23 interviews administered from March to May 2021. Questions solicited in-depth input related to key training gaps identified in our 2020 quantitative TNA; the impact of COVID-19 on the public health workforce; general needs, including preferred training modalities; needs by audience type; and the current capacity for public health agencies to support student development.

Evaluation: Key training needs of the public health workforce identified by the 2021 TNA include the strategic skills domains of (1) resource management; (2) change management; (3) justice, equity, diversity, and inclusion; and (4) effective communication. The first 3 domains were also noted as having the greatest training need in our 2020 quantitative TNA of local health department leadership.

Discussion: The COVID-19 pandemic highlighted the need for training in effective communication in new ways and the continued need for training support in the skill domains prioritized in the 2020 assessment. Findings demonstrate the need for capacity building around crosscutting skills and the intersection of strategic skill domains if the field is to be prepared for future threats to public health.

KEY WORDS: capacity building, strategic skills, training, workforce development

The governmental public health workforce has long experienced disinvestment, especially in the past decade.[1-4] In 2017, the Public Health Workforce Interests and Needs Survey (PH WINS) found that 47% of the workforce intended to retire within the next 5 years or leave for other reasons within the next year.[4,5] Following this trend, it is estimated that as of 2021, an additional 80 000 full-time equivalent positions (representing an 80% increase)

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The authors thank Isabelle Birt, MPH(c), for her contributions to data preparation and the partners in Region V that informed the assessment activities. The authors also thank Angela Beck, PhD, MPH, for her leadership of the Region V Public Health Training Center during this study. Finally, the authors thank the participating organizations and individuals for providing valuable insight into the training and workforce needs of the staff they serve.

The Region V Public Health Training Center is supported by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) under grant no. UB6HP31684 Public Health Training Centers ($924 899). This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the US government.

The authors declare no conflicts of interest.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (http://www.JPHMP.com).

Human Participant Compliance Statement: *The University of Michigan Health Sciences and Behavioral Sciences Institutional Review Board (IRB) judged this study exempt from IRB oversight (HUM00195443).*

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DOI: 10.1097/PHH.0000000000001524

are needed across the state and local governmental public health workforce to fully implement the Foundational Public Health Services, let alone pandemic response capacity needs.[1] Recruitment and retention efforts are especially important when considering the need to diversify the workforce to represent the population and best engage communities in culturally appropriate services that lend to health and racial equity.[6,7]

The COVID-19 pandemic has exacerbated the challenges facing the public health workforce. Early studies document poor mental health outcomes, such as symptoms of posttraumatic stress disorder[8] and burnout,[9] among public health practitioners during the pandemic. Possible causes for this include shifting focus from normal duties to COVID-19 response activities, working increased hours, experiencing real or perceived job-related threats, and other factors.[8] Although recognized as essential, the workforce presently faces substantial churn.[10-12] Of particular concern is the turnover of local and state health department officials, with more than 300 having resigned, retired, or been fired between April 2020 and September 2021.[11] This raises questions about what skills public health leaders at all levels need to be successful in this practically and politically intense climate.[12,13]

The federally funded Region V Public Health Training Center (RVPHTC), housed at the University of Michigan School of Public Health, aims to advance the skills of the current and future public health workforce to improve population health outcomes. The RVPHTC serves approximately 500 local health departments (LHDs) in HHS Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin) through the provision of training for professionals and student development opportunities. In the spring of 2020, just before COVID-19 reached pandemic status, we conducted a quantitative training needs assessment (TNA), findings of which are described elsewhere.[14,15] The 2020 TNA surveyed local health officials across Region V to determine their leadership perspectives on the workforce development needs of LHD staff. The priority training themes identified were budgeting and financial management, change management, and cultural competency. The present study serves to follow up on those findings with a qualitative TNA conducted in 2021 during COVID-19 pandemic response. The aims of the 2021 TNA were 2-fold: (1) to engage other workforce development perspectives in reflecting on key training gaps identified in the 2020 assessment, and (2) to learn more about emerging needs, including the impact of the COVID-19 pandemic.

Methods

In March-May 2021, we conducted interviews with 23 representatives from 16 public health departments, associations, agencies, and organizations from Region V (see Table 1). The participant population consisted of the following:

- *State health department representatives*, including an LHD coordinator (focused on the LHD workforce) and/or a human resources/workforce development coordinator for the state agency (focused on the state health agency workforce);
- *State Associations of County & City Health Officials (SACCHO) and state affiliate Public Health Association (PHA) representatives*, including leadership of organizations that serve LHDs from each state; and
- *Tribal health organization representatives*, including tribal health agencies or organizations.

