New NACCHO LHO Training Program: Final Report

By the Center for Public Health Systems
School of Public Health, University of Minnesota

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NACCHO
National Association of County & City Health Officials

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Prepared for NACCHO by the Center for Public Health Systems
School of Public Health University of Minnesota

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Background and Methods

Background

From 2008-2012 the National Association of County and City Health Officials (NACCHO) ran a training program for new local health officials (LHOs) called Survive and Thrive. Survive and Thrive provided new LHOs (health department leaders with two or fewer years of experience) with the knowledge and skills needed to be successful in their position.[1] Though the program ended, the need remained: public health workforce levels have been declining for decades, exacerbated by the aftermath of the Great Recession[2] and COVID-19,[3] and 20% of the overall workforce are planning to retire within the next five years,[4] creating a potential progressive loss of experienced local public health practitioners.

A similar program in today's public health environment would look different than it did in 2008. Based on program evaluations, Survive and Thrive was successful in training new LHOs, but the needed knowledge and skills for new LHOs has changed since the program ended and have been shaped by the COVID-19 pandemic. Thus, in considering whether and how to restart the program, a formative evaluation is critical to identify how to best implement it within the context of stakeholders – in this case, the new LHOs and those who work with them.[5] Therefore, NACCHO and the Center for Public Health Systems (CPHS) partnered to conduct an exploratory mixed-methods study[6] for the purpose of 1) assessing which content areas and learning formats are the most effective in developing the skills needed by new LHOs to succeed in their new roles and 2) assessing the feasibility and desirability of a program for new LHOs that builds the skills they need to succeed in their new roles.

Methods

The Institutional Review Board at University of Minnesota approved this study, which was conducted by CPHS staff in partnership with NACCHO staff. The overall approach was exploratory mixed methods[6] where we conducted qualitative individual interviews that informed a follow-up nationally-representative quantitative survey. Additionally, we conducted secondary data analysis from the 2017 and 2021 Public Health Workforce Interests and Needs Survey (PH WINS)[4,7] and an environmental scan. Together, the collected and analyzed data informed the program recommendations and program evaluation plan.

Interviews

We interviewed 22 stakeholders (n = 5 past Survive and Thrive Coaches, n = 5 past Survive and Thrive Fellows, n = 7 new LHOs, n = 4 experienced LHOs, n = 1 other stakeholder) using video conferencing software. New and experienced LHOs were defined as those having been an LHO for two years or fewer and five years or more, respectively. One CPHS staff conducted each interview, and another assisted in taking notes. The interviewer followed virtual interview recommendations such as assessing the technology, having a contingency plan if technology fails, and conducting a practice session.[8]

NACCHO sent a recruitment email to potential participants that included the purpose of the study, interview details, and a scheduling link. Interested participants used the link to schedule an interview with the study lead researcher from CPHS who then followed up with the participant and provided the video conferencing information. At the scheduled date and time, the lead researcher (interviewer), assistant researcher, and participant met using the video conferencing software and the interviewer ensured technology was working properly. The interviewer began by reminding the participant about the purpose of the interview, asking if they had questions, obtaining verbal consent, and following a semi-structured interview guide. After obtaining verbal consent, the interviewer recorded the interview both through the video conferencing software and a back-up audio recorder, and both researchers took notes. Interviews lasted about an hour. At the conclusion, the participant was thanked for their time and the interview was considered complete.

Interview Guide

CPHS created the interview guide using existing LHO literature[1-3] and past Survive and Thrive evaluations. CPHS provided the draft interview guide to NACCHO leadership, the NACCHO workforce workgroup, and other LHO experts for feedback. Their feedback was incorporated into the finalized guide.

Interviewer Training

The lead CPHS researcher led a training for the assistant researcher[8] that consisted of background knowledge of public health workforce, LHOs, the purpose of the interviews, the guide, and training on technology used for the interviews. At the end of the training, the researchers practiced interviewing to test all the technology, familiarize themselves with the guide, troubleshoot challenges, and ask any questions.

Data Analysis

Interview transcripts were automatically created by the video conferencing software. Researchers checked the recordings for errors by listening to the audio and revising the transcript as needed. Transcriptions were then uploaded into NVivo QSR International Pty Ltd. (2020) NVivo (released in January 2022), https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home for analysis.

The lead researcher and assistant researcher created and applied four domains (a priori codes) to each transcript ("Training Content," "Training Structure," "Training Evaluation," and "Barriers"). During analysis, the researchers created a fifth domain ("LHO Connection and Network") due to its high prevalence throughout the transcripts. They also revised "Barriers" into "Participant Barriers" and "Facilitators." Deductive coding was used within each a priori code.[9] The deductive coding used eclectic coding consisting of multiple, subsequent rounds of descriptive and in vivo coding followed by thematic analysis.[10] Each theme and sub-theme were based on the domains and cut across all participants. Participants may have discussed a topic multiple times and within different contexts. To maintain participants' original intent, those topics were coded into the theme of their intended context (though no double coding occurred). For example, a participant discussed how the training must be voluntary with participants wanting to be there as participants that were forced to complete the previous Survive and Thrive program did not do well. The first part of this was coded within facilitators and the second part was coded in barriers.

Survey

CPHS and NACCHO staff used the individual interview results to inform their development of the quantitative survey. The survey was designed and fielded as a probability-based, stratified sample, which was representative nationally. The sample was drawn proportionately based on the size of population served by the agency, with a slight oversample for large jurisdictions. NACCHO emailed the web-based survey to LHDs. The survey was in the field for about two weeks in May 2022. Participants received four reminders about five days apart and then one final reminder the day before the survey closed.

Analysis

Of the 913 LHOs invited to take the survey, 222 interacted with the survey. We dropped one observation that was a duplicate response. We then dropped an additional 37 responses from the analysis because these LHOs did not participate in the survey questions. This left a final analytic sample of 184 LHOs. Descriptive statistics are presented for both the unweighted and weighted survey responses. Post-stratification weighting was employed to account for survey design and non-response. All data cleaning and analyses were conducted on STATA 17 software (StataCorp. 2021. *Stata Statistical Software: Release 17*. College Station, TX: StataCorp LLC).

Secondary Data Analysis

The data collected came from multiple sources and were cleaned and analyzed in STATA 17 software (StataCorp. 2021. *Stata Statistical Software: Release 17*. College Station, TX: StataCorp LLC). First, the research staff analyzed participants' responses from 2017 and 2021 PH WINS. We only included participants who indicated they had an executive level position and whose setting was local government. Participants were then divided into three categories, those who had been in their positions for fewer than 2 years, 2-5 years, and more than 5 years, in 2017 and 2021. The domains we examined were training gaps, perceptions, satisfaction, stress, prevalence of leaving, reasons for staying, and reasons for leaving. The second source of data came from trainings and resources recommended by key informant interviewees, which were analyzed by field experts. The third data source was from NACCHO membership database that compared the LHOs on file in the membership database on 7/28/2021 versus 4/26/2022. Anyone who had a status of "changed" was included in the analysis. It should be noted that the data are only at the organization-level and thus some LHOs may have simply switched from being an LHO at another agency. The dates are based on when the data were pulled from the database and not when the LHO took office and therefore do not include new or planned local health departments.

Environmental Scan

An environmental scan of leadership development practices in place for public health and those promoted by other sectors (e.g., regulatory compliance officers) was conducted using key word searches in Google Scholar and Scopus (using Publish or Perish platform), TRAIN, public health training centers, and universities offering public health leadership degrees (listed in ASPPH). Each search was tracked, and relevant documents and programs were listed within a Google Sheet that contained data collection columns including year, data type, document quality (with reason), Relevance for new LHOs (with reason), evaluation of program (if applicable; with reason), document description, and overall key takeaway(s).

Interview Results

Overall description of participants

Geographically, the participants were in 9 of the 10 Health and Human Services regions. Please see Table 1 for a numerical distribution of the participants across the 10 regions.

Table 1.1. Numerical distribution of participants across Health and Human Services Regions.

Health and Human Services Region	States Represented	n
1	ME, NH, VT, MA, RI, CT	0
2	NY, NJ	3
3	DE, MD, PA, WV, VA	3
4	KY, TN, MS, AL, GA, SC, NC, FL	3
5	MN, WI, IL, IN, MI, OH	3
6	NM, TX, OK, AR, LA	1
7	NE, KS, IA, MO	1
8	MT, ND, SD, WY, UT, CO	3
9	CA, NV, AZ, HI	2
10	AK, WA, OR, ID	1

The most salient themes and subthemes (discussed by at least half of the participants) are included in the tables below with a discussion describing additional context.

Domain 1: LHO Connection and Networking

This domain was defined as overall connection and networking by LHOs (new and experienced). Twenty-one participants discussed content that was included in this domain.

Table 1.2. Domain 1 themes, theme definitions, subthemes, subtheme definitions, and example quotes.

Theme (n)	Theme Definition	Subtheme (n)	Subtheme Definition	Example Quote
All LHOs connect with people and resources (n = 21)	All LHOs (new and experienced) need assistance with resources and connections to other LHOs to work together. Ideally these connections would happen systematically when a new LHO is hired.	New LHOs need peer support network (n = 8)	Peer support network help new LHOs	"for me having a network has been really what's made all the difference…most new local health directors don't have that platform"
		NACCHO workgroups (n = 5)	NACCHO workgroups are one avenue to increase connection for LHOs.	"NACCHO work groups [are a] great opportunity to grow and enhance your knowledge."
		LHO networking call (n = 4)	Regular, structured networking call for all LHOs	"local health director networking call [would help me] meet other people and talk about their issues and get help."
Importance of LHO networks (n = 14)	The importance of networks during an LHO's tenure.	LHOs need support (n = 3)	Networks (peer-support and others) help provide LHOs with the needed support to succeed in their position.	"incoming group of health directors that need support"
		Sharing of ideas and KSAs (n = 3)	LHO networks allow for diffusion of KSAs beyond training.	"you can get to know people, then you know you're sharing your business card, and then you can go back and say hey what do you do for this?"

LHO Connection and Networking Discussion

Every participant discussed the importance of LHOs connecting with other LHOs and LHO resources. Many also discussed the need for this connection to occur automatically and systematically, such as by creating and maintaining a database or one-stop-shop of LHOs and LHO resources (e.g., places to find supplemental training) and ensuring every new LHO is connected into the network. Participants mentioned using State Association of County and City Officials (SACCHOs) and the NACCHO Profile Study to assist with these efforts. Additionally, participants mentioned the need for organized activities to help future (e.g., aspiring) and current LHOs connect such as networking sessions at conferences, virtual networking sessions, and NACCHO workgroups.

Domain 2: Participant Barriers and Facilitators

This domain was defined as barriers and facilitators potential new LHOs may experience regarding participating in a new LHO training program. Twenty-two participants discussed content that was included in this domain. One participant discussed content within "barriers" but not "facilitators" and vice versa.

Table 1.3. Domain 2 themes, theme definitions, subthemes, subtheme definitions, and example quotes.

Theme (n)	Theme Definition	Subtheme (n)	Subtheme Definition	Example Quote
Barriers (n = 21)	Factors that are tangible, intangible, external, or internal that prevent LHOs from succeeding or completing training.	Time commitment (n = 21)	LHO does not have, or is not able to, commit the necessary amount of time to training. Competing priorities.	"you're doing multiple different jobs; you know to fit [in] a training is very difficult."
		External burdens (n = 17)	Event, responsibility, or circumstance that hinders an LHO's ability to participate in training. Jurisdictional differences or political environment.	"the biggest challenge, that comes to mind right off the bat is that each State is different."
		Internal burdens (n = 15)	Feelings, emotions, or beliefs that hinders an LHO's ability to start, participate, or complete training. Feeling overwhelmed, fear of failure.	"I don't want to let people know I don't know, because that might look like I'm a failure."
		Health Department leadership leaving or turnover (n = 12)	When multiple high level or core employees leave the LHO's health department before or right after they arrive, creating a void or vacuum for the LHO.	"I came in at you know, obviously a very tumultuous time with dealing with COVID [and] they hadn't had a permanent health officer and over a year."

		Limited LHO public health & supervising background (n = 12)	LHO does not have a background in public health and/or does not have experience in a leadership role.	"I didn't identify that I was going to have such a huge learning curve and some of these areas."
Facilitators (n = 21)	Factors that are tangible, intangible, external, or internal that assist or help LHOs succeed.	Limited LHO training available (n = 11)	When LHOs are motivated to participate in trainings relevant to their new positions because prior training has not been available or adequate.	"[I] didn't see anything out there, that was specific to new health officers."
		LHO Internal Motivators (n = 10)	Personal feelings, emotions, or beliefs that drive an LHO's actions.	"When you're new you want to be successful."

Participant Barriers and Facilitators Discussion

Almost all participants expressed the issue of not having enough time to commit to training. Many also discussed the external and internal burdens that they faced that made it more difficult to start or complete trainings. External burdens were predominantly around office or governmental politics, being pulled in multiple directions, and travel issues. Internal burdens were focused on personal feelings and emotions connected to the participants role as an LHO. Many expressed that LHOs want to succeed at their job and were hesitant, scared, nervous, or uncomfortable to take time away to complete a training early on in their time as an LHO. Additionally, participants mentioned feeling the need to know all the answers and to hit the ground running when starting their new position. A few mentioned a limited background in public health and staff supervision, and were unaware of the gap, as barriers to seeking training. About half of participants noted how the role of an LHO has changed since the COVID-19 pandemic. Most participants did not articulate how it had changed, though some stated reasons such as how more people are aware of public health and LHOs, which has shifted the conversation around public health and trust in science (often indicated being for the worse), and that LHOs are now more in their office than on the road traveling. About half of participants expressed that new LHOs don't know what they don't know, meaning they knew they probably had knowledge gaps or areas needing to be strengthened but weren't sure what they were. A few participants in smaller health departments mentioned the cost or financial burdens of attending a training program and that their department did not have enough staff to cover for absence of a director due to training.

Half the participants discussed the limited training currently available for LHOs as a facilitator or motivation for them to enroll in or apply for relevant training programs in the future. Almost half of the participants discussed their internal motivators such as wanting to be successful in their position and loving their community. Some discussed that LHOs need to want to be at the training and need to prioritize training to succeed. Others talked about using past knowledge and experience from other positions to facilitate their success. Participants explained that they often learned how to do their job "on the fly."

Domain 3: Training Content

This domain was defined as content participants identified as needed in a new LHO training program. Twenty-two participants discussed content that was included in this domain.

