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Let Me Upgrade You: Common Measures in Public Health Accreditation Action Plans

Gurleen K. Roberts

LET ME UPGRADE YOU:

COMMON MEASURES IN PUBLIC HEALTH ACCREDITATION ACTION PLANS

by

GURLEEN K. ROBERTS

(Under the Direction of James H. Stephens)

ABSTRACT

Objectives: The purpose of this study is to understand the success rates for health departments pursuing and achieving accreditation in version 1.0 and 1.5 of the Public Health Accreditation Board (PHAB) standards and measures. During the accreditation process, health departments that present performance gaps are asked to complete an Action Plan to specify how they plan to improve to meet the desired conformity. This study will highlight specific measures that are often included in Action Plans so that health departments pursuing accreditation can be better prepared to address these common pitfalls. Methods: This study is a non-experimental, secondary analysis of cross-sectional PHAB data available as of May 2018. This is a quantitative analysis utilizing logistic regression to determine association between variables. The sampling frame for this study includes 223 accredited health departments from 2013 to May 2018. Results: The five measures most commonly included in public health accreditation Action Plans include 5.2.4 (implementing a Community Health Improvement Plan), 5.3.3 (implementing a Strategic Plan), 9.1.3 (implementing a Performance Management System), 9.2.2 (implementing quality improvement), and 9.1.4 (implementing customer satisfaction process). The top five measures included in Action Plans are all focused on implementation of the associated plans or processes included in Domains 5 and 9. Conclusions: To avoid common pitfalls of public health accreditation, health departments still in pursuit of accreditation that want to avoid getting an

Action Plan should allow one to two years between plan development and applying for accreditation to allow enough time to produce at least one annual report evaluating implementation of plan goals and objectives. Small and medium local health departments should consider this specifically for the implementation of their performance management system, which is frequently included in Action Plans.

INDEX WORDS: Accreditation, Local health department, State health department, Domain, Action plan, Public health, Standards and measures, PHAB

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DEDICATION

This is for you, Efrem. Thank you for supporting me to achieve my dreams. And for making sure I ate three meals a day.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

When you have seen one health department, you have seen one health department. This is a common phrase heard when describing the complicated public health system in the United States, whose variations have been historically defined by how governmental roles and responsibilities have been created at the federal, state, and local levels. Public health is mainly a local and state governmental function; however, the federal government has the resources, expertise, and obligation to support state and local public health agencies in assessing and recommending improvements for the health of all Americans (Institute of Medicine, 2003). This fragmentation caused by state and local variation has made it difficult to compare the performance of health departments across the nation and assess the impact of health department activities to determine if the public's health is indeed improving. In 2003, the Institute of Medicine (IOM) released a report titled *The Future of Public Health in the 21st Century* that recommended the creation of an accreditation process for health departments to improve infrastructure, assure the quality of services, and measure performance of activities to achieve desired outcomes (pp. 8-9).

After five years of research and planning, the Public Health Accreditation Board (PHAB), a non-profit organization, was incorporated in 2007 to govern the voluntary accreditation process. Over the next three years and a period of beta testing, draft requirements to assess health department performance were developed, known as version 1.0 of the PHAB standards and measures. PHAB involved many public health professionals in the process of developing and refining these requirements. These are organized in 12 domains. The first 10

domains cover the 10 Essential Public Health Services (EPHS), Domain 11 covers administration and finance processes, and Domain 12 addresses governance. Each domain has a minimum of two standards that must be addressed to meet expectations; consequently, each standard is complemented by measure(s) that require documentation to prove completion.

These standards and measures apply to all state, local, tribal, and territorial health departments. A state health department is defined by PHAB as "the entity with primary statutory authority to promote and protect the public's health and prevent disease in humans in the state" (Public Health Accreditation Board, 2015, p. 5). PHAB defines a local health department as "the governmental body that is authorized to serve a jurisdiction or group of jurisdictions geographically smaller than a state and recognized as having the primary legal authority to promote and protect the public's health and prevent disease in humans" (Public Health Accreditation Board, 2015, p. 6). A tribal health department is "a federally recognized Tribal government, Tribal organization, or inter-Tribal consortium, as defined in the Indian Self-Determination and Education Assistance Act as amended" (Public Health Accreditation Board, 2015, p. 6). Lastly, a territorial health department is defined by PHAB as "the entity with primary responsibility for public health in these territorial areas: U.S. territories (Puerto Rico, Guam, U.S. Virgin Islands) and U.S. affiliates in the Pacific (American Samoa, the Republic of Palau, Federated States of Micronesia, Marshall Islands, and Mariana Islands)" (Public Health Accreditation Board, 2015, p. 6).

Also, these standards and measures vary slightly based on category and version of the standards and measures used. In version 1.0 of the standards and measures, there are 99 total measures for tribal health departments, 105 total measures for state health departments, and 97 total measures for local health departments that must be met to achieve accreditation status. In

version 1.5, there are slightly more measures, totaling 102 for tribal health departments, 108 for state health departments, and 100 for local health departments. Each measure is graded in four categories, including fully demonstrated, largely demonstrated, slightly demonstrated, and not demonstrated. The first 11 health departments were awarded five-year accreditation status in 2013 after meeting performance requirements under version 1.0 of the standards and measures (Bender, Kronstadt, Wilcox, & Lee, 2014). Version 1.5 of the standards and measures went into effect on July 1, 2014. This updated version was revised based on feedback from the field to provide clarity on wording and timeframe for requirements, along with adding a few additional requirements (2018c). As of May 2018, approximately 13% (290 out of 2,309) of health departments have been accredited under version 1.0 and 1.5, including 31 state health departments, 191 local health departments, one tribal health department, and one statewide integrated local health department system consisting of 67 local health departments (Healthy People 2020, 2014; Public Health Accreditation Board, 2018a, 2018b).

Although Domains 5 and 9 cover the fifth and ninth EPHS that have been in place for over a decade, these domains ask health departments to show evidence of infrastructure that was not expected previously. Particularly, these domains emphasize the creation of written and living plans that help build a health department's capacity, assess its performance, and improve its impact. Because of this new infrastructure standardization, plan development and documentation may prompt additional support and planning to meet these requirements.

Domain 5 of the standards and measures focuses on developing public health policies and plans; specifically, looking at the creation and implementation of three plans, including a community health improvement plan (CHIP), an organizational strategic plan, and all-hazards emergency operations plan (EOP). To be effective, the health department must be deliberate

about engaging community members, stakeholders, and partners to make these living documents with actionable plans to improve the health of the entire population served. All of these plans have associated measures to track progress on implementation, which must be provided as evidence to meet Domain 5 requirements (Bender, 2012, p. 161).

Domain 9 of the standards and measures looks at how the health department evaluates and improves processes, programs, and interventions. The two standards focus on developing and implementing an agency performance management system and quality improvement efforts. The link is important here because the performance management system can identify gaps in performance, which can be improved through quality improvement projects; therefore, working hand-in-hand to create an agency culture of quality (Bender, 2012, p. 162).

Purpose Statement

The purpose of this study is to understand the success rates for health departments pursuing and achieving accreditation in version 1.0 and 1.5 of the PHAB standards and measures. This study will highlight specific measures that are included in Action Plans so that health departments pursuing accreditation can be better prepared to address these common pitfalls.

Research Questions

The research questions for the study include the following:

1. Which measures are most often included in Action Plans in version 1.0 and 1.5 of the PHAB standards and measures? Of these, which are specific to Domains 5 and 9?
2. Of the Domain 5 and 9 measures most often included in Action Plans, is it more likely that local health departments perform in the “not demonstrated” or “slightly demonstrated” categories compared to state health departments?

3. Of the Domain 5 and 9 measures most often included in Action Plans, is it more likely that small or medium-sized local health departments perform in the “not demonstrated” or “slightly demonstrated” categories compared to large local health departments?

Hypotheses

To pursue the research questions, the following hypotheses will be tested:

1. Research Hypothesis 1: The measures most often included in Action Plans in version 1.0 and 1.5 of the PHAB standards and measures are specific to Domains 5 and 9.

   Null Hypothesis 1: The measures most often included in Action Plans in version 1.0 and 1.5 of the PHAB standards and measures are NOT specific to Domains 5 and 9.
2. Research Hypothesis 2: Of the Domain 5 and 9 measures most often included in Action Plans, local health departments are more likely to perform in the “not demonstrated” or “slightly demonstrated” categories compared to state health departments.

   Null Hypothesis 2: Of the Domain 5 and 9 measures most often included in Action Plans, local health departments are NOT more likely to perform in the “not demonstrated” or “slightly demonstrated” categories compared to state health departments.
3. Research Hypothesis 3: Of the Domain 5 and 9 measures most often included in Action Plans, small and medium local health departments are more likely to perform in the “not demonstrated” or “slightly demonstrated” categories compared to large local health departments.

   Null Hypothesis 3: Of the Domain 5 and 9 measures most often included in Action Plans, small and medium local health departments are NOT more likely to perform in the “not demonstrated” or “slightly demonstrated” categories compared to large local health departments.

Significance of the Study

Because of the limited experience of the public health accreditation process, a robust body of research on the success of the process is lacking; therefore, identifying the commonly missed measures in the PHAB standards and measures will help fill an important gap in accreditation research. This study will be beneficial for multiple stakeholders, including health departments contemplating the idea and those already committed to pursuing accreditation, agencies supporting these efforts, and PHAB. This study's findings will increase confidence of health departments still pondering the idea by being able to self-evaluate against the identified gap areas to finalize their decision to apply and if applicable, make plans to improve these key areas. Health departments considering applying for accreditation will benefit from knowing the commonly missed requirements so that they can proactively prepare and strengthen those areas prior to submitting their materials. Agencies supporting accreditation efforts, such as funders, can benefit from these findings because they can strategically plan their resources and funding opportunities to provide increased support in the areas that health departments truly need it. Lastly, PHAB would benefit from this study by increasing the research base for accreditation by answering one of the six research questions released by PHAB in 2017, specifically asking for barriers and facilitators of seeking and obtaining accreditation (p. 1). PHAB would also gain value from these findings by understanding the measures that could benefit from obtaining additional guidance and for consideration of clarifying these requirements in the next iteration of the standards and measures.