Individual key informants were invited to participate based on their professional roles and recommendations from the RVPHTC's partner network. Participants responded to questions from their leadership perspective to indicate the training needs of the segment of the public health workforce relevant to their work (eg, state health department staff, LHD

TABLE 1
Participant Type by Geographical Jurisdiction

	State						
Participant Type	**Illinois**	**Indiana**	**Michigan**	**Minnesota**	**Ohio**	**Wisconsin**	**Regional**
State health department	0	0	2	4	2	1	0
SACCHO/PHA	3	2	2	0	3	1	0
Tribal health agency/organization[16]	0	0	1	0	0	1[a]	1
Total	**3**	**2**	**5**	**4**	**5**	**3**	**1**

Abbreviations: PHA, Public Health Association; SACCHO, State Associations of County & City Health Officials.

[a] *Also serves Illinois, Michigan, and Minnesota.*

staff served by their agencies, and professionals working in tribal health). The intent was to solicit feedback and recommendations on the training needs of frontline staff, mid-level managers, and leadership across jurisdictions of public health practice so we may strengthen the capacity of the local and regional public health workforce. In Region V, there are 501 LHDs whose characteristics vary widely by both population served and staff size (see Supplemental Digital Content Appendix Table 1, available at http://links.lww.com/JPHMP/A934).[14,17]

The study team conducted semistructured interviews over Zoom using tailored survey instruments for each participant type (see Supplemental Digital Content Interview Guide, available at http://links.lww.com/JPHMP/A935). For all participants except tribal health organization representatives, we first asked about the impact of COVID-19 on the workforce, followed by questions on training themes from the 2020 TNA, differences in needs by audience type, and student development. We asked about COVID-19 first to reduce potential focus on the pandemic in subsequent questions. For tribal health organization representatives, we first asked about general training needs, followed by the impact of COVID-19. Tribal health organizations were not asked about training themes from the 2020 TNA since they were not included in that assessment's study population.

Each session included 1 interviewer and at least 1 notetaker. Interviews were recorded and transcribed using Zoom. Data coding and analysis occurred from June to August 2021. Two coders utilized a data reduction process, capturing major themes together following each session. One coder then consolidated codes into themes and examined patterns using matrices in NVivo 12. Participant responses were coded by common themes across questions asked. A given response may align with multiple themes, so participant counts presented in the "Results" section are not mutually exclusive across themes or subthemes. Findings are presented at the regional level and are deidentified. The University of Michigan Health Sciences and Behavioral Sciences Institutional Review Board (IRB) judged this study exempt from IRB oversight (HUM00195443).

Results

Participants

In total, 23 interviews were conducted with public health representatives across the 6-state region (see Table 1). One interview was conducted with 2 individuals at once (23 interviews with 24 people). Eight state health department participants represented 4 states. Eleven SACCHO/PHA participants represented 5 states. Two tribal health agency/organization participants represented 2 states, and 1 tribal health agency represented Region V. Of the 9 state health department representatives in the study, 3 served as a coordinator or liaison to the development of the LHD workforce, 5 focused on workforce development of staff internal to the state health agency, and 1 served as a liaison to tribes in the state. All 11 SACCHO/PHA representatives focused on LHD workforce development.

Themes

Participants were asked about current and future needs of the workforce of their organization and of the field as a whole, as well as development opportunities available and needed. Their responses were reduced to 5 areas:

1. *Training gaps from 2020 TNA:* resource management; change management; and justice, equity, diversity, and inclusion (JEDI)
2. *COVID-19 challenges and needs:* past, present, and future
3. *General skill and training needs:* where trainings are sought out from, what skills are still needed, what barriers to training exist, and preferred training modalities
4. *Difference in needs by audience type:* mid-level managers, LHDs of varying sizes, and accredited/accreditation-seeking agencies
5. *Student development:* staff capacity for taking on interns and desired skills of interns

Within and across these areas, training gaps aligned with 4 strategic skill domains for public health professionals[18]: (1) resource management; (2) change management; (3) JEDI; and (4) effective communication (see Table 2 and Supplemental Digital Content Appendix Table 2, available at http://links.lww.com/JPHMP/A936, for illustrative quotes of each domain).