Table 1.4. Domain 3 themes, theme definitions, subthemes, subtheme definitions, and example quotes.

Theme (n)	Theme Definition	Subtheme (n)	Subtheme Definition	Example Quote
LHO personal development (n = 22)	Content around an LHO's personal development and growth	Work through public health politicization and divisiveness (n = 13)	Strategies and skills are needed for LHOs to deal with the unprecedented politicization and divisiveness around public health and the health officers themselves.	"public health's under assault and we have been for past year and a half and local health directors, and especially new local health directors haven't had to deal with the political vitriol that we deal with now"
		Behavioral health (n = 12)	Mental and behavioral strategies and skills to help LHOs succeed in their positions such as burnout mitigation, resiliency, stress management, work-life balance, and confidence building trainings.	"top of the list dealing with stress…if we can't succeed at home first, we can't succeed at this job either"
		Challenge navigation skills (n = 12)	Skill development relevant to helping LHOs navigate potential challenges such as teamwork and problem solving.	"everything you do all most of the problems that we have in public health or complex problems. We solve them through trans disciplinary teams"
		Life-long learning (n = 10)	Cultivating a desire for and creating habits that help LHOs continue to learn beyond the initial training.	"recognizing that I don't know it all, and when I do need to learn something, I figure out where I need to go to get that information."

		Increased LHO openness (n = 10)	Helping LHOs increase their comfort in new and uncomfortable spaces and situations.	"we've got to get in these rooms whether they're red, blue or purple whatever and get comfortable and so many people have not been doing that you know we've got to get braver I guess and not be afraid"
		Managing change (n = 9)	Using theories to develop knowledge and skills around managing change personally, internal to the agency, and external to the community.	"finding that line of introducing change, introducing new ideas, introducing my own leadership style, which was different um while still getting people on board who'd been used to one type of leadership"
Human resources (n = 22)	Content related to the business human resources side of being an LHO	Staff management (n = 16)	The importance of and skills related to hiring effective employees, gaining their trust, and documentation such as evaluations, firing, disciplinary.	"Work has fundamentally changed, and therefore the Labor market has fundamentally changed, and so…we want to be competitive and recruit talent like they're going to have to alter the way that public health practice actually plays out"
		Staff interaction (n = 14)	How to effectively interact with and direct staff with diverse backgrounds.	"Not having any experience or classes or training that grounds, you in being an effective supervisor"
		Staff support (n = 12)	Supporting staff, particularly after COVID-19, using evidence-based strategies such as trauma informed care and psychological safety.	"workforce, who is very stressed, a workforce who you know may have had a husband who lost a job, may have kids home, may have whatever it was and so that was a new aspect to me to have."

		Staff communication (n = 10)	Learning to effectively communicate with staff.	"you may be able to talk to one person in this way and they'll respond to that, but you may have to talk to another person in that way."
		Staff development (n = 10)	How to coach staff to build up their KSAs and develop into public health leaders.	"my job is not to make the decision it's to help them become better decision makers"
Day to day LHO operations (n = 21)	Content related to LHOs understanding their role, duties, and related technologies	Administration and management (n = 17)	Business related (non-human resource) administration and management aspects such as working with other departments, managing teams, managing different and conflicting priorities.	"leadership is one thing, but managing it is another and I don't think a lot of local health directors know the difference and we've got to differentiate between managing and leading, and what it means when you're the head of organization that's charged with supporting your community's health regardless of what the issues are."
Public health foundations (n = 21)	Content related to the foundations of public health including public health 101, needs assessments, data collection/analysis/interpretation.	Population health (n = 12)	How to support and advance health departments' population health efforts including health equity and social determinants of health.	"How do you actually advert advanced the work of public health and health equity in the context of this much larger bureaucratic system"
		Public health 101 (n = 9)	Ensuring all participants have a grounded understanding of public health.	"I've had to build those up a lot more to be successful and like a lot of that is based off of the foundational understanding of what public health is"

LHO relationships (n = 20)	Content related to the importance of and best practices within developing and maintaining relationships with multiple different people and entities an LHO may encounter	Community-at-large (n = 15)	LHO relationships specifically with the community including around community engagement, community conflict management, effective programming, and sharing power.	"how to make sure that the Community you represent, has a seat at that table how to increase inclusiveness, how to increase diversity, how do you know tackle these controversial subjects that come up in a way that is relatable to people and not alienating to people that invites people to join the conversation"
		Community leaders and authorities (n = 13)	LHO relationships with community leaders and authorities such as elected officials and health boards.	"how to connect with the decision makers in a way that your message comes across as important and valuable"
LHO interpersonal communication (n = 19)	Content related to the importance of and developing interpersonal communication skills	Communicating with diverse people and groups (n= 13)	Best practices and developing skills around engaging in conversations with various people and groups.	"how do you bring those two camps together in a way that helps you as a health officer develop a program that is inclusive addresses what you need to address but also has that awareness of those sensitive triggers that people are going to be not happy with, so that you can move find a path forward right because. You shut down conversation once you come into the table thinking no this is my stance, and this is what I'm going to do.
		Networking and reaching people (n = 11)	Creating networks and effectively reaching out to others.	"I had a lot of people to meet, and a lot of people needed to get to know me"

Leadership skills, styles, and theory (n = 18)	Content related to all things leadership including skills, styles, and theory	n/a	n/a	"theory of change is if we equip local health officials they'll be able to make better decisions and have more effective organizations."
Public health authority and governance structure (n = 17)	Content around the authorities of public health and all levels of government structures	n/a	n/a	"different States have different statutes and there's local policies versus you know local health department versus county health department versus state health department"
Public health modernization (n = 13)	Content around modernizing and bringing public health and departments into the future through strategic planning, Public Health 3.0, and increased efficiency	n/a	n/a	"If NACCHO's going to start up survive and thrive it's got to be all about the future and should be focused on the future and we're public health functions one five to 10 years from now"
Budgeting, financing, and projecting (n = 12)	Content and skill development around health department budgeting, financing, and forecasting especially as LHOs deal with shrinking resources	n/a	n/a	"finance piece, although I found that a little bit more challenging because everybody's financial processes and situations are a little bit different"

Training Content Discussion

The following knowledge, skills, and abilities (KSAs) were developed from participants' discussion within the different training content areas.

Recommended LHO personal development KSAs include:

- Being vulnerable within relationships
- Being assertive as a leader in the department and in the community
- Preventing and managing burnout
- Change management
- Protecting time for personal development
- Diversity, equity, and inclusion
- Establishing leadership
- Getting comfortable in new spaces, situations, rooms
- Goal articulation
- Knowledge transfer to other situations
- Learning from failure
- Learning on your feet
- Learning personal strengths
- Managing public health politicization and divisions
- Priority and expectations management
- Resiliency
- Soft skills (all were mentioned by participants)
- Taking risks
- Theory of change

Recommended human resources KSAs include:

- Collaborative environments
- Creating safe spaces
- Employee documentation/ evaluation
- Executive skills
- Hiring to complement LHO's skills and abilities
- Gaining staff trust
- Fostering open organizational communication
- Organizational culture
- Managing remote teams
- Managing underperforming employees
- Staff communication
- Staff leadership development
- Staff motivation
- Staff recruitment
- Staff relationships
- Staff support and well-being
- Trauma informed care
- Trusting staff
- Work laws (e.g., FMLA)
- Workforce development

Recommended day-to-day LHO KSAs include:

- Alignment with community assessments and public health core functions
- Innovative technology (e.g., data software, productivity, team management)
- LHO's role and responsibilities
- Management theories (e.g., Lean Management)
- Developing and implementing personal and departmental goals
- Program evaluation and monitoring
- Resource management
- Staff delegation
- Working with other departments

Recommended public health foundations KSAs include:

- Assessments (e.g., CHA, CHNA, CHIP)
- Communicable diseases
- Data collection, analysis, interpretation, reports
- Emergency preparedness and response
- Environmental health
- Equity integration
- Ethics
- Health disparities
- Health equity
- Health impact pyramid
- Population health
- Public Health 101
- Public health history (positive and negative)
- Role of public health
- Social determinants of health
- Social justice

Recommended LHO external relationships KSAs include:

- Community conflict management
- Community engagement
- Community interaction
- Community politics and issues
- Community unity
- Creating and building relationships
- Effective community programming
- Engaging non-traditional partners
- Gaining elected officials' support
- Knowing unwritten/hidden rules/situations
- Leveraging resources
- Power sharing with community
- Relationship between federal, state, and local
- Meeting and communicating with elected officials
- Teaching the value and role of LHOs and health departments
- Working with and running health boards
- Working with community stakeholders
- Science of relationships
- Stakeholder analysis

Recommended interpersonal communication KSAs include:

- Advocacy
- Clear, concise communication
- Communication with diverse people and groups
- Communication with critics
- Communication tools
- Compromise
- Conflict management
- Dealing with misinformation
- Education versus advocacy
- Elevator speeches
- Explaining the "why"
- Explaining data to others
- Get others in alignment
- Goal communication
- Humble inquiry
- Being the face and voice of the department
- Meaningful and resonant messaging
- Media communication
- Negotiation
- Non-threatening communication
- Presentation skills
- Problem solving
- Public communication
- Risk communication
- Simplification of complicated topics
- Social media
- Social skills
- Teamwork
- Understanding other perspectives
- Understanding others' needs
- Universal values
- Working with challenging people
- Working with others who disagree

Recommended leadership skills, styles, and theories KSAs include:

- Team leadership
- Team transformations
- Tuckman's stages of group development
- Leveraging others' skills (within and outside LHO's team)
- Adaptive leadership
- Health department expansion and restructuring
- Decision making and intelligence
- Historical and modern leadership theories
- Personality tests
- Transformative leadership
- Agile organizations
- Authentic leadership
- Finding common ground
- Leader responsibilities
- Organizational leadership
- Values based leadership

Recommended public health authority and governance structure KSAs include:

- Local, state, and federal government and health department structure and innerworkings
- Policy impacts and implications
- LHO authorities and boundaries
- Jurisdiction integration
- Health department governance
- Reporting structures
- Public health law
- Differences between health departments
- State statutes (similarities and differences)
- Local, state, and federal legislation
- Larger public health picture
- Public versus private sector

Recommended public health modernization KSAs include:

- Future of public health
- Health in all policies
- Increasing efficiency
- Infrastructure development
- National public health initiatives and frameworks
- Public Health 3.0
- Strategic planning
- Succession planning

Recommended budgeting, financing, and projecting KSAs include:

- Bringing in new funding and contracts
- Financial tracking mechanisms
- Funding oversight
- Governmental/public health finance and accounting
- Grants (local, state, federal)
- Grants/funding for workforce
- Insurance billing
- Public health and health department funding sources
- Working with tight and decreased budgets/resources

Other recommended KSAs include:

- Creating and following a work plan
- Differentials (e.g., resourcing, population)
- Experimental learning
- Finding commonalities between health departments and jurisdictions
- Goal setting
- Health department accreditation (Public Health Accreditation Board [PHAB] and others)
- Pandemic response
- Performance management
- PHAB standards and measures
- "Plan, execute, learn, pivot"
- Quality improvement
- Systems thinking and change
- Value of health department accreditation

Domain 4: Training Evaluation

This domain was defined as recommendations for different evaluation components of a new LHO training program. Twenty-one participants discussed content included in this domain.

Table 1.5. Domain 4 themes, theme definitions, subthemes, subtheme definitions, and example quotes.

Theme (n)	Theme Definition	Subtheme (n)	Subtheme Definition	Example Quote
LHO growth (n = 15)	The LHO can address issues, solve problems, or show leadership skills that they did not have before the program.	LHO knows how to apply KSAs and resources (n = 7)	A LHO can apply and use their new KSAs and knowledge of resources to events or challenges they are facing in their health department.	"have the tools and skills that I need when I need them."
		Increased LHO confidence (n = 4)	When an LHO has higher professional self-confidence after the program.	"need to be able to feel confident in terms of making strategic decisions."
Improved LHO networks (n = 10)	When an LHO improves their network of people they can contact or connect with.	LHO know who they need to talk to (n = 5)	The LHO knows who they need to, or want to, talk to when facing a specific issue, and can contact that person.	"They have like a net of people, a network of people, that they feel like they can pick up the phone and call."

Training Evaluation Discussion

Two thirds of participants discussed an LHO's personal growth as an evaluation metric. This growth included knowing how to apply KSAs learned in the training to their department's challenges, being better prepared for future hurdles, and overall increased comfort and confidence in their position. With this increased confidence in their role, more than a third of participants expanded on the idea that an LHO could be measured by the action that they take after the program. This action could be making a change at their health department, increasing, or continuing their involvement with NACCHO, or other related actions. Almost half of participants discussed growth of an LHO's network as a measure of program evaluation or success. Over a third also mentioned an improvement in LHO identification, attainment, use, and retention of resources to evaluate training. An individual-level measure mentioned included LHO retention in their position, and in the public health field overall after graduation from the program, and if they brought their new perspectives through with them to their future career. Possible types of program evaluation mention included before and after measurements of LHOs KSAs, a longitudinal evaluation of the KSAs used by LHOs after graduating the program, and measuring the health of the community an LHO works in. Program-based evaluations mentioned by about a quarter of participants included: LHO participation during the program, LHO overall satisfaction with the program, and continuous quality improvement during the program using participant feedback. There were a variety of proposed evaluation measures mentioned by participants around community impact including LHO's community understanding and engagement, community transformation, and increased health and trust of the health department by the community.

Domain 5: Training Structure

This domain was defined as suggested components of a new LHO training program. Twenty-two participants discussed content included in this domain.

Table 1.6. Domain 5 themes, theme definitions, subthemes, subtheme definitions, and example quotes.