Furthermore, success with measures in Domains 5 and 9 will provide useful information about the ability of health departments to build infrastructure to better support improvement of the nation's health. These findings will provide further insight into whether state or local health

departments encounter different types or different quantities of barriers to build this infrastructure. This study will also be beneficial for public health policy makers to consider whether the current amount of funding for infrastructure is adequate to address the IOM's 2003 call to action to improve public health infrastructure.

CHAPTER 2

LITERATURE REVIEW

Background

Three decades ago in 1988, the Institute of Medicine (IOM) released a report titled *The Future of Public Health,* which clarified the mission and role of public health in America and served as a call to action to strengthen governmental public health infrastructure at local, state, and federal levels. The Committee for the Study of the Future of Public Health defined the mission of public health to be "the fulfillment of society's interest in assuring the conditions in which people can be healthy" (Institute of Medicine, 1988, p. 40). The government's role in fulfilling this mission is to *assess* problems, *develop policies* to mobilize resources, and *assure* the environment in which services can be received (p. 43). The public health system is complex because governmental public health agencies at the federal, state, and local levels cannot accomplish this mission alone; therefore, they partner and collaborate with numerous stakeholders, such as public, private, and voluntary entities that contribute towards this shared goal (Centers for Disease Control and Prevention, 2018). This web of collaboration is depicted in Figure 1 below.

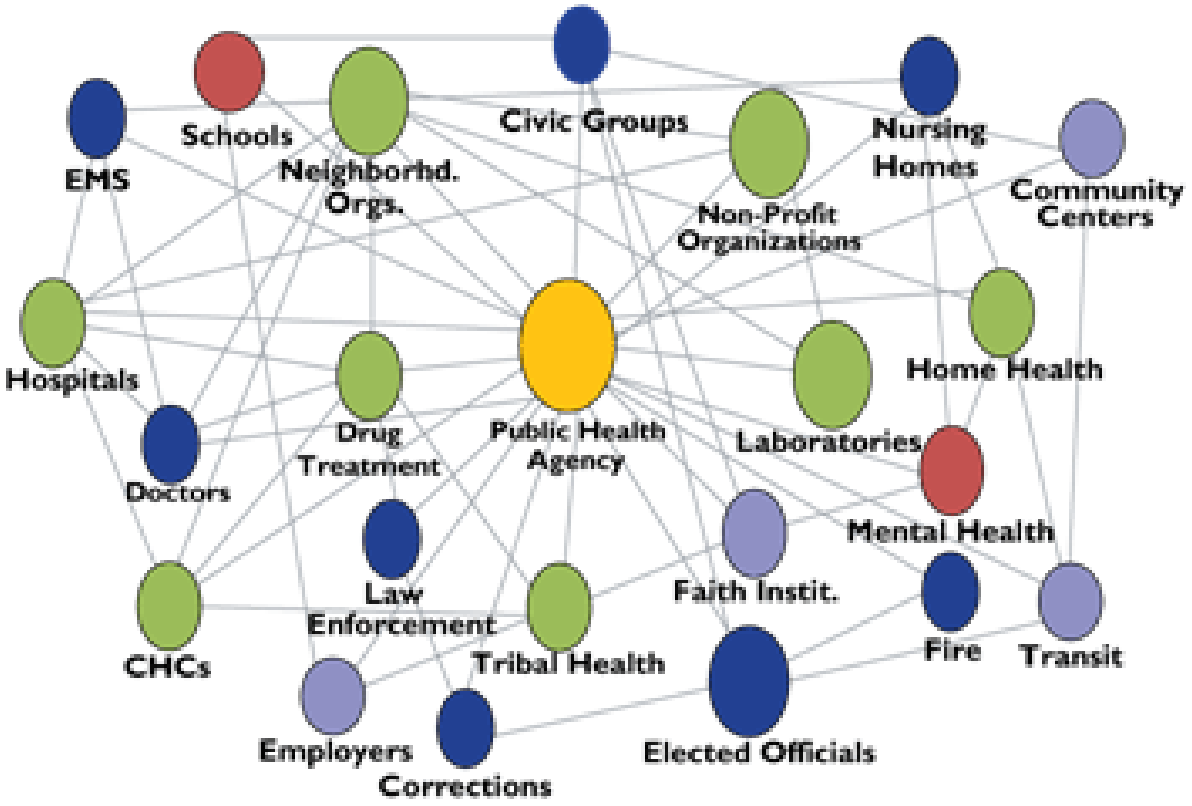

Figure 1. Public Health System.

The National Association of County and City Health Officials (NACCHO) defines a local health department as "an administrative or service unit of local or state government, concerned with health, and carrying some responsibility for the health of a jurisdiction smaller than the state" (2016, p. 12). Based on this definition and Healthy People 2020 goals, the U.S. is estimated to have 2,309 health departments(Healthy People 2020, 2014). When working collaboratively, this vast and complicated public health system has shown success with reducing illness and preventing deaths through immunizations, water quality control, and restaurant inspections (Institute of Medicine, 1988, p. 35). Thus, strengthening public health infrastructure will lead to improved performance of public health agencies at the federal, state, and local levels; furthermore, improving health outcomes for all Americans.

History of Performance Standards

To be able to successfully compare performance amongst health departments, it helps to have some kind of benchmark to strive towards. It was not until 1994 that this type of performance benchmark was invented by the Core Public Health Functions Steering Committee, formally known as the 10 Essential Public Health Services (EPHS), depicted in Figure 2 (Centers for Disease Control and Prevention, 2018). This prescriptive list further defined the IOM's 1988 role of governmental public health, such that all health departments should partake in assessment, policy development, and assurance.

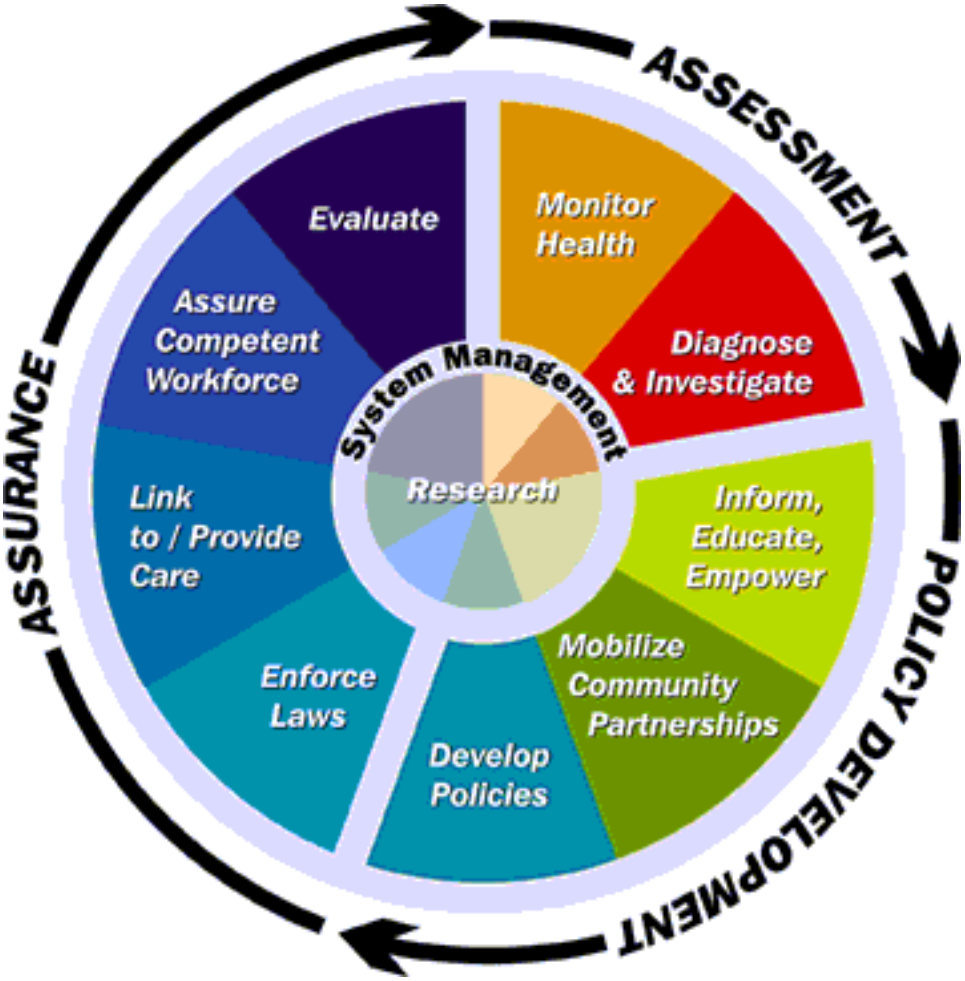

Figure 2. 10 Essential Public Health Services.

In 1998, the National Public Health Performance Standards Program (NPHPSP) was initiated to further the IOM's vision of *The Future of Public Health*. The NPHPSP attempts to use performance measurement to organize public health around the delivery of the 10 EPHS (Institute of Medicine, 2003, p. 155). By measuring performance in this manner, a standard for performance could be created; moreover, an accreditation process could be created to implement a benchmark for health department performance. Accreditation processes have been successful in standardizing and improving performance for the healthcare and academic industries, which public health could also benefit from. The IOM recognized this gap in their 2003 report titled *The Future of the Public's Health in the 21st Century* and recommended that the Secretary of the Department of Health and Human Services appoint a committee to research whether a national accreditation program would be useful to increase capacity of public health agencies (p. 158).