Resource management

Participants were asked to describe training needs related to resource management, which we defined during interviews as the effective use of both financial and human resources.[18] Two training need themes and subthemes within this domain emerged from their responses:

- *Managing financial resources*: developing and defending budgets, securing grants and other types of funding, diversifying funding streams,

TABLE 2
Strategic Skill Gaps Among the Region V Public Health Workforce

Strategic Skill Domain With Training Need	Theme	Illustrative Quote
Resource management	Developing and managing human resources	"You have a lot of . . . promotion from within, of individuals who are subject matter experts . . . but might not necessarily be promoted with the right competencies to be effective at management and supervision."
Resource management	Managing financial resources	"There is a dynamic to this boom and bust cycle, where federal dollars are flying in. How do you get them out the door as fast as you can in a way that's as effective and efficient as possible? . . . if I thought there was a skill that is lacking, it might be how to clearly and effectively advocate for long term infrastructure, support of public health."
Change management	Assessing and addressing change	"So when we begin thinking about change management, you need to understand clearly who the leadership is, where is their head around change management. Because if their head is in a place that says, 'change is bad' . . . or 'we don't need change,' then trying to have discussions around change management is going to be really difficult. The problem that gets created then is that as new folks, young folks come into the arena and they are ready for change, you see that tension gets created there."
Justice, equity, diversity, and inclusion	Strengthening JEDI performance management	"We can declare racism is a public health crisis and then what? . . . There are plenty of people out there who want to see an equitable world, they just don't know how . . . . Part of [the issue] is that the approach to addressing our own implicit biases hasn't been done very well . . . . We have to get better at describing what the actual benefit is. 'So what? Why do we have to do this?' is a response that I think we're going to get. We really have to craft ways to get people to understand what a difference it makes."
Effective communication	Strengthening external-facing communication efforts	"If you can't communicate well with people or communities, you really don't have much as far as an impact . . . . How do we reach out to communities that are relatively different from us? How do we resonate with them? . . . How can we communicate and work with communities and give them what they need . . . [even if] it may not be directly related to public health? . . . if you think about social determinants of health, how can we make the connection, how can we come in and be viewed, how can we be accepted into their inner circle?"
All domains		"How are we setting the stage for [public health professionals], not just our incoming folks? That's really important for the development of our next leaders in terms of, sort of the strategic thinking leadership. How do we engage partners? . . . How do we tell the story of public health? How do we advance and advocate for this profession to have the infrastructure and support that it needs?"

Abbreviation: JEDI, Justice, equity, diversity, and inclusion.

and establishing or managing a financial system; and

- *Developing and managing human resources*: investing in recruitment (eg, expanding hiring pools, forming a student pipeline), investing in retention (eg, equitable advancement), developing management skills, supporting Lean human resources operations (eg, resource sharing), offering professional development opportunities, and providing mental health supports.

Many participants stated that both subthemes of this domain had been an issue prior to COVID-19 but were exacerbated by the pandemic. When state health department and SACCHO/PHA representatives were directly asked about resource management training gaps, participants reported the need to develop financial (n = 12 sites) and human resources (n = 9 sites) management skills. When asked about training needs for particular audiences, tailored resource management training for LHDs of different sizes (n = 7 sites) and resource management training for mid-level managers (n = 10 sites) were mentioned. While a question around resource management was not directly asked of them, representatives from 2 tribal health organization sites mentioned the need to develop human resources management skills (eg, professional development and recruitment/retention).

Change management

Participants were asked to discuss training needs around change management, which we defined during interviews as having adaptive leadership skills and/or scaling programs up and down in response to the environment.[18] The following 3 training need themes and subthemes within this domain emerged from their responses:

- *Assessing and addressing change:* understanding drivers of change, employing data-driven decision-making (eg, assessing change through formal or informal needs assessments), and implementing change management principles (eg, having the flexibility to alter or scale programs, employing trauma-informed practices, and achieving readiness);
- *Strengthening adaptive leadership skills*: having the authority for/influence on decision making, focusing on transition planning, investing in recruitment/retention, and addressing generational differences and needs of staff; and
- *Forming and maintaining effective partnerships*: navigating political environments, engaging in cross-sectoral work, building trust, and achieving stakeholder buy-in.

When state health department and SACCHO/PHA representatives were directly asked about change management training gaps, participants mentioned the need to strengthen skills around assessing and addressing change (n = 11 sites). Participants mentioned the need to strengthen adaptive leadership skills among the workforce regardless of staff type or professional tier (n = 11 sites) and the need to build skills among the workforce around forming and maintaining effective partnerships for navigating changing circumstances (n = 8 sites). When asked about training needs for particular audiences, tailored change management training for LHDs of different sizes (n = 2 sites) and change management training for mid-level managers (n = 5 sites) were mentioned. Although a question around change management was not directly asked to tribal health organization participants, 2 sites mentioned the need for staff to strengthen adaptive leadership skills (eg, communication and conflict management skills) among new managers.