Theme (n)	Theme Definition	Subtheme (n)	Subtheme Definition	Example Quote
Cohort Experience (n = 22)	How a cohort experience may positively impact the training and preferred design elements.	Cohort participants: Similarities within differences (n = 21)	Differences among participants are helpful to understand other experiences and other ways to do public health, yet LHOs gain more when with other LHOs who have more similarities than differences (e.g., geography, roles, health department size).	"there's value in still talking to people from different levels and talking to people from different. Different situation than you're in. That being said, it's also really helpful to talk to people that have like more similarities than you… however, it can get frustrating, at times"
		Enhanced LHO connections and relationships (n = 21)	Cohorts can help LHOs build national networks and support systems that allow for future peer learning, being soundboards, and broadening their perspectives.	"having that opportunity to kind of hear about things that are different and are going on and other places, I think, is really valuable because then, when it comes up for you, you know who you can go to, to pick their brain"

		Program content enrichment (n = 15)	Cohorts within a program enrich the content being taught by allowing peers to learn from each other and compare, contrast, and share experiences and perspectives.	"might ask a question that you never really thought of or they have a different perspective on doing things and because you have been so comfortable doing it this way…you introduced me to this and you realize there's a different way or that there's a concern you, you may not be aware of."
Coaching/mentoring experience (n = 21)	How a coaching or mentoring experience may positively impact the training and preferred design elements.	"Coaches are catalysts or conduits" (n = 20)	The manner in which coaches help LHOs expedite their growth and development within KSAs, assist with challenges, providing another perspective, providing, and connecting LHOs with resources, and help LHOs understand what to expect.	"someone who's been in their role for a while and you say hey I'm having this problem or hey I'm running into this and they can kind of point you in the direction of either what they've done or you know, a resource to connect with or where to look for information"
		Coach support of LHO (n = 17)	Coaches provide LHOs with support through building their confidence, helping through tough times, providing reassurance, and understanding their needs.	"step back a little bit, and take a deep breath. Understanding that right now you're feeling all this pressure, but what's the big picture here, and how does this particular issue fall into that big picture"

		Coach and LHO collectivism (n = 16)	Coaches learn from the program and LHOs as much as LHOs learn from the coaches and program.	"it was as much me teaching them and they were teaching me too"
		Coach and LHO connection (n = 16)	Ensuring coaches and LHOs connect and have the potential for long term relationship through them having similar backgrounds, styles, and communication preferences.	"that needs to be both agreed upon by both parties for it to work right, but if you can find the right individual to pair up with another individual where again they can develop some type of trusting relationship that's probably a good opportunity"
		Coach background (n = 15)	The types of background that are ideal for coaches include recent and extensive experience in local public health and understand the LHOs' communities.	"need someone who's been doing this longer than me who could like help me think about how I wanted to this thing in the health department."
		Coach attributes (n = 15)	Descriptions of coach personalities and attributes that are ideal, such as being willing, adaptable, approachable, committed, and open.	"it's a different skill set to just be a professional executive type coach and to be available for people who you know are newer at the game."

		Coach and LHO frequent, open communication (n = 11)	LHO able to easily contact coach so LHO can reach out when needed with questions, hold one-on-one conversations, and engage in casual check-ins.	"I have a question and it's not the time to a meeting, but I just pick up a phone in the car hey [name] this is my problem and what's your advice?"
Methodology (n = 22)	Recommendations around program methodology components.	Directly applicable to LHO position (n = 21)	Content and activities directly applicable to LHO's position, such as using a real-world approach, hands-on learning, and a project tied to their position.	"things being as busy as they are for everybody, I think it's one thing to get that initial contact and conversation but it's another to start to be able to go back to it and weave it into your day to day practice and so finding those ways to make that kind of reconnection easy and stable, I think, are really helpful because those are the you know the people and the resources that I tend to seek out again."
		Program barriers (n = 20)	Barriers the program may experience such as the LHO not having much public health experience, other external barriers, and identifying the numerous new LHOs.	"Training was a bit challenging because everyone was new, and so I had to seek out a lot of training on my own when I started in my new role just because nobody knew my role"

		Program facilitators (n = 16)	Facilitators that will benefit a new LHO training program such it being needed, people excited for the training, and components that would increase retention such as articulated time commitment, a signed agreement, and cost offsets.	"local health officials need this program they have got to find a way to fund and do this program forever going forward."
		Synchronous components (n = 19)	Recommended synchronous components included regular participant and coach check-ins, shadowing/site-visits, and large and small group discussions.	"other supportive things that happen to make that learning stick other follow ups that need to occur…have some webinars with breakout sessions, where you bring people together in a room"
		Virtual components (n = 19)	Recommended virtual components included coaching or cohort meetings, webinars, providing basic content; despite numerous barriers, these were still recommended since most people are used to virtual now and they are easier to fit into a schedule than travel.	"virtual makes things easy to like scale up and down where like maybe you spend like 10 or 15 minutes going over a concept, and then you have like breakout groups where people can kind of opt in to like what's the biggest thing that I'm trying to figure out in my job or my space right now and then they can kind of have like affinity groups."

		In-person components (n = 18)	Some type of in-person component was widely valued, such as using conferences (e.g., NACCHO Annual) to gather people and conduct in-person discussions, as it increases participant engagement and builds relationships and networks.	a lot of us have become used to the virtual training option, especially with COVID and there's several things about it that are good…but the one thing I kind of miss about the in person trainings are the ability to connect with the people in the room, and then you can shut yourself off from [distractions] whereas if you're in person you're pretty much you're there you're in front of the. person and you can relate to them and engage in conversation. So I feel like there's value in in the in-person types of things though I know it's not always possible."
		Asynchronous components (n = 14)	Asynchronous activities (e.g., homework, readings, online trainings, self-paced modules with activities, and videos) are beneficial as they allow for schedule flexibility and can provide on-demand specific skills content.	"the easiest thing these days is sort of some of those virtual and self-directed type of resources"

		Multi-stage program (n = 14)	LHOs in all stages and throughout the tenure of their career would highly benefit from training from aspiring to experienced LHOs.	"maybe there's some multi stage program where you're just one for the first two years and then you know, two to five years and then you know, if necessary, maybe even five or more years because I do think for many of us, it took us a decade or more before we understood our strengths and weaknesses"
		Flexible approach (n = 13)	Ideally the program would be flexible in nature, (e.g., by having core competencies with optional activities/content, tailoring content/groups based on participant goals, and being broadly applicable regardless of health department differences), to potentially allow for additional (or all) LHOs to take a training.	"having opportunities where it can be scaled so that it's applicable to 10 people or 100 people and, provide an experience that would at baseline be relevant to 100 people, but then they have the opportunity to opt into more…figuring out that balance of this is a mandatory part of this program versus this is for you, if you want it"

Training Structure Discussion

Cohort Experience

Overall, participants widely expressed support for a cohort structure, particularly to provide reassurance to new LHOs and create peer accountability within the program. They also discussed that differences within cohort groups can be helpful to understand different experiences, perspectives, and ideas of how to do public health; though similarities allowed participants to connect deeper through shared experiences and were more helpful to participants in terms of creating stronger networks, going deeper into content, and gain greater ideas to bring back to their own positions. These connections are critical to all LHOs as described in domain 1 and were reiterated when participants discussed how cohorts can facilitate, enhance, and expedite the development of those networks. The networks then lend to creating peer learning and facilitating participants being "soundboards" for each other. The networks created through cohorts are also able to be national in scope, so LHOs can meet others they may not typically have had the opportunity to in other platforms.

Coaching Experience

When discussing coaching/mentoring, 11 participants explicitly stated that it was a needed or helpful component of a new LHO training program. In particular, coaching/mentoring creates a "catalyst or conduit" through which participants grow and develop, providing a medium through which mentors provide LHOs with guidance/advice, help them find their path, serve as a sounding board for questions/challenges, and provide constructive feedback. Coaches/mentors also share KSAs, resources, and content with their mentees. Participants expressed that coaches/mentors help new LHOs understand what to expect (positives and negatives) by relating real-life experiences, talking through potential issues, and providing examples and context. Similar to the cohort experience, coaching/mentoring provides new LHOs with alternative perspectives for leading a department and solving problems, through verbally talking through problems or through in-person experiences such as shadowing. Coaches/mentors provide the new LHO with support that can build their confidence and help them through challenging times (personally and professionally). One of the unique aspects of coaching/mentoring is the reciprocal benefit for the LHO coaches/mentors such as learning from their mentees and the program. This occurs best when a strong relationship and connection is formed between the two participants, which occurs through strategic matching. Some participants recommended this matching occur by the mentee picking the coach while others advised against that and having an outside facilitator create the matches. Again, similar to cohort make-up, participants discussed a preference for matching based on similarities. This connection also occurs best when the coaches exhibit willingness, adaptability, commitment, approachability, openness, honesty, vulnerability, skilled listening, reliability, outgoingness, an ability to be judgment-free, and a passion for public health. Participants also recommended that coaches have recent, and extensive experience in local public health and either have a working understanding of or a willingness to learn about the new LHO's community and health department. Coaches/mentors also need to be able and willing to have frequent contact with their mentees, scheduling one-on-one conversations and being available and responsive for the mentee to reach out as needed. Lastly, a few participants also discussed barriers and facilitators. The barriers included lack of qualified applicants to be coaches (potentially due to recent LHO turnover), a heavy time

commitment, coach/mentor and participant disconnect, lack of engagement, and failure to listen to participants. There is also the risk that a stipend may distort a coach/mentor's motivations. These barriers could be mitigated by clearly articulating coach/mentor commitments and expectations prior to the start of the program and ensuring a shared commitment and understanding between the coach/mentor and participant.

Directly Applicable to LHO Position

The most vital component of a new LHO training program as described by participants is that all content and activities are directly applicable to their position in such a way that they could easily implement what they learn the next day. This can be achieved through focusing on a real-world approach, discussing how to apply the content/tools, hands-on learning out in the field, creating an independent action plan, connecting with and hearing from field experts who can explain processes/decisions, role-playing and skill practice, and ensuring adult learning principles are incorporated throughout. Program barriers and facilitators were also noted by participants. The largest barrier included the participants having limited experience with public health, thus creating a larger learning curve and possibly serving as the basis for other participant barriers discussed above. Participants also discussed the challenges LHOs experience in finding and accessing training, as well as challenges in identifying the numerous new LHOs who have recently entered the field. Despite these challenges, many participants explicitly stated that the training is needed, and they were excited to hear about a new LHO training program.

Synchronous, Asynchronous, Virtual, And In-Person Modalities

All four types of modalities identified by participants (synchronous, asynchronous, virtual, and in-person) had benefits (and challenges) and participants generally recommended using all four types. Synchronous components (either virtual or in-person) included regular check-ins with participants and coaches (to help establish and maintain relationships, keep participants on track and consistent, increase cohort cohesion, and ensure participants are not overwhelmed), shadowing or on-site visits with a coach or other experienced LHOs, and group discussions (using virtual breakout rooms, as small and large groups, to discuss challenges and work through examples and questions). Asynchronous components allow for schedule flexibility and self-pacing, which increase accessibility. Identified potential asynchronous components included online trainings, readings, videos, session recordings, and worksheets, which could be organized as modules with activities. Virtual components (which could be synchronous or asynchronous) were lauded as being more convenient for scheduling, and most people are now familiar with how to use them from their work during the pandemic. At the same time, virtual trainings inherently have more distractions and decrease person-to-person interactions, and the content may be retained less as compared to in-person trainings. Activities well-suited for this modality included regular cohort/coaching calls, webinars, and virtual networking. Lastly, many participants explicitly stated that in-person components are valuable and important since physical interaction increase participant engagement and builds stronger relationships and networks.

Multi-Stage Program

Participants also recommended a multi-stage program that includes training and networking programming for people who are on track to become LHOs, for new LHOs, and then for LHOs throughout their LHO tenure. The "pre" training helps rising leaders train and transition into the LHO position and may help them become effective LHOs quicker. The second timepoint is for new LHOs, for which participants said training needed to occur quickly after assuming the position. The program should aim to provide training to all new LHOs nationwide. Participants then recommended additional time points for more training, since it takes time for someone to know their strengths and weaknesses. For example, there could be more training after two years on the job, or when someone becomes an LHO at a different health department than the one where they started. These trainings could focus on broader public health and how to make their health department stronger.

Flexible Approach

Participants also strongly advocated for a new LHO training to be flexible. Flexibility could be achieved through using core competencies with optional activities or content, tailoring content, or creating groups based on goals/needs/experiences, is applicable regardless of one's health department structure. A flexible program could also lead to it being scalable – able to be implemented with small and large groups of fellows.

Other

Though fewer than half of the participants spoke about the need for program support and completion acknowledgment, those that did felt very strongly about these components, so we have included them in this discussion section. Several participants expressed a desire for support (potentially through NACCHO) for all participants (coaches and new LHOs). This included coach training and education to describe the role/responsibility of a coach, best practices for coaching/mentoring, and a coordinator to assist with logistics, challenges, and provide overall support and guidance to participants and the program. A few participants spoke strongly about the need for something tangible for participants who complete the program. This could be in the form of a certificate, graduation ceremony, or a press release about the LHO completing.

Survey Results

Professional Characteristics

A total of 184 LHOs completed the survey (2,392 weighted). Table 2.1 describes the professional characteristics of the LHOs who participated in this survey. These LHOs were largely directors (43% weighted) with a master's degree (55%) and worked at an agency that primarily served small rural areas (40%). Their years spent in public health ranged from fewer than 1 year to 44 years with a large portion of LHOs having spent more than 21 years working in public health (40%). As for their years spent as an LHO, answers ranged from fewer than 1 year to 33 years with 47% of LHOs having spent fewer than 5 years working as an LHO, 43% 6 to 20 years, and 9% more than 21 years.

Table 2.1. Professional characteristics of local health officials.

Professional Characteristics	Unweighted n (%)	Weighted n (%)
Total number of local health officials	184	2,392
Title		
Director	74 (44)	1,022 (43)
Administrator	23 (14)	407 (17)
Officer	19 (11)	217 (9)
Commissioner	16 (10)	209 (9)
Multiple titles (e.g., officer and administrator)	30 (18)	425 (18)
Other (e.g., health agent, researcher)	5 (3)	112 (5)
Years as a local health official		
2 years or less	56 (30)	728 (30)
3 to 5 years	34 (19)	416 (17)
6 to 10 years	47 (26)	592 (25)
11 to 20 years	32 (17)	430 (18)
21 or more years	15 (8)	226 (9)
Years spent working in public health		
2 years or less	13 (7)	196 (8)
3 to 5 years	11 (6)	161 (7)
6 to 10 years	24 (13)	356 (15)
11 to 20 years	58 (32)	720 (30)
21 or more years	78 (42)	959 (40)
Highest level of education		
High school degree	1 (1)	23 (1)
Associate's degree	5 (3)	100 (4)
Bachelor's degree	40 (22)	640 (27)
Master's degree	107 (58)	1,312 (55)
Doctorate degree	29 (16)	317 (13)

Primary type of population served by agency**, n (%)		
Urban core	11 (6)	111 (5)
Suburb	31 (17)	369 (15)
Medium metro	19 (11)	212 (9)
Small metro	15 (8)	183 (8)
Large rural	37 (20)	421 (18)
Small rural	63 (35)	961 (40)
Frontier and remote	6 (3)	135 (6)

*Percentages may not total to 100 due to rounding.