Based on this recommendation, the Centers for Disease Control and Prevention (CDC) identified accreditation as a fundamental strategy to increase public health capacity in 2004. Furthermore, the CDC and the Robert Wood Johnson Foundation funded the Exploring Accreditation Project in 2005, charging a 25-member steering committee to investigate desirability and feasibility of public health accreditation. This committee was comprised of representatives from the local, state, and federal levels, along with academia. These individuals form four subgroups for governance and implementation, finance and incentives, research and evaluation, and standards development. A proposed model for accreditation was created and distributed for feedback through emails, surveys, satellite broadcast, public presentations and conference calls. In 2006, the Exploring Accreditation Project Steering Committee released their final recommendations in support of pursuing a voluntary public health accreditation program to

proactively improve quality, credibility, and accountability of governmental public health departments (Exploring Accreditation Project, 2006, p. 6).

At the same time as the Exploring Accreditation Project, a parallel effort was funded by the Robert Wood Johnson Foundation in 2005 called the Multistate Learning Collaborative. This was a learning community of states that were implementing innovative performance and capacity assessment or accreditation programs. The objectives of the Multistate Learning Collaborative were to advance existing public health performance assessment or accreditation programs in five states through grant support, convene representatives from these states to share experiences, and guide public health accreditation efforts. Out of 18 applicants, five states were chosen, including Illinois, Michigan, Missouri, North Carolina, and Washington. These states received a 1-year grant of up to $150,000 to support their existing accreditation or performance assessment efforts. The lessons learned from this grant-year bring a wealth of knowledge to the accreditation discussion because these are practice-based examples of how large public health systems are attempting to improve their performance. A few shared discoveries from these five states show that precursors of current activities began a decade before, strong partnerships are required to implement projects of this scope, existing best practices are adapted and used, evaluation and self-assessment are integral components, and quality improvements efforts are underway (L. Beitsch et al., 2006). The scale of interest in the Multistate Learning Collaborative and the quality of the 18 applications suggests that there already is a movement towards national public health accreditation (L. Beitsch, Mays, Corso, Chang, & Brewer, 2007).

As a result of the Exploring Accreditation Project and the Multistate Learning Collaborative, the Public Health Accreditation Board (PHAB) was incorporated in 2007 with funding from the CDC and Robert Wood Johnson Foundation to oversee the accreditation

process. PHAB's incorporation is critical to promote impartiality and eliminate conflict of interest, while also serving as the accrediting entity (Bender et al., 2014; Exploring Accreditation Project, 2006).

Public Health Accreditation

Public health accreditation is voluntary. This decision was made after Thielen et al. (2004) wrote a report for The Robert Wood Johnson Foundation reviewing the historical positions that the major public health organizations have taken on accreditation and comparable programs. Two of these exemplary examples include the state of Missouri's Department of Health and Senior Services and Project Public Health Ready, both of whom have voluntary models for accreditation that lead to PHAB's voluntary accreditation process (pp. 25-26, 35-36). Additionally, it has been proposed to link federal funding to accreditation based on public health performance standards, however, states and localities that do not receive most of their funding from federal agencies may not be incentivized by this. This situation could change if a long-term federal investment was made at the state and local levels, but for now, this supports a voluntary process (Institute of Medicine, 2003, p. 157). Furthermore, The Exploring Accreditation Project heard concerns from the field that that there is a fear that accreditation will eventually become mandatory. This concern shaped final recommendations that incentives should be positive for accredited health departments and not punitive for the unaccredited ones. A voluntary process will motivate early adopters to apply and discourage those lacking resources from applying. The initially discouraged health departments will want to see a return on investment and understand the benefits in order to persuade themselves to pursue accreditation (Exploring Accreditation Project, 2007, p. 44).

The goal of PHAB's national voluntary accreditation process is "to improve the health of the public by advancing and ultimately transforming the quality and performance of state, local, tribal, and territorial public health departments" (Public Health Accreditation Board's Research and Evaluation Committee, 2017). To visualize this goal, PHAB released a logic model in 2017, depicted in Figure 3. This tool shows the systematic connection between the inputs and outputs of PHAB, public health stakeholders, and health departments to the expected short, mid-, and long-term outcomes of transforming the public health system.

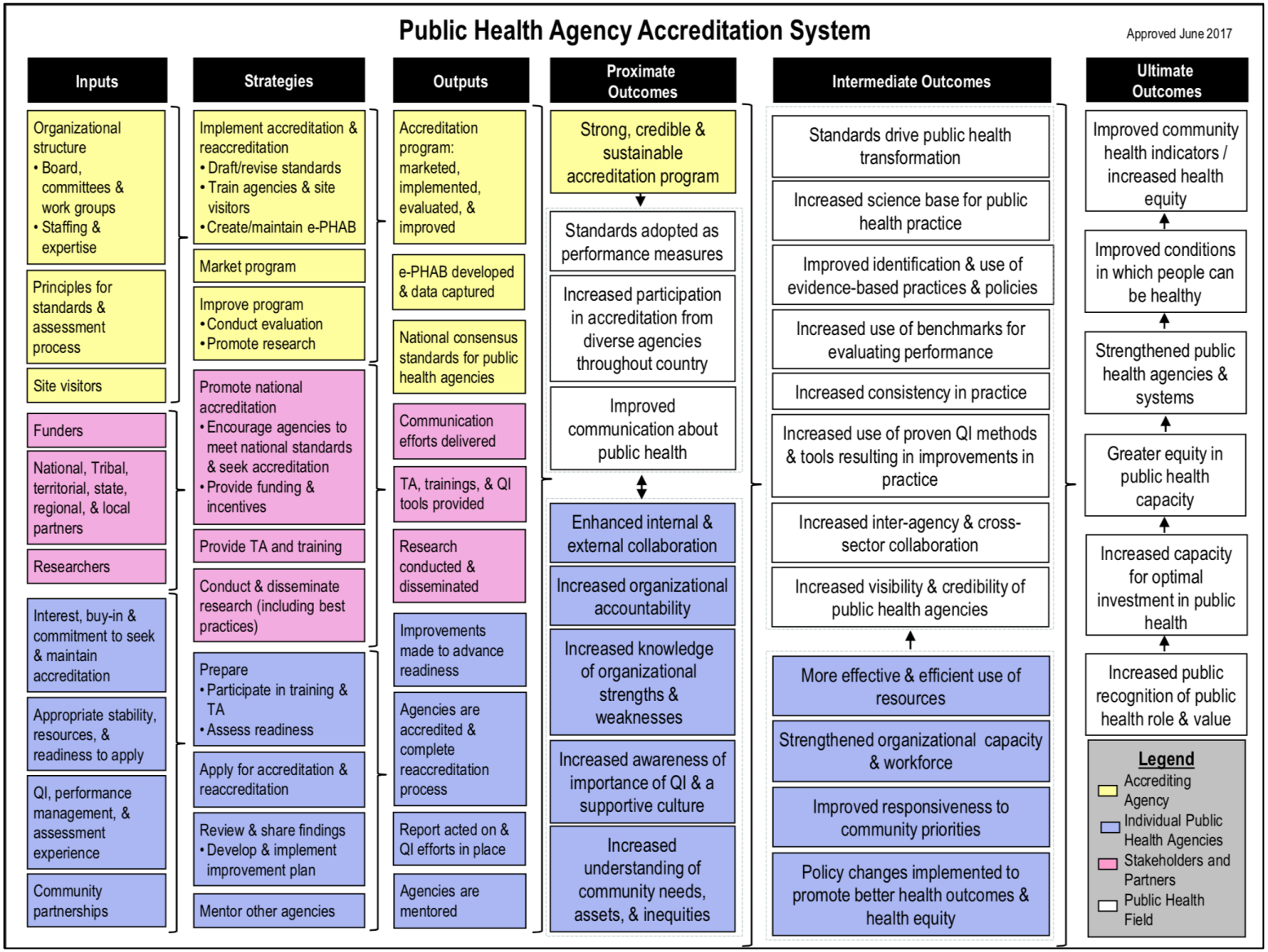

Figure 3. Public Health Agency Accreditation System Logic Model.

In 2007, PHAB's Board of Directors created a Standards Development Workgroup that encompassed public health professionals, experts, and researchers that began working on a set of standards to build off of the NPHPSP and other existing frameworks. To provide clarity between standards and accreditation, *standards* can be defined as "qualitative statements that reflect research-based best practices for a health department and function as the minimum requirement to achieve accreditation," and *accreditation* can be defined as "the process by which an identified set of standards is utilized to evaluate an organization's performance and determine whether those standards have been met" (Bender, 2012, p. 156). The draft standards were alpha tested through a desk review with 8 health departments and a public vetting period; additionally, they were beta tested with 30 health departments varying in size, organizational structure, and scope. The beta test was also evaluated by the National Opinion Research Center at the University of Chicago, and these findings were used to update version 1.0 of the standards and measures prior to their release in 2011 (Bender, 2012, p. 157; Bender et al., 2014).

Accreditation Process

The accreditation process was launched in 2011, consisting of seven steps: pre-application, application, documentation selection and submission, site visit, accreditation decision, reports, and reaccreditation. First, the *pre-application* step covers the health department's assessment of accreditation readiness, participation in online orientation, and communication of intention to apply. Second, the *application* is submitted online, including the payment of associated fees related to the population served, and then the health department's Accreditation Coordinator must attend an in-person training at PHAB headquarters in Alexandria, Virginia. Third, health departments must *select documentation* to meet each measure, *upload* all materials to the e-PHAB online portal, and submit it. Fourth, a two-day *site*

visit is conducted by a three- or four-person PHAB-trained site visit team, resulting in a site visit report. This site visit report consists of the site visitors' assessment of each measure with the following categories of conformity: fully demonstrated, largely demonstrated, slightly demonstrated, and not demonstrated. Fifth, PHAB's Accreditation Committee reviews the site visit report and either determines that the health is *accredited* or is required to submit an Action Plan. After the Action Plan process, the Accreditation Committee makes a final determination of either *accredited* or *not accredited*. Sixth, once accredited, health departments are required to submit *annual reports* for the next four years to share progress on accreditation-related activities. Seventh, after five years of accreditation, the health department must submit a new application for *re-accreditation* (Public Health Accreditation Board, 2018c).