Justice, equity, diversity, and inclusion

We asked state health department and SACCHO/PHA representatives about training needs around JEDI; however, we did not define *justice*, *equity*, *diversity*, and *inclusion* individually during interviews. Training needs within this domain include developing both knowledge and application skills at the individual and system levels. Two training need themes and subthemes within this domain emerged from participant responses:

- *Implementing general JEDI principles*: gaining knowledge on health equity, cultural competence/cultural humility, and implicit bias; strengthening skills around application of JEDI principles; supporting a diverse workforce and responding to diverse needs; and communicating about equity, such as for accreditation; and
- *Strengthening JEDI performance management:* assessing the impact of JEDI efforts on different populations and assessing organizational cultural competence.

When state health department and SACCHO/PHA representatives were directly asked about JEDI training gaps, participants from 12 sites mentioned the need to implement, and in some cases simply learn, basic JEDI concepts (see Supplemental Digital Content Appendix Table 2, available at http://links.lww.com/JPHMP/A936). Of these 12, when asked about training needs for LHDs of different sizes, 2 sites stated JEDI is not perceived as a top priority in rural areas and 1 site mentioned the need for basic JEDI training (eg, cultural humility) for mid-level managers to engage with members of the community. When asked directly about JEDI training needs, support is needed around JEDI-specific performance management activities (n = 5 sites). While tribal health organization representatives were not directly asked about JEDI training needs, 1 site mentioned the need to implement JEDI principles (eg, cultural competency training and the inclusion of tribal voices with those outside of tribal communities). One site indicated the need to raise awareness of tribal culture and tribal health authority among LHD and state health agency professionals.

Effective communication

While no participants were directly asked about communication training needs, most participants indicated gaps in this domain in the context of other areas, including within the 3 domains previously discussed. Two themes and subthemes within the effective communication domain are in need of skill development:

- *Strengthening external-facing communication efforts:* strengthening community and partner engagement efforts (eg, building relationships with community leaders to serve as trusted messengers), standardizing messaging for unified

campaigns with partners, conveying accurate information, and combating misinformation to the public; and
- *Strengthening internal communications:* establishing and maintaining communication practices and processes among teams.

When all participants were directly asked about the impact of COVID-19, the need to strengthen external-facing communications became evident (n = 6 sites). Within this subtheme, the following were mentioned as some areas in need of support: communicating with the public (n = 4 sites); navigating personal attacks (n = 2 sites); shaping the public perception of public health (n = 2 sites); and developing/disseminating resources for communication leaders (eg, public information officers, health officers) (n = 1 site). When state health department and SACCHO/PHA representatives were asked about training needs for mid-level managers, 3 sites mentioned the need to develop effective communication skills, particularly around shaping the public perception of the field, advocating for governmental funding, and navigating political environments. When all participants were asked about training needs postpandemic, 11 sites indicated a training need in this skill domain.

Regarding training modality, participants were given a list of examples and asked which they thought were preferred by the workforce they serve. Responses suggested that since modality preferences are shaped by a variety of factors (eg, profession/specialty, comfort with online platforms), it is necessary to meet training needs through a variety of formats (eg, webinars, self-paced trainings, discussion-based sessions, communities of practice, written resources, conferences, and workshops), both remotely and in person when possible.

Discussion

The present study met its 2 goals to (1) obtain more detailed information about key training gaps identified in the 2020 assessment and (2) assess current training needs, including those shaped by the COVID-19 pandemic. The public health workforce of Region V and across the nation alike has experienced many challenges in the face of COVID-19; some training and workforce development needs have changed, while others have become more apparent. In the 2020 TNA, the areas with the greatest training needs among the LHD workforce in Region V were budgeting and financial management, change management, and cultural competency. While the 2020 TNA was administered before the onset of the pandemic, most participants in the present assessment indicated that skill development is still needed in the key areas identified previously (especially because many noted training had been stalled by pandemic response). Effective communication emerged as an additional key training need. These priority domains also emerged when participants were asked about staff capacity for taking on student interns and the desired skills of interns; however, discussion of these findings and implications for student development are beyond the scope of this article.

The need for training and workforce development around multiple strategic skill domains, themes, and topic areas demonstrates the need for capacity building around crosscutting skills. Training needs related to resource management and change management overlapped and intersected in many ways. First, knowledge and skills around financial management (eg, understanding how, when, and why to adjust a budget) connect to being able to alter programs and scale operations in response to changing circumstances. Second, training staff regardless of level to be adaptive leaders can equip current and future managers to communicate with diverse teams and audiences through challenging situations.