**Population type definitions were based on CDC (NCHS) and HRSA (FAR): Urban core - Metropolitan statistical area (MSA) of 1 million population that: 1) contain the entire population of the largest principal city of the MSA, or 2) are completely contained within the largest principal city of the MSA, or 3) contain at least 250,000 residents of any principal city in the MSA. Suburb - MSA of 1 million or more population that do not qualify as an inner city. Medium metro - In MSA of 250,000 – 999,999 population. Small metro - In MSAs of fewer than 250,000 population. Large rural - In micropolitan statistical areas (population of 10,000 to 49,999) that are not Frontier and Remote. Small rural - Rural populations not in micropolitan statistical area or Frontier and Remote areas. Frontier and Remote - Populations up to 25,000 people that are: 45 minutes or more from an urban area of 25,000 - 49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.

Program Logistics

Table 2.2 provides an overview of LHO perspectives on the components of an LHO training program. LHOs were split in determining the frequency of LHO training cohorts; approximately 47% (weighted) of LHOs suggested these cohorts should begin every six months while 47% suggested every year. The majority of LHOs reported that small groups should be based on similar characteristics rather than different characteristics (75%). LHOs also suggested that an average of 36.4% of training time should be spent with a virtual and synchronous modality, 35.5% with a virtual and asynchronous modality, and 28.0% of time spent in-person. Of training time spent in-person, the ideal number of consecutive days spent in-person training was an average of 2.6 days (range: 0 to 20 days). Approximately 90% of LHOs reported that their health department would be willing to contribute funds to an all-inclusive, in-person new LHO training if NACCHO could not secure external funding. However, 40% of LHOs suggested that their health department would only be willing to contribute $1,000 or fewer in support of a new LHO training program (range: $100 to $15,000).

Table 2.2. Local health official training program logistics.

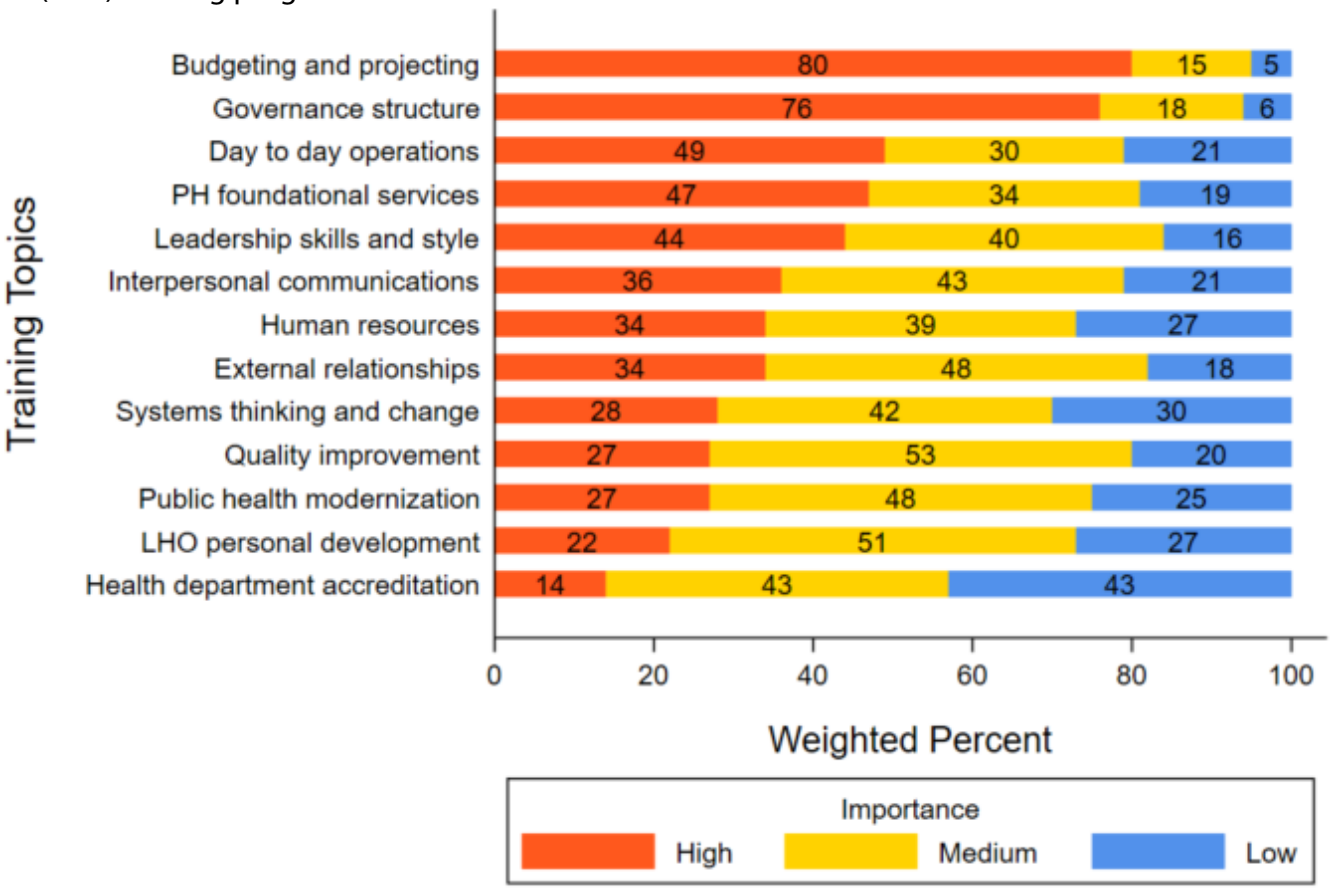
Program Logistics	Unweighted	Weighted
How often new local health official (LHO) training cohorts should begin, *n (%)*		
Every 6 months	87 (48)	1,131 (47)
Every 1 year	86 (47)	1,127 (47)
Every 2 years	8 (4)	112 (5)
Every 3 years	1 (1)	22 (1)
Suggested percentage of time spent per training modality (*n*=184), *mean (margin of error)*		
Virtual and synchronous	36.0	36.4 (±2.9)
Virtual and asynchronous	35.1	35.5 (±3.4)
In-person	28.9	28.0 (±3.4)
Ideal number of consecutive days for new LHO in-person training (*n*=184), *mean (95% CI)*	2.7	2.6 (2.4, 2.8)
Should small groups be based on similar or different characteristics, *n (%)*		
Similar	132 (72)	1,799 (75)
Different	18 (10)	186 (8)
Cohort composition does not matter	33 (18)	407 (17)
Health department willingness to contribute funds to an all-inclusive in-person new LHO training program if NACCHO cannot secure external funding, *n (%)*		
Yes	161 (92)	2,152 (90)
No	15 (8)	240 (10)

Amount of money health departments are willing to contribute to an all-inclusive in-person new LHO training program, *n (%)*		
$1,000 or less	61 (38)	967 (40)
$1,001 to $1,500	23 (14)	407 (17)
$1,501 to $2,500	44 (27)	583 (24)
$2,501 to $15,000	33 (21)	435 (18)

*Percentages may not total to 100 due to rounding.

LHOs were asked to rank the importance of thirteen different training topics that may be included in a new LHO training program (Figure 2.1). The majority of LHOs ranked budgeting, financing, and projecting (80% weighted) and public health authority and governance structure (79%) as the two most important training topics to be included. The least important training topic to be included in a training program was health department accreditation (43%).

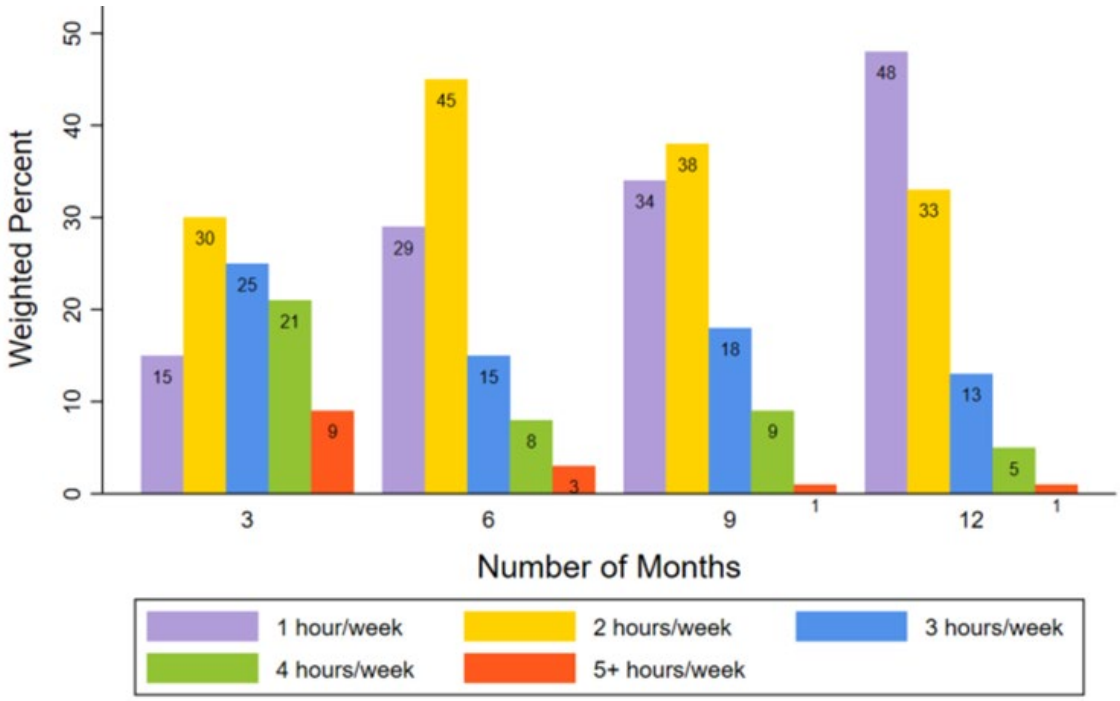
Figure 2.1. The importance of different training topics included in a new local health official (LHO) training program.



Note: PH = public health

Along with identifying the importance of different training topics, LHOs were asked to report the ideal number of hours per week and length of time for a new LHO training program (Figure 2.2). LHOs most commonly supported one to two hours per week dedicated to LHO training regardless of the number of months needed. Overall, the two most commonly identified LHO training models included having one hour per week of training over a one-year period or two hours per week of training over a six-month period.

Figure 2.2. The ideal number of hours per week and number of months for a new local health official (LHO) training program.



Mentor Activities

Table 2.3 describes the perspectives of LHOs on mentoring as a component of LHO training. The majority of LHOs (88% weighted) reported that a mentor component is a necessary part of LHO training. LHOs suggested the ideal average number of hours per week for a mentor commitment is about 2.8 hours (range: 0.5 to 25.0 hours). When asked if a training for mentors would improve their ability to provide quality mentoring, LHOs felt this mentor training would improve some of the quality (44%) and a lot of the quality (45%). Approximately 59% of LHOs would consider being a mentor to others, but some LHOs would only consider being a mentor if their direct expenses were reimbursed or they received a small stipend. Nearly all LHOs (96%) also reported that the mentor pairing methodology matters (e.g., similar backgrounds or department sizes).

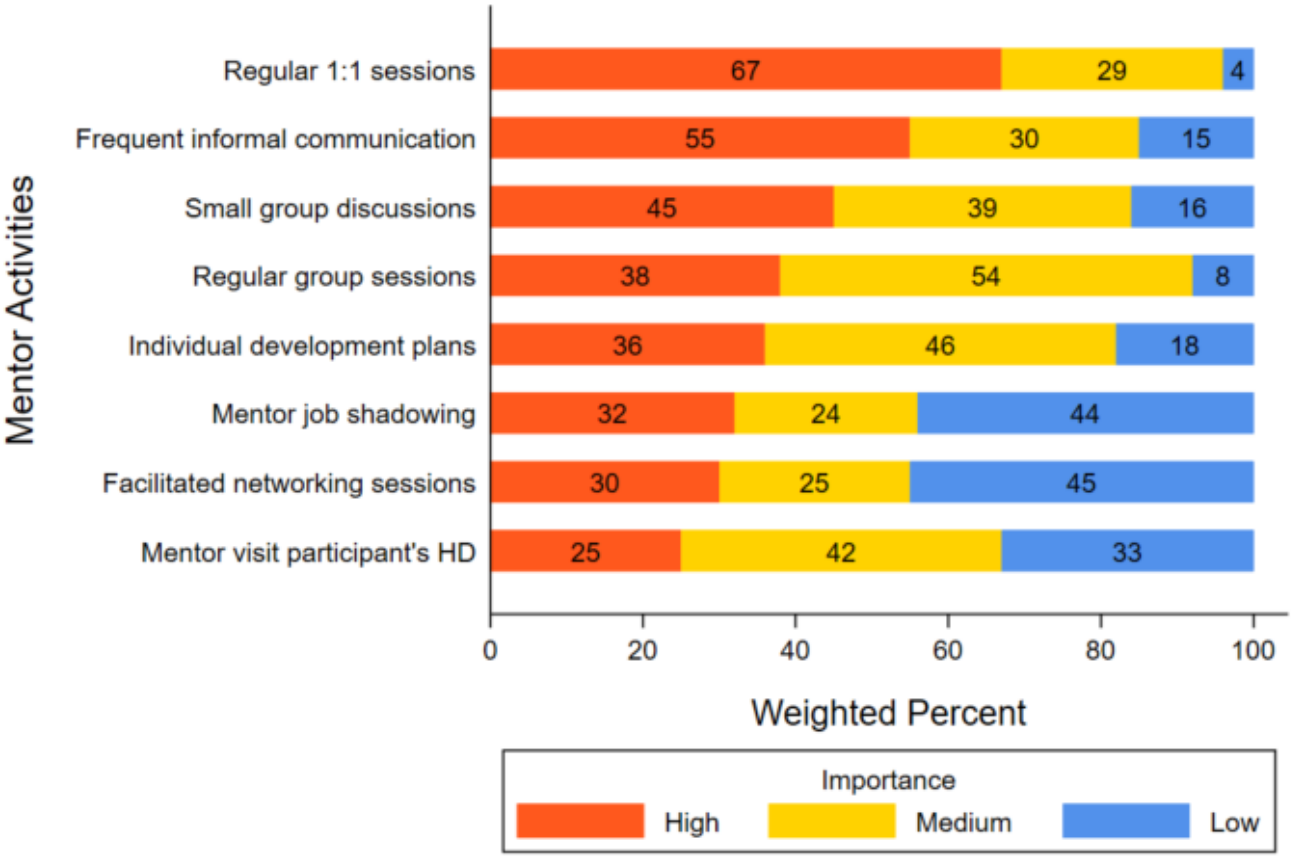
Table 2.3. Mentor components in a local health official (LHO) training program.