Action Plans

If PHAB's Accreditation Committee decides it is not ready to accredit a health department based on the site visit report, that health department is given an opportunity to submit an Action Plan within 90 days. An Action Plan is a document completed by the health department that specifies exactly what they plan to do to adequately improve the measures that are prohibiting them from being accredited. If the health department chooses not to submit an Action Plan, they are considered to be not accredited. The Action Plan is designed to encourage improvement in areas that are critical to being accredited. A list of measures for improvement will be provided by the Committee, which are typically assessed as "not demonstrated" and/or "slightly demonstrated;" however, not all measures assessed in these two categories are required to be in the Action Plan. A template for the Action Plan is provided by PHAB and outlines steps, actions, and improvements that the health department plans to implement over the next year to improve conformity with the assigned measure(s). Once the health department submits their

Action Plan and the Committee accepts it, the health department must implement it within one year and submit an Action Plan Report that summarizes progress at the end of the year. Next, the Site Visit Team assesses the report for conformity and the Committee reviews this assessment to decide whether the health department is now eligible to earn accreditation (Public Health Accreditation Board, 2015, pp. 25-26). Data are not publicly available on which health departments are required to do Action Plans.

Accreditation Scope

Since PHAB's model for accreditation is based on the 10 EPHS (Figure 2), activities outside of this framework is out of PHAB's scope and is not a part of public health accreditation. The 10 EPHS outlines how health departments provide public health services to the community, which does not include individual, personal, or clinical services provided on a one-on-one basis. Consequently, services such as mental health, substance abuse, primary care, human services, and social services are not covered under PHAB's jurisdiction. However, PHAB does accept documentation for some of these services if they are provided to the entire population. For example, PHAB will accept documentation for health education on the benefits of dental hygiene that is provided at a public event, but not for individual dental services provided to patients. Another example of PHAB's scope includes the education of properly using condoms for disease prevention, but will not include individual HIV testing and counseling (Public Health Accreditation Board, 2013, pp. 9-10).

Strengthening Health Department Infrastructure

Prior to accreditation, capacity-building activities such as assessing, planning, and evaluating were not routinely a large part of daily health department processes. These were done reactively or as needed for grant-writing, funding or audit requirements, etc. PHAB has

interweaved capacity-building requirements throughout the accreditation standards and measures, most of which encompass the following seven plans/systems: Community Health Assessment, Community Health Improvement Plan, Strategic Plan, Emergency Operations Plan, Quality Improvement Plan, Workforce Development Plan and Performance Management System. Each of these requires a great deal of resource investment to establish and maintain. Because five of these seven requirements fall within Domains 5 and 9, health departments must be more deliberate in meeting these standards and measures.

Domain 5: Develop public health policies and plans

This domain requires health departments to engage multiple internal and external stakeholders and foster collaboration to create actionable plans to improve the health of the community served (Bender, 2012, p. 161). Although the following collective planning processes are exhaustive and time-consuming, they result in a shared vision, direction, and accountability that all stakeholders helped create, thus, are more likely to be engaged (Cothran & Clouser, 2009). PHAB wants to see the cohesive planning processes, evidence of implementation of each plan, and evaluation/revision of each plan on a regular basis. Domain 5 specifies that health departments have a Community Health Improvement Plan (CHIP), agency Strategic Plan (SP), and an agency Emergency Operation Plan (EOP).

The Community Health Improvement Plan (CHIP) is a result of assessing the needs of the community, prioritizing these needs, and planning how to address a few prevalent needs. To begin this process, a health department's epidemiology and surveillance efforts help provide health data about the community and are most commonly depicted in a Community Health Assessment (CHA). The CHA is very similar to a hospital's Community Health Needs Assessment (CHNA), required by the Affordable Care Act. Once an assessment is completed,

the health department must lead or participate in a priority setting event with community members, partners, organizations representing multiple sectors, and representatives of the public health system from Figure 1. Once priorities are agreed upon, the health department must help the CHIP team identify cost-effective, community-based interventions to prevent disease, injury, and disability (Institute of Medicine, 2012, pp. 148, 163). After the CHIP is written, including Action Plans, the health department must show progress on implementation and evaluation annually. In order for this process to be managed effectively, health departments must dedicate staff time for management of the CHIP, and collaboration and engagement of community partners. This can be challenging with already stretched budgets, so health departments have tried to think of innovative ways to build this capacity. Carlton & Singh (2018) assessed the association between hospitals and health departments collaboratively completing a CHNA and found that when hospitals and health departments work together, they are more likely to be involved in joint implementation planning activities. More importantly, Carlton et al., concluded that when health departments are involved in hospitals' improvement efforts, hospitals are more likely to invest in community health improvement initiatives; furthermore, this helps to build capacity for health departments. Kronstadt, Chime, Bhattacharya, & Pettenati (2018) assessed 158 CHA/CHIP processes submitted as a part of the accreditation process, reflecting that health departments are engaging a broad range of community partners to improve their communities' health. This study shows the most commonly reported collaborations include hospitals and health care agencies, nonprofit service organizations, educations, business, and faith-based organizations. Kronstadt et al., also discussed that small local health departments are more likely to engage a wider variety of stakeholders due to the limited nature of available partners.

An agency Strategic Plan (SP) is a roadmap of where an agency wants to be in three to five years. In order to write a SP, a strategic planning team must undertake a strategic planning process, defined by John Bryson (2017) as "a deliberative, disciplined approach to producing fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it" (p. 34). A few key steps in strategic planning include identification of the agency's strengths, weaknesses, opportunities, and threats; establishing current vision and mission statements; using data from various sources, such as CHA, CHIP, and stakeholder input, to identify and prioritize performance gaps; and declaring resources and action steps for how to reduce these priority gaps (Bryson, 2017; Cothran & Clouser, 2009). Once the SP is written, implementation of the plan must be managed by a staff member to provide accountability. To meaningfully implement a SP, discretionary budgetary resources should be aligned with strategic priorities so that progress can be made towards improving strategic priority gaps.

The agency Emergency Operation Plan (EOP) describes how the health department will collaboratively respond to an emergency during a disaster and similar emergency events that build community resilience over time. Health departments play a critical role in preparing and coordinating a response to a disaster, including natural disasters (floods, earthquakes, tornadoes), manmade or technological disasters (bridge or building collapses, nuclear or chemical attacks), and terrorism events (biological, chemical, radiological, bombings). Domain 5 requirements not only want to see the collaborative nature of creating the EOP but testing implementation of the EOP with real world emergencies, or mock emergencies if real world is not available. After these tests, an after-action report must be written that summarizes the debrief of the exercise and identifies opportunities for improvement for the next time a similar event occurs (Public Health Accreditation Board, 2013, pp. 149-151). PHAB's EOP requirements are based on state-based

accreditation programs, such as the North Carolina Local Health Department Accreditation Program, which showed that accredited health departments are more likely to respond sooner and perform higher in the preparedness areas of planning, communication, incident command, investigation, response/mitigation compared to non-accredited health departments (Davis et al., 2011).

Domain 9: Evaluate and Continuously Improve Processes, Programs, and Interventions

Domain 9 broadly covers the health department's integration of its performance management system and quality improvement (QI) plan; specifically, how the health department assesses its internal performance towards progress on organizational objectives, identifies gaps where measures are not reaching targets, and implements QI efforts to advance towards desired targets. The underlying push behind improving a health department's performance is because this results in healthier people and healthier communities (Public Health Accreditation Board, 2013, p. 203; Riley et al., 2010).

The Public Health Foundation (Public Health Foundation) theoretically defines performance management as "a systematic process which helps an organization achieve its mission and strategic goals by improving effectiveness, empowering employees, and streamlining decision making." In the real world, performance management is simply the use of data to provide information on trends and gaps in performance. Performance management systems strategically select performance standards and measures, routinely discuss results, and report progress on QI efforts so that agency goals are met. Domain 9 requirements highlight a health department's performance management system, engagement of staff in these activities, and the use of customer satisfaction results to guide decision making and improvement efforts. This requirement for managing a robust agency-wide performance management system,

including assessment of customer satisfaction, requires not only staff time, but also investment in knowledge of evaluation, systems, and training. The benefits of this investment include transparency, prioritization, and enhanced decision making (Chapman, 2018). Furthermore, accreditation efforts are driving performance management across the nation, as reflected in the 2016 National Association for County and City Health Officials (NACCHO) Profile of local health departments. This assessment found that accredited health departments are more likely to use performance data on an ongoing basis to drive improvement efforts (Chapman, 2018; National Association of County and City Health Officials, 2016). For example, Ingram, Mays & Kussainov (2018) assessed multiple public health systems containing accredited and non-accredited health departments spanning from 2006 to 2016 and found early evidence that supports the notion that accreditation is an effective means to improve the quality of public health service delivery by local public health systems.

QI has been occurring in the manufacturing and healthcare industries for decades to improve service delivery and process performance; however, its migration into public health is relatively new. QI in public health is “the use of a deliberate and defined improvement process, such as Plan-Do-Check-Act (PDCA cycle), which is focused on activities that are responsive to community needs and improving population health” (Riley et al., 2010). Simply put, QI focuses on continuously improving a process. This improved process results in a higher quality process outcome that may be more efficient, effective, and ultimately achieve equity by improving the health of the community. Domain 9 requirements want to see a robust QI plan, resulting QI activities, and staff engagement in QI efforts. Because QI challenges the status quo, implementing projects to improve performance leads to a culture shift over several years.

Managing an agency's QI plan, projects, teams, training, communications, etc. requires a significant investment of staff time and resources for training.