The present study demonstrates that effective communication skills are not only helpful for strengthening resource management and change management but also critical for achieving JEDI. Many participants stated that challenges brought on by both COVID-19 and efforts to address structural racism have highlighted the need for communication training among the public health workforce. Communicating accurate information quickly, clearly, and concisely is necessary in the context of COVID-19 (internally for response efforts, externally for sharing information and dispelling misinformation) and for efforts to put formal declarations of Racism as a Public Health Crisis into practice.[13,19,20]

Energy must be focused on the intersection of these skill domains if the field is to be prepared for future threats to public health. The RVPHTC will do so by developing portfolios of various training modalities around crosscutting skills. For example, a podcast episode, webinar, and curated resources around trauma-informed resilience-oriented principles for public health supervisors developed in partnership with the National Council for Mental Wellbeing will help address resource management (managing staff, retention), change management (adaptive leadership skills), effective communication (internally between mentors and mentees), and JEDI (supporting a diverse workforce). Findings from the present TNA will continue to drive training and workforce development efforts in our 6-state region, particularly for those engaged in governmental public health.

Limitations

There are several potential limitations to this qualitative TNA. This study included a small number of interviewees and may not be representative or transferable beyond Region V. This TNA was conducted primarily for practical use in the development of training by the RVPHTC and secondarily to inform the work of others. Furthermore, the explanatory study design of following up on our quantitative 2020 TNA with this qualitative study is a common approach to mixed-methods research.[21] While confirmation bias in our analysis in this follow-up study is possible, the study populations between the 2 assessments were distinct, and the professional positions of the key informants in the present study and their proximity to our shared public health workforce audience mean their perspectives provide meaningful insight. In addition, the triangulation of data from both TNAs with each other and with other national sources such as PH WINS supports the credibility of findings.[14,22]

The context of the pandemic and recent social justice issues may have also introduced bias into responses. Rather than attempt to discern training needs irrespective of current events, the purpose of the study was to dig deeper into training priorities identified prior to the pandemic and to learn how the present context is shaping needs moving forward. Still, we asked state health agency and SACCHO/PHA representatives questions about COVID-19 first before reflecting on themes from the 2020 TNA in order to give intentional space to both lines of inquiry. We asked these same participants to reflect on the specific priority themes from the 2020 TNA, which may have produced bias to focus on those content areas throughout the interview. To allow space for additional emerging themes, we were again intentional in asking explicitly about other training and workforce development needs. Finally, we did not specifically ask tribal health organization participants about the 2020 TNA priority training themes, since that assessment had focused on local governmental public health. That aspects of the training themes arose during their interviews support their relevance across the public health workforce.

Conclusion

The strategic skills that were prioritized as training needs in 2020 and again in the present study align with trends in recent updates to a variety of models used in practice to define the public health workforce, the field, and its trajectory. This includes the de Beaumont Foundation's Strategic Skill Domains updated in 2021,[18] revisions to the Council on Linkages Between Academic and Public Health Practice's Core Competencies for Public Health Professionals in 2021,[23] and the anticipated national Public Health Accreditation Board's Standards Version 2022.[24] Of note, the 10 Essential Public Health Services were also revised in 2020 to embed equity within the Core Functions of assessment, policy development, and assurance.[25] Essential Service 8 is to "build and support a diverse and skilled public health workforce." There is national momentum toward this: the American Rescue Plan Act of 2021 provides funding to bolster health department staffing and launch a Public Health AmeriCorps,[26] and the Coronavirus Aid, Relief, and Economic Security (CARES) Act provides resources to expand community health worker capacity.[27]

To successfully maximize these opportunities to recruit and retain a diverse public health workforce, especially one interested in governmental health department settings, will require systemic and organizational change made possible by individuals who are skilled in adaptive leadership.[3,18,28] The necessity of cultivating the 4 skill domains that emerged in our study is further supported by the literature written by academicians and practitioners alike during the pandemic.[3,7,12,13,20] While Halverson et al emphasize the need for "political acumen,"[12(pS12)] Joneigh Khaldun, then medical director for the state of Michigan, states that public health leaders need "to be skilled communicators, fearless stewards and promoters of data and science, and unwavering motivators of teams."[13(pS14)] Our findings suggest several ways that the RVPHTC and other training providers can support the development of these competencies among the current and future public health workforce.

Implications for Policy & Practice

- Four skill domains continue to be priority training needs among the public health workforce in Region V during and beyond the COVID-19 pandemic: resource management; change management; JEDI; and effective communication.
- Workforce development and training efforts should focus on the intersections of the strategic skill domains, as there is overlap in their need and application.
- Staff of all levels should receive training in these areas to support effective career advancement and succession planning in governmental public health agencies.

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