Mentoring	Unweighted	Weighted
A mentor/coach component in LHO training is needed, n (%)		
Yes	160 (89)	2,098 (88)
No	20 (11)	294 (12)
Ideal hours per week for a mentor/coach commitment (n=154), mean (margin of error)	2.8	2.8 (±0.5)
Would mentor/coach training improve mentor/coach ability to provide quality mentoring, n (%)		
A little	22 (14)	264 (11)
Some	66 (41)	1,057 (44)
A lot	72 (45)	1,071 (45)
Mentor consideration, n (%)		
Yes	26 (16)	338 (14)
Yes, if my direct expenses are reimbursed	57 (36)	792 (33)
Yes, if I receive a small stipend and my direct expenses are reimbursed	18 (11)	281 (12)
No	35 (22)	626 (26)
Other (e.g., would consider in the future, depends on time commitment, would like training first, not sure)	24 (15)	356 (15)
Mentor/coach pairing matters, n (%)		
Yes	173 (96)	2,284 (96)
No	7 (4)	108 (4)

*Percentages may not total to 100 due to rounding.

Further, LHOs ranked the importance of eight different mentor activities to be included in LHO training programs (Figure 2.3). The three most important mentor activities according to LHOs included: regular one-on-one sessions (67% weighted), frequent informal communication (55%), and small group discussions (45%).

Figure 2.3. Importance of different mentor activities in a local health official training program.



Note: HD = health department

Secondary Data Analysis Results

PH WINS

The de Beaumont Foundation has fielded PH WINS in 2014, 2017, and 2021, in collaboration with Association for State and Territorial Health Officials (ASTHO) and NACCHO. In 2017 and 2021, PH WINS was fielded to a nationally representative sample of LHDs that had a staff size of at least 25 and served a population of at least 25,000. In the nationally representative sample, 29,115 local staff responded in 2017 and 27,948 responded in 2021. Please see the tables below for the training gaps and data on perceptions, satisfaction, stress, prevalence of leaving, reasons for staying, and reasons for leaving. All questions are presented with the exact wording and style as in PH WINS and percentages are for the analyzed answer choices in parentheses in the question stem.

Training Gaps

The top three training gaps for new LHOs identified by PH WINS included:

1) Ensure the implementation of socially, culturally, and linguistically appropriate policies, programs, and services that reflect the diversity of individuals and populations in a community (46% of respondents)
2) Influence policies external to the organization that address social determinants of health (41% of respondents)
3) Determine the feasibility of a policy and its relationship to many types of public health problems (39% of respondents).

Please see Table 3.1 for all the training gaps identified by new LHOs in 2021 compared to 2017.

Table 3.1. New LHO training gaps.

Ensure the implementation of socially, culturally, and linguistically appropriate policies, programs, and services that reflect the diversity of individuals and populations in a community		
LHO Tenure	2017	2021
<2 years	21%	46%
2-5 years	8%	18%
5+ years	31%	21%
Total	18%	26%

Influence policies external to the organization that address social determinants of health		
LHO Tenure	2017	2021
<2 years	36%	41%
2-5 years	26%	30%
5+ years	27%	33%
Total	28%	34%
Examine the feasibility (e.g., fiscal, social, political, legal, geographic) of a policy and its relationship to many types of public health problems.		
LHO Tenure	2017*	2021
<2 years	-	39%
2-5 years	-	33%
5+ years	-	31%
Total	-	34%
Design a business plan for the agency		
LHO Tenure	2017	2021
<2 years	34%	36%
2-5 years	38%	36%
5+ years	11%	44%
Total	28%	39%
Leverage funding mechanisms and procedures to develop sustainable funding models for the agency		
LHO Tenure	2017	2021
<2 years	17%	36%
2-5 years	49%	25%
5+ years	10%	32%
Total	31%	30%
Use financial analysis methods in making decisions about programs and services across the agency		
LHO Tenure	2017	2021
<2 years	37%	36%
2-5 years	23%	33%
5+ years	9%	32%
Total	20%	33%
Incorporate health equity and social justice principles into planning across the agency		
LHO Tenure	2017	2021
<2 years	30%	33%
2-5 years	29%	29%
5+ years	26%	33%
Total	28%	32%

Prioritize and influence policies external to the organization that affect the health of the community		
LHO Tenure	2017*	2021
<2 years	-	33%
2-5 years	-	43%
5+ years	-	32%
Total	-	36%
Assess the drivers in your environment that may influence public health programs and services across the agency		
LHO Tenure	2017	2021
<2 years	31%	31%
2-5 years	21%	12%
5+ years	15%	20%
Total	20%	20%
Ensure community member engagement in the design and implementation of programs to improve health in a community		
LHO Tenure	2017	2021
<2 years	13%	30%
2-5 years	17%	21%
5+ years	9%	22%
Total	14%	23%
Negotiate with multiple partners for the use of assets and resources to improve health in a community		
LHO Tenure	2017	2021
<2 years	12%	29%
2-5 years	23%	16%
5+ years	5%	19%
Total	16%	20%
Integrate current and projected trends into organizational strategic planning		
LHO Tenure	2017	2021
<2 years	24%	24%
2-5 years	26%	32%
5+ years	21%	21%
Total	24%	25%

Manage organizational change in response to evolving internal and external circumstances		
LHO Tenure	2017	2021
<2 years	37%	24%
2-5 years	21%	20%
5+ years	7%	19%
Total	18%	20%

Advocate for needed population health services and programs		
LHO Tenure	2017	2021
<2 years	12%	19%
2-5 years	25%	14%
5+ years	4%	19%
Total	16%	17%
Communicate in a way that persuades others to act		
LHO Tenure	2017	2021
<2 years	20%	19%
2-5 years	11%	7%
5+ years	4%	12%
Total	10%	12%
Build collaborations within the public health system among traditional and non-traditional partners to improve the health of a community		
LHO Tenure	2017	2021
<2 years	0%	15%
2-5 years	20%	5%
5+ years	12%	8%
Total	14%	9%
Create a culture of quality improvement at the agency or division level		
LHO Tenure	2017	2021
<2 years	29%	15%
2-5 years	20%	21%
5+ years	18%	20%
Total	20%	19%
Develop a diverse public health workforce		
LHO Tenure	2017	2021
<2 years	22%	15%
2-5 years	9%	18%
5+ years	18%	24%
Total	14%	20%

Ensure the use of appropriate sources of data and information to assess the health of a community		
LHO Tenure	2017	2021
<2 years	4%	14%
2-5 years	17%	5%
5+ years	13%	7%
Total	14%	8%

Content knowledge specific to my programmatic area		
LHO Tenure	2017*	2021
<2 years	-	13%
2-5 years	-	1%
5+ years	-	3%
Total	-	5%
Use valid data to drive decision-making		
LHO Tenure	2017	2021
<2 years	8%	12%
2-5 years	3%	7%
5+ years	3%	3%
Total	4%	6%
Ensure health department representation in a collaborative process resulting in a community health assessment or community health improvement plan		
LHO Tenure	2017	2021
<2 years	13%	11%
2-5 years	6%	10%
5+ years	18%	7%
Total	11%	9%
Ensure the application of evidence-based approaches to address public health issues		
LHO Tenure	2017	2021
<2 years	0%	11%
2-5 years	17%	4%
5+ years	14%	11%
Total	14%	9%
Ensure the successful implementation of an organizational strategic plan		
LHO Tenure	2017	2021
<2 years	21%	9%
2-5 years	21%	24%
5+ years	5%	10%
Total	16%	15%

Technical Skills specific to my programmatic area		
LHO Tenure	2017*	2021
<2 years	-	7%
2-5 years	-	1%
5+ years	-	8%
Total	-	6%

*Indicates question / reason was not asked in 2017

Perceptions and satisfaction

First, 100% of new LHOs stated that they felt the work they do is important, they are determined to give their best effort at work every day, and they are satisfied that they have the opportunities to apply their talents and expertise. Most new LHOs felt that the communication was good between senior leadership and employees, they felt completely involved in their work, and creativity and innovation were rewarded. Approximately over half of participants indicated that their training needs were assessed. While this is a markedly improvement from 2017, it is still problematic when helping new LHOs develop into effective health department leaders. Almost all new LHOs indicated being satisfied with their job, organization, pay and job security. However, pay satisfaction was the lowest of the four items and fell from 82% to 75% for new LHOs between 2017 and 2021. Please see the table below for all new LHOs' perceptions and satisfaction scores in 2017 compared to 2021.

Table 3.2. LHOs perceptions and satisfaction.

I know how my work relates to the agency's goals and priorities (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	100%	100%
2-5 years	100%	99%
5+ years	100%	97%
Total	100%	98%
The work I do is important (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	100%	100%
2-5 years	100%	100%
5+ years	100%	100%
Total	100%	100%
Creativity and innovation are rewarded (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	81%	72%
2-5 years	78%	69%
5+ years	72%	76%
Total	76%	73%

Communication between senior leadership and employees is good in my organization (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	47%	84%
2-5 years	82%	73%
5+ years	79%	81%
Total	76%	79%

Supervisors work well with employees of different backgrounds (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	75%	87%
2-5 years	94%	71%
5+ years	93%	90%
Total	91%	83%
Supervisors in my work unit support employee development (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	84%	95%
2-5 years	89%	81%
5+ years	88%	96%
Total	88%	91%
My training needs are assessed (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	31%	56%
2-5 years	77%	39%
5+ years	73%	71%
Total	70%	57%
I feel completely involved in my work (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	97%	98%
2-5 years	100%	92%
5+ years	94%	96%
Total	98%	95%
I am determined to give my best effort at work every day (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	100%	100%
2-5 years	100%	99%
5+ years	100%	94%
Total	100%	97%

I am satisfied that I have opportunities to apply my talents and expertise (agree or strongly agree)		
LHO Tenure	2017	2021
<2 years	94%	100%
2-5 years	94%	89%
5+ years	94%	92%
Total	94%	93%

Considering everything, how satisfied are you with (agree or strongly agree):		
Your job?		
LHO Tenure	2017	2021
<2 years	95%	96%
2-5 years	84%	89%
5+ years	92%	91%
Total	88%	91%
Your organization?		
LHO Tenure	2017	2021
<2 years	87%	97%
2-5 years	85%	80%
5+ years	86%	84%
Total	85%	85%
Your pay?		
LHO Tenure	2017	2021
<2 years	82%	75%
2-5 years	70%	77%
5+ years	81%	71%
Total	75%	74%
Your job security?		
LHO Tenure	2017	2021
<2 years	65%	85%
2-5 years	96%	81%
5+ years	82%	89%
Total	87%	86%

*Indicates question / reason was not asked in 2017

Stress

The following questions were only asked in 2021. Over 70% of new LHOs have felt bullied, threatened, or harassed by individuals outside the health department because of their role as a public health professional and that their public health expertise was undermined or challenged by individuals outside of the health department. When exploring post-traumatic stress disorder among LHOs due to COVID-19, over half indicated having at least one of the four symptoms: 1) had nightmares or thought about COVID-19 when they didn't want to, 2) tried hard to not think about COVID-19 or went out of their way to avoid situations, 3) were constantly on guard, watchful, or easily startled, 4) felt numb or detached from others, activities, or surroundings. Lastly, most participants indicated that their mental health was fair. Please see the table below for all the stress indicators.

Table 3.3. LHOs' stress.

I have felt bullied, threatened, or harassed by individuals outside of the health department because of my role as a public health professional. (agree or strongly agree)	
LHO Tenure	2021
<2 years	71%
2-5 years	71%
5+ years	83%
Total	76%
I have felt my public health expertise was undermined or challenged by individuals outside of the health department. (agree or strongly agree)	
LHO Tenure	2021
<2 years	76%
2-5 years	93%
5+ years	93%
Total	89%
Has the coronavirus or COVID-19 outbreak been so frightening, horrible, or upsetting that you had nightmares about it or thought about it when you did not want to? (agree or strongly agree)	
LHO Tenure	2021
<2 years	55%
2-5 years	68%
5+ years	51%
Total	57%

Has the coronavirus or COVID-19 outbreak been so frightening, horrible, or upsetting that you tried hard not to think about it, or went out of your way to avoid situations that reminded you of it? (yes)	
LHO Tenure	2021
<2 years	53%
2-5 years	52%
5+ years	47%
Total	50%
Has the coronavirus or COVID-19 outbreak been so frightening, horrible, or upsetting that you were constantly on guard, watchful, or easily startled? (yes)	
LHO Tenure	2021
<2 years	58%
2-5 years	60%
5+ years	45%
Total	53%

Has the coronavirus or COVID-19 outbreak been so frightening, horrible, or upsetting that you felt numb or detached from others, activities, or your surroundings? (yes)	
LHO Tenure	2021
<2 years	55%
2-5 years	54%
5+ years	55%
Total	55%

Table 3.4. LHOs' mental health.

In general, how would you rate your mental or emotional health?					
	2021				
LHO Tenure	Poor	Fair	Good	Very Good	Excellent
<2 years	2%	35%	28%	20%	15%
2-5 years	3%	23%	28%	38%	8%
5+ years	7%	19%	31%	31%	12%
Total	4%	24%	29%	31%	11%

Leaving and staying, and reasons

Excluding retirement, 18% of new LHOs indicated considering leaving in the next year, up from 5% in 2017, and 16% indicated considering retiring in the next five years, down from 20% in 2017. Of those indicating they are leaving, 1 in 4 indicated that thinking about COVID-19 made them want to leave. The top three reasons new LHOs cited for leaving their organization in 2021 were work

overload/burnout (83%), lack of support (77%), and leadership changeover (72%). The reasons new LHOs cited for staying in the agency in 2021 had a wider distribution than reasons for leaving. The top three reasons were benefits (e.g., retirement contributions/pensions, health insurance; 67%), exciting and challenging work (62%), and pride in the organization and its mission (60%). Please see below for all for the metrics on leaving and reasons for leaving and staying.

Table 3.5. Enumeration of new LHOs indicating their intent to leave.