Consequently, the difficulty of preparing for this domain's requirements was evaluated by the National Public Health Improvement Initiative. This initiative was facilitated by the CDC from 2010 to 2014 to provide financial and technical support to 73 state, local, tribal, territorial health departments to increase accreditation readiness. These health departments self-reported that the standards with the most gaps in accreditation readiness were 9.1 (use a performance management system to monitor achievement of organizational objectives) and 9.2 (develop and implement QI processes integrated into organizational practice, programs, processes, and interventions) (Rider, Frazier, McKasson, Corso, & McKeever, 2017). Furthermore, health departments are able to successfully close these gaps in readiness, although it takes longer than other domains.

On the contrary, this infrastructure investment leads to significant return on investments. For example, Beitsch, Kronstadt, Robin & Leep (2018) found that health departments that were accredited and those in process of applying for accreditation reported more formal QI activities and showed greater improvements with QI and performance management implementation over time than health departments not undertaking accreditation. A more specific example can be seen in the New Orleans Health Department, which earned accreditation in June 2014, and showed increased capacity to do QI projects because they were accredited. One of the projects Cain & Collins (2018) describe resulted in increased patient participation in three out of four programs because of a QI-driven solution to enhance outreach to healthcare institutions. From local to tribal to state health departments, there are many success stories related to implementing QI.

Additionally, PHAB released a document summarizing health department performance with Domain 9 measures, including the frequency of these measures in Action Plans that is reflected in Table 1. These data reflect 259 health departments, of which 179 were reviewed under version 1.0 of the standards and measures and 80 under version 1.5. Most notable, measures 9.1.3, 9.1.4, and 9.2.2 were most commonly assessed as "not demonstrated" or "slightly demonstrated". Also, 9.1.2, 9.1.3, 9.1.4, and 9.2.2 were the most common Domain 9 measures in Action Plans (Public Health Accreditation Board, 2018d, p. 1).

Table 1

PHAB's Assessment of Health Department Performance with Domain 9 Measures

	Conformity				
Measures	Fully Demonstrated	Largely Demonstrated	Slightly Demonstrated	Not Demonstrated	Action Plans
9.1.1	60.6%	25.5%	13.9%	9.7%	12.0%
9.1.2 (v1.0)	83.2%	8.9%	7.8%	6.7%	5.0%
9.1.2 (v1.5)	62.5%	20.0%	17.5%	12.5%	18.8%
9.1.3 (v1.0)	45.3%	27.9%	26.8%	22.3%	17.9%
9.1.3 (v1.5)	38.8%	35.0%	26.3%	23.8%	22.5%
9.1.4 (v1.0)	55.9%	26.3%	17.9%	12.8%	12.8%
9.1.4 (v1.5)	16.3%	50.0%	33.8%	27.5%	23.8%
9.1.5	74.5%	13.9%	11.6%	7.7%	8.5%
9.1.6 S	79.4%	14.7%	5.9%	5.9%	2.9%
9.2.1	63.3%	22.4%	14.3%	12.7%	10.4%
9.2.2	47.5%	27.0%	25.5%	20.1%	17.4%

Benefits of Accreditation

Accreditation offers multiple expected and unexpected benefits for individual health departments and the public health system. Russo (2007) described three obvious benefits that accreditation provides, such as serving as a benchmark for consistency of standards for public health services that should be met in every community across the nation; creating a platform for QI that improves quality of services and improves health outcomes of the community; and serving as a means for documenting accountability to the public and policy makers by showing performance data related to fund allocations. In addition to these expected returns, Russo also mentions several unanticipated gains of applying for accreditation including, improved staff morale and increased awareness of each other's activities, leading to increased collaboration; providing an effective way to share information and resources within an industry; promoting regionalizing to meet shared goals; and improving performance in emergency preparedness.

Heffernan, Kennedy, Siegfried, & Meit (2018) conducted a study of accreditation benefits with 157 non-accredited and 57 accredited health departments. Results show that 1-year post-accreditation, health department staff are more knowledgeable about QI and have stronger QI infrastructure, resulting in increased efficiency and effectiveness, compared to non-accredited health departments. This study also showed that health departments in the process of applying for accreditation may experience benefits, such as increased awareness of strengths and weaknesses, encouraging creation of performance management practices, and increasing focus on QI.

Siegfried, Heffernan, Kennedy, & Meit (2018) also conducted a study of accreditation benefits specific to QI and performance management with 324 unique health departments that submitted a total of 479 responses, including 231 responses from health departments that had

submitted their intent to apply for accreditation, 145 responses from health departments that had recently earned accreditation, and 103 responses health departments that had been accredited for one year. Results from these surveys showed that accredited health departments are able to implement more QI and performance management strategies, use QI and performance management results to make decisions, train more staff on QI and performance management; furthermore, increasing the QI culture of the agency.

Kittle & Liss-Levinson (2018) focused on benefits of accreditation with 33 state health departments and they align with those mentioned by Russo, Heffernan et al., and Siegfried et al., above. Additionally, Kittle et al., found that state health departments that pursue accreditation are better equipped to support local and tribal health departments within their states that are practicing accreditation efforts. Secondly, this study noted that direct financial impact is not necessarily gained by achieving accreditation, but improved capacity to provide public health services can indirectly lead to financial profits.

Barriers and Facilitators of Accreditation

Barriers

Capacity is one of the largest barriers for health departments to apply for accreditation; specifically, identifying the time and resources to dedicate to the process (Beatty et al., 2018; Heffernan et al., 2018). Due to the non-profit, governmental nature of local health departments, funding is typically pre-assigned to specific services and staff positions. Consequently, to be able to support administrative functions like accreditation support that are not directly funded, an indirect financing fee is typically charged to funding streams. These indirect funds can be allocated based on the health department's priorities; however, the smaller the budget, the lower

the indirect funds. Thus, the smaller the health department, the less staff and funds are available to provide accreditation support.

Moreover, Gregg et al. (2017) & Beatty et al. (2018) found that rurality was a barrier; particularly, the more rural a health department's jurisdiction, the less likely they were to apply for accreditation. Rural health departments are typically in communities with a lower availability of community partners, especially healthcare organizations, which leads to limited access to care; therefore, they provide more direct clinical care internally than urban health departments. Because clinical care is not covered by PHAB, rural health departments do not see the value of stretching their already limited bandwidth to apply for accreditation.

NACCHO (2014) conducted a survey of the first 29 accredited health departments and found that the top barriers of the application process included lack of staff engagement, lack of funding for the accreditation coordinator position, state budget cuts, and local health official turnover. This survey also reflected that technical assistance was most needed to implement a performance management system, sustain staff morale, create a quality improvement plan, and document updates and storage.

Facilitators

In addition to the benefits of accreditation, it is important to discuss the incentives that motivate health departments to start the process. These incentives can help overcome the barriers tied to accreditation efforts as well. Several studies have been published to evaluate the facilitators of pursuing accreditation, and results include having a higher number of full-time employees, formal QI program, de-centralized governance model, and completion of a CHA, CHIP and SP. First, having more human resources is a facilitator because it allows the agency to allocate time for planning and assessment associated with the accreditation process. Second, the

existence of QI is often used as an immediate, proxy measure to predict a health department's intention to apply for accreditation because this reflects the organization's resiliency for change management and its willingness to execute innovative ideas, which are both needed to work through the accreditation process. In addition, health departments that have a decentralized governance model with a local board of health are more likely to apply because they have more local authority to make strategic decisions. Also, health departments that have completed a CHA, CHIP and SP are more inclined to apply because these are three of the major requirements for accreditation and are often the starting points for the pursuit of accreditation. Because starting is the hardest part, already having a CHA, CHIP and/or SP completed makes the health department feel like they have already begun (Beatty et al., 2018; Gregg et al., 2017; G. H. Shah et al., 2015; Yeager, Ferdinand, Beitsch, & Menachemi, 2015).

Thielen, Leff, Corso, Monteiro, Fisher & Pearsol (2014) conducted 39 key informant interviews with federal, state, tribal, local, and academic settings to understand incentives to encourage participation in the PHAB accreditation process. They found that the following actions helped encourage local health department participation: financial support linked to aiding the accreditation process; legal mandates for parts of the accreditation process, such as a CHA, CHIP, or SP; technical assistance provided by state agencies to build local capacity; peer support workgroups to foster learning and collaboration to share best practices; and state agencies serving as role models themselves. Additionally, accredited health departments are asked by PHAB to annually report how they have provided accreditation-related assistance to other health departments, which can be a positive driver for changing accreditation inclination (Yeager et al., 2016).

This type of financial and technical support can also be aided by the CDC, public health institutes, academia, and private foundations, which can help further incentivize the accreditation process. For example, the Affordable Care Act has indirectly facilitated accreditation for local health departments because new requirements for community health assessments and improvement planning provide incentives for hospitals and public health agencies to partner (Yeager et al., 2016).

Accredited Health Departments

As of May 15, 2018, 223 health departments (31 state, 191 local and 1 tribal) and 1 statewide integrated local public health department system have achieved five-year voluntary accreditation from PHAB (Public Health Accreditation Board, 2018b). This translates to 65% of the U.S. population being covered by an accredited health department (Public Health Accreditation Board, 2018a; U.S. Census Bureau, 2018). Although this is more than half of the nation, most of this population coverage is due to state health departments covering large chunks of the nation rather than coverage from local accredited health departments (Yeager et al., 2016).

The size of the population served by the local health department is positively associated with the level of engagement with the accreditation process (G. H. Shah et al., 2015). Beatty, Erwin, Brownson, Meit, & Fey (2018) categorized local health departments as urban (greater than 50,000), micropolitan (10,000 to 49,999) and rural (less than 10,000). They found that health departments serving urban jurisdictions are 16.6 times and micropolitan communities are 3.4 times more likely to apply for accreditation than their rural counterparts who are understaffed and underfunded; likewise, 87.0% of accredited health departments are in urban areas, 8.9% are in micropolitan areas, and 4.1% in rural areas.