Considering leaving in next year (excluding retirements; yes)		
LHO Tenure	2017	2021
<2 years	5%	18%
2-5 years	16%	8%
5+ years	9%	27%
Total	12%	18%

Considering retiring in the next five years (yes)		
LHO Tenure	2017	2021
<2 years	20%	16%
2-5 years	47%	27%
5+ years	65%	57%
Total	50%	38%
I was thinking about staying, but COVID made me want to leave (yes)		
LHO Tenure	2017*	2021
<2 years	-	25%
2-5 years	-	16%
5+ years	-	28%
Total	-	24%

*Indicates question / reason was not asked in 2017

Table 3.6. Reasons why new LHOs were planning to stay.

Lack of stress		
LHO Tenure	2017*	2021
<2 years	-	4%
2-5 years	-	0%
5+ years	-	0%
Total	-	1%

Unsatisfactory opportunities outside of the agency		
LHO Tenure	2017*	2021
<2 years	-	8%
2-5 years	-	1%
5+ years	-	5%
Total	-	4%
Training opportunities		
LHO Tenure	2017*	2021
<2 years	-	10%
2-5 years	-	6%
5+ years	-	1%
Total	-	5%

Opportunities for advancement		
LHO Tenure	2017*	2021
<2 years	-	12%
2-5 years	-	4%
5+ years	-	0%
Total	-	5%
Mentorship opportunities		
LHO Tenure	2017*	2021
<2 years	-	15%
2-5 years	-	4%
5+ years	-	1%
Total	-	6%
Acknowledgement/recognition for your work		
LHO Tenure	2017*	2021
<2 years	-	21%
2-5 years	-	32%
5+ years	-	12%
Total	-	22%
Satisfaction with your agency's leadership		
LHO Tenure	2017*	2021
<2 years	-	22%
2-5 years	-	27%
5+ years	-	32%
Total	-	28%

Flexibility (e.g., flex hours/telework)		
LHO Tenure	2017*	2021
<2 years	-	22%
2-5 years	-	33%
5+ years	-	29%
Total	-	29%
Pay		
LHO Tenure	2017*	2021
<2 years	-	25%
2-5 years	-	36%
5+ years	-	13%
Total	-	25%

Satisfaction with your supervisor		
LHO Tenure	2017*	2021
<2 years	-	30%
2-5 years	-	26%
5+ years	-	22%
Total	-	26%
Organizational climate/culture		
LHO Tenure	2017*	2021
<2 years	-	32%
2-5 years	-	28%
5+ years	-	36%
Total	-	32%
Support		
LHO Tenure	2017*	2021
<2 years	-	42%
2-5 years	-	17%
5+ years	-	10%
Total	-	21%
Job stability		
LHO Tenure	2017*	2021
<2 years	-	52%
2-5 years	-	41%
5+ years	-	22%
Total	-	37%

Job satisfaction		
LHO Tenure	2017*	2021
<2 years	-	53%
2-5 years	-	48%
5+ years	-	56%
Total	-	52%
Pride in the organization and its mission		
LHO Tenure	2017*	2021
<2 years	-	60%
2-5 years	-	61%
5+ years	-	63%
Total	-	62%

Exciting and challenging work		
LHO Tenure	2017*	2021
<2 years	-	62%
2-5 years	-	72%
5+ years	-	67%
Total	-	68%
Benefits (e.g., retirement contributions/pensions, health insurance)		
LHO Tenure	2017*	2021
<2 years	-	67%
2-5 years	-	58%
5+ years	-	54%
Total	-	59%

*Indicates question / reason was not asked in 2017

Table 3.7. Reasons why new LHOs are planning to leave.

Lack of training		
LHO Tenure	2017	2021
<2 years	0%	0%
2-5 years	0%	0%
5+ years	0%	0%
Total	0%	0%

Reasons unrelated to my job		
LHO Tenure	2017*	2021
<2 years	-	0%
2-5 years	-	8%
5+ years	-	9%
Total	-	8%
Retirement		
LHO Tenure	2017	2021
<2 years	0%	0%
2-5 years	4%	57%
5+ years	0%	57%
Total	1%	50%

Lack of acknowledgement/recognition		
LHO Tenure	2017	2021
<2 years	0%	10%
2-5 years	0%	0%
5+ years	0%	13%
Total	0%	10%
Satisfaction with your supervisor		
LHO Tenure	2017	2021
<2 years	0%	10%
2-5 years	55%	7%
5+ years	0%	6%
Total	21%	7%
Job instability		
LHO Tenure	2017*	2021
<2 years	-	12%
2-5 years	-	0%
5+ years	-	5%
Total	-	5%
Job satisfaction		
LHO Tenure	2017	2021
<2 years	0%	16%
2-5 years	14%	13%
5+ years	0%	20%
Total	5%	18%

Stress		
LHO Tenure	2017	2021
<2 years	44%	38%
2-5 years	19%	49%
5+ years	3%	63%
Total	10%	57%
Lack of opportunities for advancement		
LHO Tenure	2017	2021
<2 years	0%	45%
2-5 years	59%	0%
5+ years	0%	5%
Total	22%	9%

Lack of flexibility (flex hours/telework)		
LHO Tenure	2017	2021
<2 years	0%	45%
2-5 years	42%	15%
5+ years	0%	6%
Total	16%	13%
Other opportunities outside agency		
LHO Tenure	2017	2021
<2 years	0%	51%
2-5 years	37%	0%
5+ years	3%	8%
Total	15%	12%
Pay		
LHO Tenure	2017	2021
<2 years	0%	55%
2-5 years	67%	19%
5+ years	12%	19%
Total	32%	24%
Weakening of benefits		
LHO Tenure	2017	2021
<2 years	0%	55%
2-5 years	29%	0%
5+ years	0%	1%
Total	11%	8%

Organizational climate/culture		
LHO Tenure	2017*	2021
<2 years	-	61%
2-5 years	-	36%
5+ years	-	18%
Total	-	27%
Leadership changeover		
LHO Tenure	2017	2021
<2 years	0%	72%
2-5 years	7%	7%
5+ years	0%	13%
Total	3%	20%

Lack of support		
LHO Tenure	2017	2021
<2 years	0%	77%
2-5 years	41%	28%
5+ years	3%	22%
Total	17%	30%
Work overload/burnout		
LHO Tenure	2017	2021
<2 years	44%	83%
2-5 years	34%	56%
5+ years	3%	59%
Total	15%	62%

*Indicates question / reason was not asked in 2017

Other Trainings

After examining other trainings mentioned by interview participants that have relevancy to new LHOs, we found that there are numerous online trainings (including through Public Health Learning Navigator and TRAIN) that currently deliver some of the specific content mentioned by interview participants such as managing change, performing a community health assessment, law for public health officials, project management, coaching skills, public health financial management, and cooperative communication. These could be incorporated into the training as asynchronous components that are then built upon through discussions in the synchronous components. These could also be linked to on the NACCHO website and accompany other NACCHO trainings.

ASTHO has a leadership institute that has some structural components that may be beneficial for both new LHO training and LHOs in general. First, the on-demand learning modules is similar to what some interview participants recommended. Also, ASTHO provides individual executive coaching similar to how interview participant described the need for all new LHOs to have a coach. Additionally, there are numerous retreat opportunities for ASTHO members, which aligns with interview participants' description of needed additional touchpoints for LHOs to connect, network, and learn.

Equity, as several interview participants and our field experts reiterated, should be incorporated into all leadership development programs. One program, Human Impact Health Equity Fellowship, focuses on relationships between fellows and faculty and self-development and care as precursors to systems change. In particular, they use the term "transformative organizing" implying deep work within communities. PHAB has also begun to focus on equity through PHAB standards. Therefore, equity is recommended to be woven into the training and participants made aware of other trainings for a deeper dive.

Adaptive leadership, specifically the NACCHO Adaptive Leadership Academy, was highly lauded by interview participants and our field experts. Though that program is separate from new LHO training, several components (especially those that align with other recommended content) could be incorporated into the new LHO training such as "The Role," "The Work," and "The People."

Our interview participants and field experts both indicated that the pandemic has increased the need for training to support positive supervisory relationships, such as trauma informed resilience-oriented supervision training. The field experts also recommended broadening the content scope to look at an agency and its policies and practices through a trauma-informed lens. This could be done through a case study during the new LHO training. The field experts also indicated that there are numerous consultants and training modules on this topic that could be engaged and used for the training.

The last program found during our searches was the Public Health Academy created by the Consortium of Eastern Ohio Master of Public Health. Not a lot of data was found on this program, which is designed for young aspiring public health agency professionals. The program was structured so that an agency's senior leader would serve as a mentor to other employees who have potential for future leadership. The mentees would attend academy sessions with content based on mentor suggestions and complete a local or regional project. Therefore, this program may be useful to look at for potential ideas for aspiring LHOs rather than new LHOs.

Multiple books were also mentioned and explored. These included 1) *First 90 Days in Government,* 2) *The Leadership Change,* 3) *Tackling Health Inequity through Public Health, and* 4) *Country's Medical Field: Public Health*. The first book is specifically for those who are within the first three months of their position and less helpful for LHOs beyond their first three months. Though, as one field expert described, this book may have a few observations about government leadership that may be welcomed "a-ha" moments beyond their first three months in the position. A field expert shared that this may not be a key resource for a new LHO training program but may be a general recommendation for new public health directors. The second is an older book, which has been used in the Centers for Disease Control and Prevention (CDC) and state/regional leadership institutes and in leadership academic courses since the 1990s. The third book aligns with an earlier recommendation of ensuring equity is incorporated into the program. This book helps public health leaders understand and incorporate a social justice framework into public health and has examples that help bring the concepts to life as leaders think about bringing the approach to work in their communities. Many of the examples are pulled from one particular state but may provide a jumping off point for participants to discuss how they could approach a health inequity issue within their own communities. Lastly, the fourth book could not be found through internet searches.

Throughout the web searches, there were several trainings and resources explored that may not be directly useful to a new LHO training yet are still worth mentioning. These included the American Academy of Pediatrics (AAP) leadership and public health trainings, state leadership institutes, University of Wisconsin's New to Public Health, University of North Carolina's Public Health Leadership Program, and CDC's Epidemic Intelligence Service Program, Public Health Associate Program, and Epidemiology of Vaccine Preventable Disease Training. The AAP's trainings, though helpful for LHOs to be aware of, are geared towards pediatricians and likely not applicable to the broader population. Several states and counties have leadership institutes that may be beneficial to pull online asynchronous content and link to for more in-depth training, they were not deemed to have enough broader content to be individually examined for a new LHO training program. Additionally, the University of North Carolina's Public Health Leadership has a great program, but it is geared towards broader public health leaders and not LHOs specifically. Lastly, the three CDC programs are beneficial in their own way, but the Epidemic Intelligence Service Program and Epidemiology of Vaccine Preventable Disease Training are too specific to be beneficial and the Public Health Associate Program is for those just entering public health. The latter may be beneficial for LHOs to be aware of if they are new to public health or have staff members new to the field but is likely not applicable to the broader population of new LHOs.

NACCHO Membership Database

Within the NACCHO member database, 404 persons were identified as potentially new LHOs. Please see Appendix B for full tables. The majority of new LHOs were from PHS Region 1 and the state with the greatest number of new LHOs was Massachusetts. Additionally, most of the new LHOs are located within county health departments. The smallest jurisdiction served by a new LHO was 420 constituents and the largest was 8,336,817 with an average of 123,499 (SD = 469,293.5) and a median of 28,528. The data is highly positively skewed indicating that the majority of new LHOs are within smaller health departments. Please the table below for full data.

Table 3.8. Geographic distribution of new LHOs.

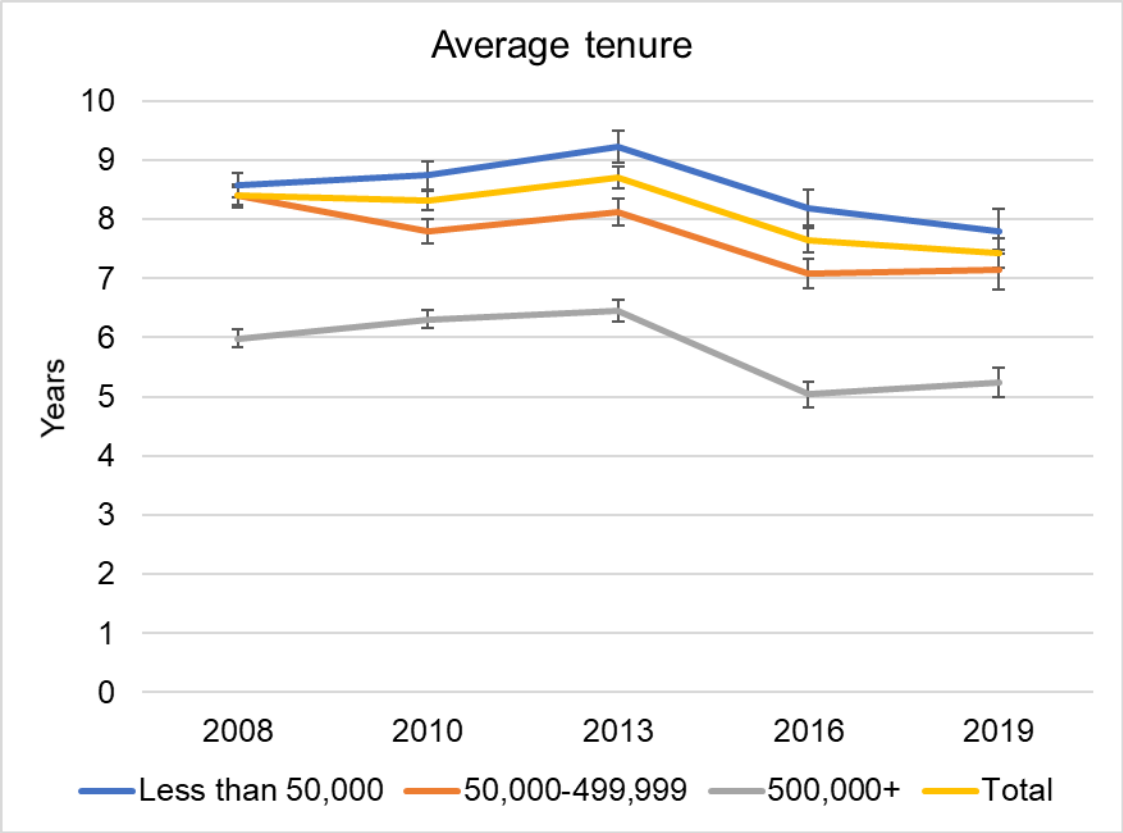
PHS (HHS) Region	Frequency	Percent
1	107	27%
2	20	5%
3	36	9%
4	54	13%
5	91	23%
6	12	3%
7	35	9%
8	22	5%
9	11	3%
10	13	3%
Total	401	100%
State/Territory	Frequency	Percent
AK	1	0%
AZ	2	1%
CA	9	2%
CO	11	3%
CT	10	2%
FL	5	1%
GA	29	7%
IA	9	2%
IL	6	1%
IN	13	3%
KS	10	2%
KY	13	3%
LA	8	2%
MA	98	24%
MD	5	1%
MI	7	2%
MN	23	6%
MO	14	3%
MS	1	0%
MT	5	1%
NC	4	1%
ND	2	1%
NE	2	1%

NJ	16	4%
NY	4	1%
OH	30	7%
OR	4	1%
PA	2	1%
SD	2	1%
TN	3	1%
TX	4	1%
UT	2	1%
VA	26	6%
WA	8	2%
WI	13	3%
WV	3	1%
Total	404	100%
Organization Subtype	Frequency	Percent
Board of Health	3	1%
Branch	1	0%
City	155	38%
County	214	53%
District	10	2%
DistrictWSubs	12	3%
Multi-Jurisdictional	8	2%
Region	1	0%
Total	404	100%

NACCHO Profile Data

Overtime the average tenure of LHOs has decreased for all health department sizes (< 50,000, 50,000-499,999, 500,000+). See figure 3.1 below for a pictorial representation of this trend

Figure 3.1 Pictorial representation of LHO tenure from 2008 – 2019.



Please see the table below for education demographics of LHOs from 2008-2019. Though different data have been collected across the years a few trends are noted. First, LHOs with a medical degree (MD/DO) have trended down and LHOs holding a registered nurse (RN) licensure or no licensure have trended up.

Table 3.9. LHO demographic from 2008 – 2019.

	2008	2010	2013	2016	2019
Work Status					
Full-Time	-	-	-	-	94%
Highest Degree					
Associates	-	-	-	-	8%
Bachelors	-	-	-	-	29%
Masters	-	-	-	-	49%
Doctorate	-	-	-	-	14%
Specialized Degree					

AD/ASN	19%	18%	14%	-	-
AA	-	-	9%	-	-
Other Associate	-	-	3%	-	-
BA	18%	20%	18%	-	-
BS	41%	42%	43%	-	-
BSN	23%	23%	22%	-	-
Other Bachelor's	-	11%	4%	-	-
MA	-	-	5%	-	-
MS	-	-	13%	-	-
MPH	20%	22%	21%	-	-
MSN/MN	5%	5%	4%	-	-
MBA	4%	5%	4%	-	-
Other Masters	26%	28%	10%	-	-
DNP	-	-	0.20%	0.70%	-
DrPH	-	0.60%	0.60%	0.50%	-
DDS	-	0.10%	0%	0%	-
DVM	-	0.20%	0.30%	0.20%	-
JD	-	0.70%	0.40%	0.30%	-
PhD	-	0.20%	2%	2.00%	-
Other doctorate	-	2%	0.50%	1.00%	-
Medical Degree	15%	12%	12%	10%	9%
Nursing	-	-	-	-	24%
Public Health	-	-	-	-	30%
None	-	-	-	-	44%
Specialized post baccalaureate certificate/post graduate certificate/non-degree certificate					
Nursing	-	-	-	-	9%
Public Health	-	-	-	-	20%
None of the above	-	-	-	-	73%
Licensures Held					
LPN/LVN	-	0.50%	0.60%	-	0.50%
MD	14%	12%	12%	10%	9%
RD	-	2%	2%	-	2%
REHS/RS	-	18%	19%	-	16%
RN	-	5%	39%	-	28%
Other	-	23%	22%	-	15%
None	-	20%	19%	-	38%

Survive and Thrive 2008–2013 Documents

Some of the first documents examined during this study were Henry et al.'s[1] The Survive and Thrive Program: Encouraging coaching, mentoring, and peer learning among new LHOs and the three evaluations from Survive and Thrive cohorts 1, 2, and 3. Here we summarize some of the highlights and key differences between the three cohorts.

Cohort 1 (2008–2009) Highlights:

- Thirty fellows, 8 coaches (7 led teams, 1 at-large coach for fellows on as-needed basis and provide resources for other coaches).
- Fellows and coaches reported that on average they agreed or strongly agreed that the fellows could demonstrate the vast majority of the learning objectives within each workshop.
    - Coaches tended to provide lower ratings than fellows and for a few learning objectives, 25% or more of coaches provided less favorable ratings (neither agree or disagree to strong disagree) regarding fellows' present capabilities to demonstrate objectives.
- Some modifications were made during the program based on issues raised by coaches and fellows (see pages 60 and 68, of Sarpy and Associates (2009)).
- Social network analysis demonstrated that fellows built a social network over the course of the training.
- On average, the fellows "somewhat agree" to "agree" on the effectiveness of the coaching components while the coaches averaged "agree" to "strongly agree."[2]
- Pre and post ratings of fellows' demonstration of Survive and Thrive competencies showed that fellows routinely rated themselves lower than their rater and repeated paired-sample t-tests showed that at $p<0.05$, only one competency had a statistically significant change for self-evaluations (competency 1) and two competencies had statistically significant changes for the raters (competencies 1 and 3). However, each competency did show a trend towards improvement and there was a possible ceiling effect due to high pre-test scores.
- The 41 behaviors of fellows on the job were assessed in a comparable manner with similar results: fellows' self-ratings were on average lower than their raters, the post scores all trended in a positive direction with some being statistically significant at $p<0.05$, and a potential ceiling effect due to higher pre-test scores.
- Logic model revised during cohort and then used during cohort 2.

Cohort 2 (2011–2012) Highlights:

- Used revised logic model from cohort 1.
- On average, the coaches and fellows "agreed" that the workshops were effective regarding content, format, speakers, and overall.
- On average, fellows and coaches reported that they "agree" to "strongly agree" that fellows could demonstrate the majority of the training module learning objectives.
- On average, fellows and coaches reported that they "agree" to "strongly agree" that fellows could demonstrate the majority of the training module learning competencies.
- Fellows significantly improved (all $p<0.05$) in their agreement as to whether they agreed that they met Survive and Thrive competencies via paired t-tests.

Cohort 3 (2013–2014) Highlights:

- Regional centers had benefits & challenges. Coaches and fellows had shared regional interests and challenges and there were shorter distances for coaches to travel to their teams. However, the centers had challenges completing their responsibilities with allotted budgets and there was an additional layer of personnel and communications.
- Mixed-methods evaluation (surveys, interviews, focus groups, document review) from participants, coaches, NACCHO, and regional center staff.
- Impact of program elements as rated by fellows:
    - High: networking opportunities, 360˚ review and feedback (anonymous feedback from peers), Emergenetics feedback and exercise, coaching, and kickoff meeting.
    - Low: some of the breakout sessions at the opening workshop and ask the Expert sessions.
- Impact of program on LHOs' leadership abilities:
    - High: accessing the support of Survive and Thrive coaches and fellows; communicating with staff; managing personnel; developing and using strategic planning; describing their role and their health departments' role; and communicating and engaging with elected officials.
    - Moderate: ability to communicate and engage their governing boards, as well as navigating the political environment in which they operate.
    - Low: communicating and engaging with the State HD; managing information and financial resources; positioning their LHD to respond to emergent public health crises; and advocating for and getting their policy recommendations implemented.
- Impact on LHD's functioning and capacity
    - High: describing the role of their health departments, becoming a learning organization, adapting to changes, addressing staff training and development needs, improving the morale, applying organization's vision and mission, and forming alliances with community partners.
    - Moderate: expanding or improving their LHDs' programs and engaging staff with elected officials at their LHD as moderately impacted by the program.
    - Low: quality improvement processes, using internal evaluation, working with media, maintaining existing resources, using external evaluation, attracting new resources, and decreasing staff turnover.

Similarities between all 3 cohorts:

- General structure
- Evaluation questions & methodology
- Coaching structure

Changes made between Cohort 1 & Cohort 2:

- National & state level programs (Kansas, Colorado, Wisconsin).
- Revised training modules (e.g., greater use of hands-on exercises, greater opportunities for discussion and interaction, inclusion of practical examples of training content.
- Individual develop plan (IDP) for cohort 2 had 5 tasks instead of 10 with cohort 1.
- The national and Wisconsin cohorts included a shadowing component within their coaching.
- Increased number of fellows from 30 to 54.

Changes made between Cohort 2 & Cohort 3:

- Increased number of fellows from 54 to 115.
- Switched from only LHOs who had been serving in their position for fewer than two years (cohort 1&2) to new and aspiring LHOs.
- The shadowing coaches that was added for some fellows in Cohort 2 was implemented into the curriculum for all fellows in cohort 3.
- Evaluation was vastly different for cohort 3 compared to cohort 1&2:
    - Mixed methods for cohort 3 (almost entirely quantitative for cohorts 1&2).
    - The evaluation in cohort 3 also did not include others rating fellows on their job behaviors or use the organizational factors survey.
    - Program impact, impact of LHOs' leadership abilities, LHDs' function, and capacity were defined based on how helpful and impactful fellows rated program elements on a 5-point Likert Scale.

We presented these highlights to field experts who provided their thoughts:

Expert 1:

As I looked at the logic model for Survive and Thrive 1.0 and thought about the framing behind creating Survive and Thrive 2.0, I'm wondering if incorporating the Foundational Capabilities developed by RESOLVE might further ground this effort. I realize that these are descriptors of what agencies should have, but I believe that they could guide us in what we believe leaders of these agencies should have as well.

While the RESOLVE model imagines that all the Capabilities need to be strong, there may be some that seem most urgent to address and strengthen, depending on the demands of this moment and the level of existing competencies. In Minnesota, the state health department is working with local public health leaders to identify those capabilities needing the most focus at this point in time. Among key area they have identified are communications, health equity, and Epi/information systems.

Perhaps there could be a self-assessment of participants based on Foundational Capabilities at the beginning of a year that would help guide some content for group sessions and would also guide any individual plan development. This could also help frame areas for evaluation.

In the evaluations from Survive and Thrive, I'm struck with the relatively weak results related to advocating and implementing policy. In the not too distant past we were describing Policy as one of the three core function of public health along with Assessment and Assurance. It is the core function that is most highly reliant on engagement of leaders in an agency. I would hope that this area is strengthened in 2.0.

We will need to rely on a fair amount of self-reporting but I think we can take steps to further quantify those responses. Both initially and at the end of the program, we could develop a drop-down list of actions that would indicate involvement in key areas. It seems like some of this type of information came out organically in interviews with participants but was not universally collected. The drop-down list should include an "other" category to help us capture relevant actions we hadn't listed.

Secondly, I have some reservations about using 360 evaluations as a tool to measure change. Having done many and had several conducted about me, I think they provide valuable feedback but may not be a tool that measures change well, as opposed to giving overall impressions of how someone behaves; I just don't think non supervisors can easily focus their feedback to represent a specific period of time. One alternative might be to do a follow-up 360 that is focused on a project or activity. That might help reviewers be more precise in the scope of their feedback and might increase the likelihood that any change would be apparent.

Expert 2:

(1) Reading assignments and self-assessments. Kouzes & Posner's Leadership Practices Inventory (LPI) and the accompanying text The Leadership Challenge is a useful self-assessment tool because it is used extensively in government and industry and provides a good benchmark. The Emergenetics profile of fellows and coaches in the final cohort of Survive & Thrive 1.0, while interesting, wasn't used much to help participants focus on any particular aspects of leadership development (in my own experience with that cohort).

(2) Training modules that are spaced over the course of the program. These modules, either live or self-paced, could be offered as a menu that users can select from based on the results of their self-assessments and interests. The PH WINS survey can be used as a self-assessment tool. Training content can be aligned with leadership competencies from the Core Competencies for Public Health Professionals (Leadership and Systems Thinking domain) and de Beaumont's Strategic Skills

(3) Small group activities. Fellows should be clustered according to affinity groups or other characteristics. Based on my experience as a Survive & Thrive coach, I did not see great value in clustering fellows by geographic region with program administration through regional centers.

(4) Coaching by experienced active or retired local health officials. As the several evaluations have concluded, coaches should receive more training than was offered in Survive and Thrive 1.0. Coaches could be incentivized to participate by offering them stipends to attend NACCHO Annual.

(5) Learning Contract/Independent Development Plans (IDP). The IDP template was especially helpful for fellows and coaches in developing their "deliverables" for the program and served as a source of quantitative data for program evaluation. I continue to use the IDP from Survive and Thrive myself as a career planning tool with my public health students. Survive and Thrive 1.0 was a 12-month program with an on-site kickoff (at NACCHO Annual, I believe). This length is consistent with other successful leadership development programs. The three evaluations all cited the value that fellows and coaches placed on face-to-face meetings. While this may not be possible if Survive and Thrive 2.0 debuts during the pandemic, a (mostly) virtual program that encourages participants to attend an optional in-person retreat or a commencement at program's end at a NACCHO Annual would satisfy that desire on the part of participants.

Environmental Scan

If desired, please see the Environmental Scan Appendix for detailed findings. Overall, numerous public health trainings exist, though most are one-off and not in a series or on a recurring schedule, and literature on public health leadership trainings is somewhat limited.

Evaluations of previous leadership training programs found that participants liked the use of case studies, real-world examples, live webinars, refresher trainings, team coaching, and peer connections during their trainings. Of the currently available trainings, most all are webinar or computer-based. Some use case studies or real-world examples and few indicate using direct team coaching or peer-to-peer connections during training.

When examining one-off, recorded trainings, the most frequently addressed topics were for trainees' professional development. These topics included, change management, leadership styles, adaptive leadership, barriers to success, conflict management skills, leadership communication, leadership skills, personal growth, and strategic planning. Another group of trainings was designed for managers about how to work with their staff including: team building, staff health and support, management during crisis or trauma, burnout, and staff communication. The final grouping of trainings found was subject based and covered skills such as: budgeting, succession planning, project management, quality improvement, community engagement, and PHAB accreditation.