Health Department Intentions to Seek Accreditation

As of May 2018, approximately 13% (290 out of 2,309) of health departments are accredited, and another 8% (192) are in the process (Healthy People 2020, 2014; Public Health Accreditation Board, 2018a). So that leaves 79% of health departments that are not currently pursuing accreditation. The majority of these health departments are small, rural, local health departments that lack the resources to support the infrastructure required for accreditation. Additional financial support may convince these health departments to apply. However, if PHAB truly wants all health departments to apply, a modified accreditation process catering to support this cohort may be necessary.

Although it is difficult to directly measure health department intentions to apply for accreditation, there have been some studies completed in order to try and find triggers for this scheme. These studies have found that health departments that have a community health improvement plan, have a strategic plan, are evaluating programs through performance management, have a quality improvement program, are in a region with a high proportion of accredited health departments, serve larger populations, have a state or shared governance structure, and/or participate in multijurisdictional collaborations are more likely to successfully apply for accreditation (Beatty, Mayer, Elliott, Brownson, & Wojciehowski, 2015; G. Shah, Beatty, & Leep, 2013; Yeager et al., 2015; Yeager et al., 2016). Additionally, health departments with more full-time employees and a director with a medical degree are more likely to seek accreditation (Madamala, Sellers, Beitsch, Pearsol, & Jarris, 2012).

If all health departments were accredited, the health of the nation could have a better chance of improving because of more supportive infrastructure at the local and state levels. Accredited health departments would be able to support improving access to care for the most

rural populations through collaboration. This supports the IOM's vision from in the 1988 report stating, "no community, no matter how small or remote, should be without identifiable and realistic access to the benefits of public health protection, which is possible only through a local component of the public health delivery system" (Institute of Medicine, 1988, p. 144). This supports the notion that health departments must have the infrastructure to provide the 10 EPHS and address the health needs within their communities.

CHAPTER 3

METHODOLOGY

Research Design

This study was a non-experimental, secondary analysis of cross-sectional PHAB data available as of May 2018. This study design is exploratory because there is a limited existing science base for the public health accreditation process; thus, this study attempts to gain further insight into this topic. Also, this study design is quantitative, including the use of nominal measures. Research questions aimed to be addressed by this study include:

1. Which measures are most often included in Action Plans in version 1.0 and 1.5 of the PHAB standards and measures? Of these, which are specific to Domains 5 and 9?
2. Of the Domain 5 and 9 measures most often included in Action Plans, is it more likely that local health departments perform in the "not demonstrated" or "slightly demonstrated" categories compared to state health departments?
3. Of the Domain 5 and 9 measures most often included in Action Plans, is it more likely that small or medium local health departments perform in the "not demonstrated" or "slightly demonstrated" categories compared to large local health departments?

Data and Sampling

PHAB is committed to building the science base for accreditation and allows researchers to request data on the accreditation processes. Thus, the data provided by PHAB for this study was collected from February 2013 to May 2018 to assess whether health departments met accreditation standards and measures. The data samples are classified by health department ID, and not by name. The data set includes the following information about 222 accredited health departments: health department ID, health department type (state, local), accreditation date,

Action Plan (required or not), population category (1-8), census year, version of the PHAB measures used (1.0 or 1.5), PHAB measure number, performance of each measure (fully demonstrated, largely demonstrated, slightly demonstrated, not demonstrated), and if measures were required in an Action Plan (yes or no). Two accredited health departments, one tribal and one statewide integrated local public health department system, are excluded since they are the only samples in their categories and can't be deidentified.

The sampling frame for this study includes all accredited health departments from 2013 to May 2018. Sampling is not used because of the low number of accredited health departments, all of which are included in the sampling frame. Findings from this study are an accurate reflection of health departments accredited as of May 2018. However, the findings from this study are not representative of the larger population of health departments because accreditation is new and only a limited number of health departments have been accredited. Research has shown that accredited health departments differ from non-accredited health departments.

Measures

The dependent variable is the category of conformity assessed for each measure in version 1.0 and 1.5 of the PHAB standards and measures, which is defined by PHAB as:

1. Not Demonstrated
2. Slightly Demonstrated
3. Largely Demonstrated
4. Fully Demonstrated

For bivariate analysis, these categories are coded into two groups, as follows:

1. True = (4) Fully Demonstrated or (3) Largely Demonstrated

2. False = not (4) Fully Demonstrated or (3) Largely Demonstrated, assuming these are (2) Slightly Demonstrated or (1) Not Demonstrated

There are four independent variables included in this study, which are:

1. Health department was required to submit an Action Plan prior to being accredited;

   1 = no Action Plan

   2 = Action Plan required

2. Version of the standards and measures, if different, that the commonly missed measure falls in;

   1 = version 1.0

   2 = version 1.5

3. Health department covered either a local or state jurisdiction;

   1 = state health department

   2 = local health department

4. Size of the health department based on population categories 1-8: (1) less than 25,000, (2) 25,000 to 49,999, (3) 50,000 to 99,999, (4) 100,000 to 249,999, (5) 250,000 to 499,999, (6) 500,000 to 999,999, (7) 1,000,000 to 2,999,999, (8) greater than 3,000,000.

   1 = small health departments (population categories 1-2)

   2 = medium health departments (population categories 3-5)

   3 = large health department (population categories 6-8)

Statistical Methods

This research will be analyzed with descriptive and inferential statistics to portray the relationship among variables. Researchers assume the variation will occur in the type of health

department, whether state or local, and the size of the populations served. Descriptive statistics were used for research question 1 to simply describe the frequency of variables. For example, most frequent measures included in Action Plans out of all accredited health departments in version 1.0 and most frequent measures included in Action Plans out of all accredited health departments in version 1.5. Logistic regressions were used for research questions 2-3 to determine association between variables with Action Plan requirement (yes or no), type of health department (local or state), size of population served (population categories 1-2, 3-5, 6-8), version of the PHAB Standards & Measures (1.0 or 1.5) as independent variables. The following logistic regression models were used for each of the five measures most commonly included in Action Plans to answer research questions 2 and 3.

Model:

logit(p) = b_0 + b_1*(Action Plan required)* + b_2*(type of health department)* + b_3*(version of the PHAB Standards & Measures)* + b_4*(size of the local health department)*

where p= measures fully demonstrated or largely demonstrated in Domains 5 and 9

So the odds = $\frac{p}{1-p} = \frac{(measures\ fully\ demonstrated\ or\ largely\ demonstrated\ in\ Domains\ 5\ and\ 9)}{1-(measures\ fully\ demonstrated+largely\ demonstrated\ in\ Domains\ 5\ and\ 9)}$

CHAPTER 4

RESULTS

The results of each research question are described in this chapter. Research question 1 is answered through descriptive statistics depicted in Tables 3-6. Research questions 2 and 3 are described through logistic regressions in Tables 7-11.

Descriptive Statistics

Table 2 describes the data set used for this study, which reflects 222 accredited health departments as of May 2018. Of these 222, 170 were accredited under version 1.0 of the PHAB standards and measures and 52 were accredited under version 1.5. Also, out of these 222 accredited health departments, 67 were accredited after completing an Action Plan. Of these 67 Action Plans, 58 were for version 1.0 and 9 were for version 1.5. Of the 222 accredited agencies, 31 were state health departments and 191 were local health departments. Of the 191 local health departments, there were 24 small local health departments (population categories 1-2), 122 medium local health departments (population categories 3-5), and 45 large local health departments (population categories 6-8).

This first research question is answered through descriptive statistics in Tables 3-6. Because of the large number of measures included in Action Plans, this research study focuses on the top five measures (Table 3): 5.2.4, 5.3.3, 9.1.3, 9.2.2, and 9.1.4. When you count each time any measure from a particular domain was included in an Action Plan, Domain 5 measures were required 162 times and Domain 9 measures were required 147 times. Table 6 shows the frequency of Domain 5 and 9 measures broken down in another view.

Table 2

Descriptive Statistics for Independent Variables

Independent Variables		# of HDs
Accredited	Total	[a]222
	Version 1.0	170
	Version 1.5	52
Action Plans	Total	67
	Version 1.0	58
	Version 1.5	9
Jurisdiction	State HD	31
	Local HD	191
Population Category	Small Local HD	24
	Medium Local HD	122
	Large Local HD	45

Note. Data reflect accredited health departments as of May 2018.
[a] Excludes 1 tribal health department and 1 statewide integrated local public health department system.

Table 3

Frequency of Action Plans Measures

Rank	Measure(s)	Frequency in APs
1	5.2.4	41
2	5.3.3	32
3	9.1.3	31
4	9.2.2	29
5	9.1.4	25
6	9.1.1, 5.2.3	19
7	9.2.1	18
8	5.2.2, 5.1.3	16
9	9.1.5, 12.3.2	15
10	6.3.4, 7.1.3	12
11	1.1.1, 5.1.2, 1.1.2, 2.2.2, 8.2.1	11
12	7.1.1, 9.1.2, 6.3.3, 12.3.3, 1.3.2, 1.4.2	10
13	7.1.2, 6.3.2, 1.2.4, 1.3.1, 3.1.2	9
14	3.1.1, 2.3.3, 7.2.3, 4.1.2	8
15	6.1.1, 6.1.2, 4.2.1, 2.1.2, 2.2.1, 5.3.1	7
16	5.3.2, 5.4.1, 1.1.3, 1.2.2, 1.4.1	6
17	5.4.2, 10.1.1, 1.2.1, 3.2.2	5
18	1.2.3, 2.1.1, 2.1.3, 2.3.2, 2.3.4, 3.2.1, 10.2.3, 11.1.3, 11.2.2, 12.2.1, 6.2.1, 8.1.1, 8.2.2	4
19	3.1.3, 7.2.1, 6.3.5, 4.1.1, 2.1.5, 2.2.3, 2.3.1, 10.2.2, 11.1.7, 12.2.2	3
20	5.2.1, 2.1.4, 2.4.1, 2.4.2, 11.1.1, 11.1.5, 3.2.4, 6.2.3, 4.2.2, 8.2.3, 7.2.2	2
21	3.2.5, 3.2.3, 11.1.4, 11.2.1, 5.1.1, 12.1.1, 12.1.2, 2.4.3, 6.3.1	1

Table 4
Frequency of Action Plan Measures by Domain

Domain 1		Domain 2		Domain 3		Domain 4		Domain 5		Domain 6	
Measure	Freq.	Measure	Freq.	Measure	Freq.	Measure	Freq.	Measure	Freq.	Measure	Freq.
1.1.1	11	2.2.2	11	3.1.2	9	4.1.2	8	5.2.4	41	6.3.4	12
1.1.2	11	2.3.3	8	3.1.1	8	4.2.1	7	5.3.3	32	6.3.3	10
1.3.2	10	2.1.2	7	3.2.2	5	4.1.1	3	5.2.3	19	6.3.2	9
1.4.2	10	2.2.1	7	3.2.1	4	4.2.2	2	5.1.3	16	6.1.1	7
1.2.4	9	2.1.1	4	3.1.3	3			5.2.2	16	6.1.2	7
1.3.1	9	2.1.3	4	3.2.4	2			5.1.2	11	6.2.1	4
1.1.3	6	2.3.2	4	3.2.5	1			5.3.1	7	6.3.5	3
1.2.2	6	2.3.4	4	3.2.3	1			5.3.2	6	6.2.3	2
1.4.1	6	2.1.5	3					5.4.1	6	6.3.1	1
1.2.1	5	2.2.3	3					5.4.2	5		
1.2.3	4	2.3.1	3					5.2.1	2		
		2.1.4	2					5.1.1	1		
		2.4.1	2								
		2.4.2	2								
		2.4.3	1								
11	87	15	65	8	33	4	20	12	162	9	55
Domain 7		Domain 8		Domain 9		Domain 10		Domain 11		Domain 12	
Measure	Freq.	Measure	Freq.	Measure	Freq.	Measure	Freq.	Measure	Freq.	Measure	Freq.
7.1.3	12	8.2.1	11	9.1.3	31	10.1.1	5	11.1.3	4	12.3.2	15
7.1.1	10	8.1.1	4	9.2.2	29	10.2.3	4	11.2.2	4	12.3.3	10
7.1.2	9	8.2.2	4	9.1.4	25	10.2.2	3	11.1.7	3	12.2.1	4
7.2.3	8	8.2.3	2	9.1.1	19			11.1.1	2	12.2.2	3
7.2.1	3			9.2.1	18			11.1.5	2	12.1.1	1
7.2.2	2			9.1.5	15			11.1.4	1	12.1.2	1
				9.1.2	10			11.2.1	1		
6	44	4	21	7	147	3	12	7	17	6	34

Table 5

Summary of Action Plan Measures by Domain

Domain	# of Measures	Frequency in Action Plans
1	11	87
2	15	65
3	8	33
4	4	20
5	12	162
6	9	55
7	6	44
8	4	21
9	7	147
10	3	12
11	7	17
12	6	34

Table 6

Frequency of Action Plan Measures in Domains 5 and 9

Rank	Measure(s)	Frequency in Action Plans
1	5.2.4	41
2	5.3.3	32
3	9.1.3	31
4	9.2.2	29
5	9.1.4	25
6	9.1.1, 5.2.3	19
7	9.2.1	18
8	5.2.2, 5.1.3	16
9	9.1.5	15
10	5.1.2	11
11	9.1.2	10
12	5.3.1	7
13	5.3.2, 5.4.1	6
14	5.4.2	5
15	5.2.1	2
16	5.1.1	1
Total	19	309

Logistic Regression

Logistic regressions were used to answer research questions 2 & 3. For measure 5.2.4 (Table 7), the variables of Action Plan requirement and version of PHAB standards & measures are statistically significant. Health departments that were not required to do an Action Plan were 7.26 times more likely to be assessed as “fully demonstrated” and “largely demonstrated” on measure 5.2.4 than those required to do an Action Plan. Health departments applying under version 1.5 of the standards and measures were 3.14 times as likely to be assessed as “fully demonstrated” and “largely demonstrated” than those that applied under version 1.0. In addition, the odds of performing in the “fully demonstrated” and “largely demonstrated” categories for local health departments were lower compared to state health departments, although this finding was not statistically significant.

Table 7

Adjusted Odds Ratio by Covariates for Measure 5.2.4

Variable		No.	Adjusted Odds Ratio (95% CI)
Type of HD	State	31	1.0 (Ref)
	Local	191	0.58 (0.20, 1.72)
Action Plan Requirement	Yes	67	1.0 (Ref)
	No	155	7.26 (3.70, 14.24)*
Version	1.0	170	1.0 (Ref)
	1.5	52	3.14 (1.39, 7.09)*
Size of Local HD	Small	24	1.0 (Ref)
	Medium	122	1.67 (0.61, 4.57)
	Large	45	0.86 (0.28, 2.70)

Note. HD = Health Department; CI = Confidence Interval; *Statistically significant.

For measure 5.3.3 (Table 8), the variables of Action Plan requirement and version of PHAB standards & measures are statistically significant. Health departments that were not required to do an Action Plan were 8.84 times more likely to be assessed as "fully demonstrated" and "largely demonstrated" on measure 5.3.3 than those required to do an Action Plan. Health departments applying under version 1.5 of the standards and measures were 2.72 times as likely to be assessed as "fully demonstrated" and "largely demonstrated" than those that applied under version 1.0. In addition, the odds of performing in the "fully demonstrated" and "largely demonstrated" categories for local health departments were lower compared to state health departments, although this finding was not statistically significant.

Table 8

Adjusted Odds Ratio by Covariates for Measure 5.3.3

Variable		No.	Adjusted Odds Ratio (95% CI)
Type of HD	State	31	1.0 (Ref)
	Local	191	0.78 (0.26, 2.37)
Action Plan Requirement	Yes	67	1.0 (Ref)
	No	155	8.84 (4.23, 18.45)*
Version	1.0	170	1.0 (Ref)
	1.5	52	2.72 (1.06, 6.98)*
Size of Local HD	Small	24	1.0 (Ref)
	Medium	122	2.54 (0.86, 7.54)
	Large	45	0.58 (0.17, 1.95)

Note. HD = Health Department; CI = Confidence Interval; *Statistically significant.

For measure 9.1.3 (Table 9), the variables of Action Plan requirement and size of local health department are statistically significant. Health departments that were not required to do an Action Plan were 8.42 times more likely to be assessed as "fully demonstrated" and "largely demonstrated" on measure 9.1.3 than those required to do an Action Plan. The odds of performing in the "fully demonstrated" and "largely demonstrated" categories for large local health departments were 7.72 times more likely and for medium local health department were 3.05 times more likely than small health departments. In addition, the odds for performing in the "fully demonstrated" and "largely demonstrated" categories for local health departments were higher compared to state health departments and higher for those that applied under version 1.5 of the PHAB standards and measures compared to 1.0, although these findings were not statistically significant.

Table 9

Adjusted Odds Ratio by Covariates for Measure 9.1.3

Variable		No.	Adjusted Odds Ratio (95% CI)
Type of HD	State	31	1.0 (Ref)
	Local	191	1.39 (0.30, 6.41)
Action Plan Requirement	Yes	67	1.0 (Ref)
	No	155	8.42 (3.99, 17.81)*
Version	1.0	170	1.0 (Ref)
	1.5	52	1.98 (0.70, 5.62)
Size of Local HD	Small	24	1.0 (Ref)
	Medium	122	3.05 (1.07, 8.70)*
	Large	45	7.72 (1.82, 32.76)*

Note. HD = Health Department; CI = Confidence Interval; *Statistically significant.

For measure 9.2.2 (Table 10), the variable of Action Plan requirement is statistically significant. Health departments that were not required to do an Action Plan were 9.45 times more likely to be assessed as "fully demonstrated" and "largely demonstrated" on measure 9.2.2 than those required to do an Action Plan. In addition, the odds of performing in the "fully demonstrated" and "largely demonstrated" categories for local health departments were lower compared to state health departments, and the odds were lower for health departments that applied under version 1.5 of the PHAB standards and measures compared to version 1.0, although neither of these findings were statistically significant.

Table 10

Adjusted Odds Ratio by Covariates for Measure 9.2.2

Variable		No.	Adjusted Odds Ratio (95% CI)
Type of HD	State	31	1.0 (Ref)
	Local	191	0.65 (0.18, 2.4)
Action Plan Requirement	Yes	67	1.0 (Ref)
	No	155	9.45 (4.52, 19.78)*
Version	1.0	170	1.0 (Ref)
	1.5	52	0.79 (0.33, 1.92)
Size of Local HD	Small	24	1.0 (Ref)
	Medium	122	1.05 (0.35, 3.16)
	Large	45	1.09 (0.29, 4.05)

Note. HD = Health Department; CI = Confidence Interval; *Statistically significant.

For measure 9.1.4 (Table 11), the variables of Action Plan requirement and version of PHAB standards & measures are statistically significant. Health departments that were not required to do an Action Plan were 6.97 times more likely to be assessed as "fully demonstrated" and "largely demonstrated" on measure 9.1.4 than those required to do an Action Plan. Health departments applying under version 1.5 of the standards and measures were 0.39 times as likely to be assessed as "fully demonstrated" and "largely demonstrated" than those that applied under version 1.0. In addition, the odds of performing in the "fully demonstrated" and "largely demonstrated" categories for local health departments were lower compared to state health departments, although this finding was not statistically significant.

Table 11

Adjusted Odds Ratio by Covariates for Measure 9.1.4

Variable		No.	Adjusted Odds Ratio (95% CI)
Type of HD	State	31	1.0 (Ref)
	Local	191	0.29 (0.08, 1.15)
Action Plan Requirement	Yes	67	1.0 (Ref)
	No	155	6.97 (3.17, 15.31)*
Version	1.0	170	1.0 (Ref)
	1.5	52	0.39 (0.17, 0.91)*
Size of Local HD	Small	24	1.0 (Ref)
	Medium	122	2.13 (0.73, 6.18)
	Large	45	1.11 (0.33, 3.75)

Note. HD = Health Department; CI = Confidence Interval; *Statistically significant.