A trainings series of note is through the North Dakota Public Health Training Network (NDPHTN), which has a 23-course series on public health leadership and management that promotes its "immediate on-the-job application". Some courses are geared toward public health practice and some toward internal matters, leadership, and management. Courses with an internal focus include: team building, strategic planning, organization and financing, systems thinking, worksite wellness, coalition building, basic budgeting concepts, program planning, and LePSA(S). Courses with an external focus include: community engagement, changing risky behaviors, public health in disasters, public health and housing, and advocacy. NDPHTN also offers a 15-week 33-course series, including quizzes and a final written paper, for those looking to earn continuing education credits and a specialized training certificate.

For this environmental scan, we also sought to identify current Public Health Leadership programs offered by universities. So, using the ASPPH Academic Program Finder we searched for program with a focus on "Public Health Leadership," Currently, there are six Doctor of Public Health (DrPH) programs, 9 Masters of Public Health (MPH) programs, and three certificates from a Public Health School have a Leadership concentration. Depending on the program, full or part-time options are available. Additionally, some MPH programs, but none of the DrPH programs, are offered both synchronously and asynchronously.

The journal articles found revolved more around the development and methods of evaluating previous leadership training programs. Overall, there are nine common elements among leadership development programs and trainings: formal development opportunities, individual leadership assessment, executive coaching, job assignments/ experiential learning, mentoring, network building, reflection and journaling, action learning, and outdoor challenges. Also, when a program's structure changes, the way that the program is evaluated also needs to change accordingly. One paper found that a state-based training program can be just as helpful as a regional or nationally based training program for department employees.

Program Recommendations

Competencies/objectives/content

1. Ensure competencies and objectives can be objectively measured during training modules.
2. Align competencies and objectives with Foundational Public Health Capabilities and Services.
3. Create required and optional content (please see qualitative data analysis above for an in-depth description of these content areas and associated KSAs).
    - 3.1. Recommended required: Budgeting and projecting, governance structure, day-to-day operations, leadership skills and style, LHO personal development, and systems thinking and change.
    - 3.2. Recommended optional: Public health foundational services, interpersonal communications, human resources, external relationships, quality improvement, public health modernization, health department accreditation.
4. For asynchronous components, consider assigning TRAIN courses such as those identified in the Environmental Scan. Other asynchronous content could include readings, applications (e.g., try this in your health department and reflect on how it went), and/or videos.
    - 4.1. Synchronous and in-person meetings should build upon these asynchronous trainings.
5. Ensure all program content and activities are directly applicable to the LHO position.
    - 5.1. Use real-world approaches, discuss how to apply content/tools, hands-on learning (e.g., learning in the field, role-playing, and skill practice), use adult learning principles, and create a project participants complete that is tied to their position (e.g., creating and completing an individual action plan).
6. Incorporate equity into all content and modules as described in the secondary data analysis (see "Other Trainings" section). Similarly, consider the impact of the COVID-19 pandemic on health department staff that LHOs are leading. For example, when discussing supervision techniques, we recommend incorporating trauma-informed resilience-oriented supervision training.
7. Include a session at the beginning that addresses how to overcome barriers (such as those discussed during interviews) and be successful within the training, including managing time commitment and overcoming failure and feelings of being overwhelmed.

LHO Training Logistics

1. Create a system that determines when a health department has turnover and send the new LHO 1) an invitation to join NACCHO & the corresponding benefits 2) resources for the new LHO (other health departments to connect with, trainings (such as the brief new LHO training described below), and 3) information on when the next new LHO training cohort will begin.
    - 1.1. Create a learning community just for new LHOs every year (e.g., new LHOs 2020, new LHOs 2021) that also has a few experienced LHO members. This learning community could help LHOs share resources and get questions answered from other new LHOs and the experienced LHOs.
2. Create an easily referenced "one-stop-shop" for all things LHOs may need such as names of other LHOs, similar counties to connect with, a curated list (updated on a regular basis) of trainings for LHOs, and a list of additional resources that may be helpful for LHOs (e.g., list serves to be on, other organizations to be aware of).

3. Create a brief training for new LHOs to take within their first month of beginning their position that provides new LHOs with a quick "crash course" on some of the most important LHO topics (e.g., day to day operations, governance structure, and leadership skills and style). This training should reiterate places of support and resources for LHOs.
4. Create a second training for LHOs who have been in their positions for 2+ years that focuses on higher level skills such as creating sustainable partnerships, understanding and applying the biological background of effective leadership strategies, and agency transformations (e.g., modernization, increasing efficiency).
5. Charge a sliding fee for the program based on health department budget.
6. Create Coaches/mentor training to describe the role/responsibility of the coach and best practices for coaching/mentoring.
    - 6.1. Recommended required coach/mentor activities should include: Coach/mentee regular 1-on-1 sessions, Coach/mentee frequent & informal communication, Coaches work with mentees to develop individual action plans and an end-of-program 360 review, Coaches facilitate regular (e.g., weekly) small group discussions.
    - 6.2. Recommended optional coach/mentor activities should include: job shadowing (mentee shadowing coach and coach shadowing/visiting mentee, and additional facilitated networking sessions led by coach).
    - 6.3. Coaches should have their direct expenses reimbursed.
    - 6.4. Coaches should be expected to: commit three hours a week to the program, support their mentee in various capacities, work towards creating a long-term relationship where coaches and mentees continue communication after the program ends, be open to learning from mentees, assist mentees with challenges, and provide mentees with additional knowledge, skills, and abilities above those received in the program.
7. Create small groups led by a coach.
    - 7.1. Small groups should be built based on similar health department sizes first, similar goals second, and geography third. If there are two participants from the same health department, they should be in separate groups.
    - 7.2. Groups should decide together, with mentor recommendations, which optional content to cover when. This way participants have flexibility within the curriculum.
    - 7.3. The coach should lead regular (e.g., weekly) group discussions with their group of mentees with guided and open discussions. The guided discussion would have participants delve further into program content and discuss practical applications. The open discussions would create a safe space where participants discuss challenges they are experiencing talk with other participants and their coach on strategies to address said challenges.
        - 7.3.1. Coaches would need to learn strong facilitation techniques on 1) how to create a safe space, 2) allow discussion on challenges without it becoming a complaint session, and 3) ensure all participants have a chance to talk.
8. Ensure a NACCHO coordinator is available to support coaches and fellows with logistics and challenges and provide overall support and guidance to participants and the program.

9. The overall structure should be hybrid with multiple touch points throughout the program.
    - 9.1. raining should be either one hour a week for 12 months or two hours a week for 6 months.
    - 9.2. Training should be split evenly between virtual and synchronous, virtual and asynchronous, and in-person.
    - 9.3. For the in-person component, training should last between two and three days.
10. Increased fellow program completion could be achieved through:
    - 10.1. Ensuring all participants (fellows, coaches, supervisors, etc.) understand program expectations and sign completion commitment forms.
    - 10.2. Providing accommodations as needed and appropriate that include:
        - 10.2.1. Allowing webcasts to be viewed at any time.
        - 10.2.2. Ensuring coaches provide the support participants need.
        - 10.2.3. Limit "nice to know" to improve time constraint issues.
        - 10.2.4. Tailor program as able to provide an experience that is directly relatable to fellows.
        - 10.2.5. Define program completion (e.g., 75% of activities completed).
        - 10.2.6. Provide make-up activities as needed.
        - 10.2.7. Provide incentives or disincentives (e.g., % of activities completed equals percent of stipend received or % of covered program fee).
11. Consider requiring participants, as part of their program participation, to complete PH WINS, NACCHO profile, and join a NACCHO workgroup and learning community.
12. If having multiple cohorts, increase program fidelity across those cohorts by:
    - 12.1. Creating measurable outputs that can be compared across cohorts.
    - 12.2. Ensure new LHO program trainers are fully following the program.
13. Incorporate NACCHO Annual Meeting into the program at the beginning and end:
    - 13.1. (Beginning) Have the first training session be in-person during NACCHO Annual.
    - 13.2. (Beginning) Have a networking/reunion session during NACCHO Annual for current and past fellows.
    - 13.3. (Beginning) Have mentors and mentees meet in-person at NACCHO Annual.
    - 13.4. (Beginning) Instruct mentors to help mentees network (e.g., through intentional introductions) during NACCHO Annual.
    - 13.5. (End) Have a graduation ceremony (with a certificate) during NACCHO Annual that all current and past fellows are invited to.
    - 13.6. (End) Have a networking/reunion session during NACCHO Annual for current (the new cohort) and past fellows.
14. Create a networking/informational session during NACCHO Annual for persons interested in becoming a LHO to connect with experienced and currently new LHOs (e.g., immediate past fellows).
15. Create additional networking opportunities throughout the year for new and experienced LHOs to connect.

New NACCHO LHO Training Evaluation

Please see Figure 1 for the comprehensive evaluation plan. This plan will (1) provide process metrics to determine extent to which program objectives are met and respond to performance measurement requirements (2) incorporate Rapid Cycle Quality Improvement (RCQI) principles to ensure achievement of program goals (3) focus on program outcomes and impact of NACCHO's initiatives on new LHO workforce support and capacity.

The primary goals of this evaluation will be:

- Operationalize New LHO Training Program to provide new LHOs with the knowledge, skills, abilities, and support needed.
- Conduct ongoing training needs assessments to inform the New LHO Training Program.
- Develop training to provide new LHOs with the knowledge, skills, and abilities needed.
- Effectively disseminate program outputs to key target audiences.
- Facilitate new LHO development activities to impact participants' local health departments and communities.
- Conduct program evaluation of measurable outcomes to inform quality improvement efforts and assess the New LHO Training Program impact.
- Secure additional funding to continue providing training and support to LHOs.

The evaluation will use a mixed methods approach of qualitative and quantitative data collection through surveys, open-ended questions, ripple-effect mapping, key informant interviews, administrative data collection, and participant observations. These data will be collected to guide the training evaluation efforts.

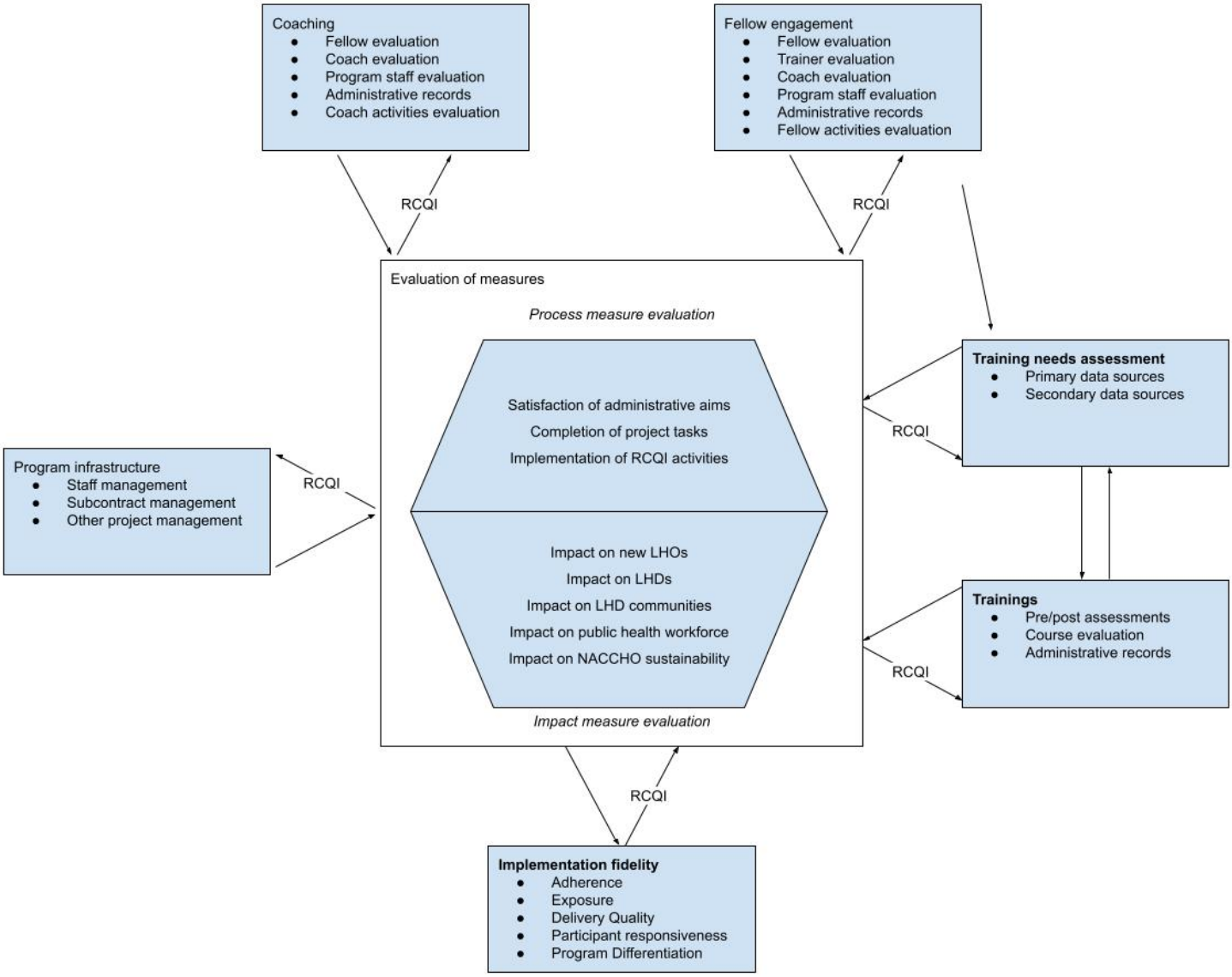
The fundamental approach of NACCHO New LHO Training evaluation is divided into process and impact measures (Figure 1). Process measures are organized around major project goals and have concrete tasks associated with coaching, fellow engagement, training needs assessment, trainings, implementation fidelity, and program infrastructure. During the program planning phases, primary process-related goals with quantified outcomes will need to be created. A few examples are:

- Select 100 new LHOs and 20 coaches for new LHO program
- Increase fellow knowledge, skills, and abilities by 20%

Impact measures will be related to goals representing a synthesis of project activities. The impact measures could be evaluated through pre/post coach-conducted 360 reviews of fellows and ripple effect mapping to explore impact of program on LHDs, communities, and the public health workforce. Impact measures will also be evaluated through national surveys including PH WINS and NACCHO Profile.

Rapid cycle quality improvement (RCQI) should be conducted on a quarterly basis (based on a 12-month long program). RCQI should focus on fellows' performance management and the impact of the coaches, program infrastructure, and training on fellow performance within their LHD.

Figure 6.1. Comprehensive New LHO Training Program Evaluation.



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