CHAPTER 5

DISCUSSION AND CONCLUSION

Discussion

Research Question 1

Out of all the measures required in Action Plans, the results of this study found that Domains 5 and 9 were responsible for 44%, nearly half. This is supportive of the research hypothesis.

These two domains are filled with capacity-building requirements such as assessing, planning, and evaluating that health departments were not routinely required to do prior to accreditation. Domain 5 focuses on developing public health policies and plans, specifically the Community Health Improvement Plan, Strategic Plan, and Emergency Operations Plan. Domain 9 focuses on evaluating and continuously improving processes, programs, and interventions, including the Quality Improvement Plan and Performance Management System. The top five measures are described in more detail below and listed in order of most frequently included in Action Plans first.

1. 5.2.4: Implementing the Community Health Improvement Plan (CHIP).

   Requirements include:

   a. One annual report of progress towards implementing CHIP goals.
   b. One example of how the CHIP was reviewed and revised based on the above annual report (version 1.0) or the health department's plans to do this (version 1.5).

2. 5.3.3: Implementing the organizational Strategic Plan.

   Requirements include:

   a. Two annual progress reports stating that the health department reviewed, monitored, and assessed progress towards Strategic Plan goals and objectives.

3. 9.1.3: Implementing Performance Management System.

   Requirements include:

   a. One example of a functioning performance management team (version 1.5 only).
   b. Two examples of how goals and objectives were set for the performance management system.
   c. Two examples of how progress was monitored for the two goals and objectives listed in b.
   d. Two examples of how the two goals and objectives listed in b were analyzed and areas for improvement were identified.
   e. Two examples of how the performance results were discussed and next steps were planned for the two goals and objectives listed in b.
   f. One completed performance management self-assessment (version 1.5 only)

4. 9.2.2: Implementing quality improvement (QI) activities based on the QI plan.

   Requirements include:

   a. Two examples of QI projects.
   b. Two examples of how staff were involved in implementing QI activities.

5. 9.1.4: Implementing systematic process for assessing customer satisfaction with health department services.

   Requirements include:

   a. Two examples of how customer feedback was collected and analyzed.

b. Two examples of actions that were taken based on collected feedback (version 1.5 only).

All five of these measures are focused on implementation of the associated plans and processes. This shows that health departments applying for accreditation are successful at developing the required plans and processes, but they lack in the implementation and evaluation of these plans and processes. This gap can be attributed to several factors affecting the initial health department accreditation process, including time constraints, staff bandwidth, and culture development. First, most health departments hire one full-time employee to lead the accreditation process, and this accreditation coordinator serves as a project manager to ensure requirements will be met by a set deadline to apply for accreditation, typically two to four years from initiating the process. Due to the vast number of requirements and tight application timeline, the accreditation coordinator helps develop plans and processes, but must then move on to other requirements rather than focusing on implementation and evaluation. It would benefit health departments to engage multiple staff members in the accreditation process so that there is additional staff bandwidth to implement and evaluate the developed plans and processes without negatively impacting existing responsibilities. Most of the time, it seems that health departments simply do not have enough time between development of plans and applying for accreditation to create an annual report assessing implementation. In addition, some implementation examples require evidence of agency-wide impact, which proves there is a culture change occurring in the organization. This type of change requires time to implement and be effective, and due to the quick turnaround between development of the process or plan and showing an example of how it is completed, the agency's example may not be as robust as PHAB requires for accreditation.

To help future PHAB applicants succeed in these common Action Plan measures, the researchers recommend allowing at least one to two years between developing the required plans and submitting the accreditation application. This allows sufficient time to produce one annual report for each plan outlining the health department's progress towards goals and how it was modified based on this annual assessment. The only exception to this includes measure 5.2.4, implementation of the CHIP, in version 1.5 because PHAB modified this requirement to allow health departments that didn't have a year of implementation to submit a previous plan or detailed plans for future annual assessment (Public Health Accreditation Board, 2013, p. 143).

Research Question 2

Although state health departments had higher odds of successfully performing in four of the top five measures included in Action Plans compared to local health departments, the results were not statistically significant. Therefore, the research hypothesis for this question was not supported with this study.

State health departments may outperform local health departments in these four measures (5.2.4 – implementing a CHIP, 5.3.3 – implementing a Strategic Plan, 9.2.2 – implementing QI, 9.1.4 – implementing customer satisfaction process) because state health departments do not have the staff constraint of providing direct patient care like local health departments do. Therefore, state health department staff play a larger role in developing and implementing state-wide strategies that may fall into the scope of these four measures.

Research Question 3

Out of the top five measures included in Action Plans, only measure 9.1.3 (implementing a Performance Management System) was statistically significant in supporting that large local

health departments outperform medium and small local health departments. Therefore, this hypothesis was only partially supported with this study.

Measure 9.1.3 may be easier for a larger local health department to meet because of more staff bandwidth to implement a performance management system, possible funding for a robust performance management system, and/or a pre-existing performance management system prior to accreditation requirements that supports a culture of performance management within the agency.

Conclusion

In conclusion, the five measures most commonly included in public health accreditation Action Plans include 5.2.4 (implementing a CHIP), 5.3.3 (implementing a Strategic Plan), 9.1.3 (implementing a Performance Management System), 9.2.2 (implementing QI), and 9.1.4 (implementing customer satisfaction process). These are all focused on implementation of the associated plans or processes included in Domains 5 and 9.

The Action Plan requirement gives the health department an additional year to meet accreditation requirements, which allows enough time to produce evidence of implementation and evaluation of associated plans or processes. Health departments still in pursuit of accreditation that want to avoid getting an Action Plan for the five commonly included measures should allow one to two years between plan development and applying for accreditation. This will allow enough time to produce at least one annual report evaluating implementation of plan goals and objectives. The only exception for this is the CHIP since PHAB has modified measure 5.2.4 in version 1.5 to allow health departments that didn't have a year of implementation to submit a previous plan or detailed plans for future annual assessment. On the contrary, health departments that get an Action Plan should not be discouraged because this shows that PHAB

believes the health department is capable of meeting implementation requirements with an additional year of work. In this case, it will help to consider the Action Plan period as an additional step in the accreditation process.

Additionally, the only statistical difference between the version 1.0 and 1.5 of the PHAB standards and measures was for measure 9.1.4 (implementing a systematic process for assessing customer satisfaction feedback). Results showed that health departments applying under version 1.5 of the PHAB standards and measures had a more difficult time with this measure compared to health departments applying under version 1.0. This could be because there is a second requirement in version 1.5 requesting evidence that the health department documented results and took actions based on the feedback collected. This follow-up step reflects the health departments' ability to implement the customer satisfaction process, collect results, analyze results, document results, and document steps taken to address gaps. This can be improved if health departments allowed more time between developing the process and applying for accreditation so there is more time to assess and implement improvements.

Although there is improved guidance and clarity of expectations in version 1.5, the data of health departments currently involved in an Action Plan was not included in the sample. As the field of accreditation grows, there is increased availability of accreditation support in public health. This support ranges from more available training, tenure of accreditation coordinators, independent accreditation contractors, and management software. As the field of accreditation matures and lessons learned evolve, this increased guidance will help health departments succeed in the accreditation process.

Finally, it seems that all health departments are capable of adopting a performance management system; however, when it comes to successfully implementing it, large local health

departments outperform medium and small local health departments. Successful implementation consists of a continuous cycle of performance management that requires a health department to monitor, track, evaluate and update agency-wide performance goals, objectives, and measures on a regular basis. Due to the magnitude of this effort, dedicated resources (staff, training, and time) and leadership engagement must be present to create a foundation for a culture of performance management. Building this culture is time consuming, and paired with the time constraint of the accreditation application, small and medium health departments may not have the resources to implement their performance management system to meet PHAB's implementation expectations.

To avoid common pitfalls of public health accreditation, health departments contemplating or pursuing accreditation should consider allowing one to two years between completion of required plans and processes and submitting their accreditation application. This allows enough time to conduct one annual assessment of progress on plan goals and objectives. Small and medium local health departments should consider this specifically for the implementation of their performance management system, which is frequently included in Action Plans. Health departments required to submit an Action Plan should find solace in knowing that once they complete this additional step of the accreditation process, their chances of gaining accreditation are very high.

Limitations and Recommendations

The public health accreditation process began in 2011 and is only seven years old at the time of this study; therefore, the relative youth of the accreditation process limits the research base available for literature review and data analysis. Second, this study analyzed 222 state and local health departments out of approximately 2,309 health departments nationwide. Two

accredited health departments, one tribal and one statewide integrated local public health department system, were excluded from this study since they are the only samples in their categories and are not able to be de-identified. Therefore, this study only includes state and local health departments, and is not reflective of tribal and territorial health departments. Additionally, only accredited health department data was included in the sample; therefore, health departments currently working through Action Plans and those not accredited were not assessed. This also reduces the number of health departments that are actually applying under version 1.5 of the standards and measures, which may affect comparison with version 1.0. Lastly, there are health departments that have been assessed as "not demonstrated" or "slightly demonstrated" on one or more measures that have not had an Action Plan requirement prior to achieving accreditation. Similarly, not every measure that is "not demonstrated" or "slightly demonstrated" is necessarily included in an Action Plan even if a health department is required to do one.

There are many opportunities for research in the emerging field of public health accreditation. Priority for future research should be given to understanding capacity-building activities from Domains 5 and 9 to see if they increase the impact accredited health departments have on health outcomes and health equity. Research in this area may also provide insight on whether accredited and non-accredited health departments perform differently on achieving health outcomes and advancing health equity. Additional research should also evaluate if PHAB standards and measures and the accreditation process successfully evaluate health department performance. Because the Action Plan process is effective, additional research can shed light on whether this step should be required for all health departments or if it could be added to the annual report process post-accreditation.

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