The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio

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The Impact of the Mandatory PHAB Accreditation Process

on Environmental Health Programs at Local Health Districts in Ohio

A Dissertation

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Department of Public Policy and Administration

West Chester University

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Degree of

Doctorate of Public Policy and Administration

By

Wesley J. Vins

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Abstract

Ohio has 112 local health districts and in 2013 these health districts were mandated by state law to achieve national accreditation by July of 2020 from the Public Health Accreditation Board (PHAB) that was established in 2011. To understand the impact on local health districts of the state policy approach, thirteen question paper surveys were mailed to the Environmental Health Directors at all Ohio health districts in May of 2022 and the results were analyzed.

A survey response rate of 54.5% was achieved and the Directors reported that on average they experienced 76-100 annual hours due to accreditation, as did their staff. The highest costs associated with accreditation, other than personnel included PHAB fees and office supplies. Smaller health districts were impacted by fees to a greater extent than the larger health districts. Program performance was reported by 57% to have not changed, with 20% indicating improvement and 9% indicating a decline. Positive impacts relating to the outcomes of state program audits were reported as ‘no impact’ and ‘policies and procedures’, where negative impacts were dominated by ‘time away from other programs’ (46%) followed by ‘none’ (29%).

The impact of mandatory accreditation in Ohio on environmental health programs can be summarized by increased cost associated with PHAB fees and staff time, as well as supplies, with most programs experiencing no change in performance. Positive impacts can be associated with policies/procedures, quality improvement and documentation, and the most dominant negative impact reported was time away from other programs.
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Local health districts provide public health services to the residents of the communities they serve and to ensure the quality of standardized practices, the state of Ohio has mandated its 112 health districts to achieve national accreditation. The impact of mandatory accreditation on environmental health programs at local health districts in Ohio was investigated through a survey of each health districts’ Environmental Health Director. This investigation of the impact of accreditation found that the Directors felt overall program performance had not changed and specific items of cost were identified, as well as numerous positive and negative impacts. The research outcomes can be applied by policy makers and administrators when considering the implementation of local health district accreditation.

Public health is the broad spectrum of services and the subject area is defined by the CDC Foundation (2020) as “the science of protecting and improving the health of people and their communities” (p. 1). Public health administrators focus on community interventions to prevent the spread of disease and maintain a prosperous state without adverse effects from health issues upon their economic and social systems. The approaches used to protect the public are implemented using tools such as prevention education, monitoring, quarantine, social distancing (isolation) or vaccines. These tools are the basis that the current public health system in the United States relies on as a foundation. The use of evolving science, understanding social behavior and efficient administration has allowed the public health industry to develop into an effective societal mechanism that contributes to a safe, healthy and prosperous nation.

The current public health system provides for research and guidance to be established at the federal level by the Department of Health and Human Services and their subsidiary the Center for Disease Control and Prevention. At the federal level we must also recognize the
associated rolls of the Department of Defense, Homeland Security, Department of Education and the Department of Agriculture who may also work in this shared objective, but in a limited capacity compared to the former mentioned.

The state level government also contributes to the broad public health system, which may very slightly by state in scope of service and responsibility to the local level government. Generally, the states provide rule, law and policy development, quality assurance programming of local implementation and in some cases, the direct implementation of programs in the local communities. Most states however, leave the implementation of programs to local health districts that administer the programs as defined by the individual state.

The local health districts provide the direct service to the residents in their jurisdiction, which can take the form of a regional district encompassing multiple counties, individual counties, cities or a combination of cities and counties. Regardless of the size of population served by these local health districts, which can range from millions of people to just a few thousand, the objective of protecting the public remains constant. There may also be variability in the number or types of programs being provided at this level and therefore program capacity or depth of services of health districts may vary.

Protecting the public’s health has been a central priority for all developing nations who desire to primarily prevent the spread of disease among their population. A variety of models and efforts can be seen throughout the history of the world including the United States and the State of Ohio. The models utilized in the United States and the individual states evolved out of the need to protect against disease like smallpox and influenza, which culminated into what we
know today as the Centers for Disease Control and Prevention (CDC) and the State Departments of Health.

**The History and Origin of Public Health**

The need for local public health in the United States is recognized in an 1850 report of the Sanitary Commission of Massachusetts by Lemuel Shattuck, who discusses many aspects of public health in Boston and makes recommendations than were advanced for the time. In this report, Shattuck recommends the creation of state Boards of Health and indicates that city and town should have its own local health board (Shattuck, 1850). Public Health in Ohio originated in the 1800’s in many forms including a state law that required cities with populations greater than 25,000 to form public health departments to prevent and monitor the spread disease. The concept of local boards of health was further developed into a comprehensive public health system following the Spanish Flu of 1918.

In 1919, following the Spanish Flu epidemic that killed millions of people worldwide, Ohio took dramatic steps along with many other states in the country to formalize a public health system in every local community. In this new 1919 view of public health borne out of an emergency, the Ohio legislature enacted the combined Hughes and Griswold bills to require a local health district to be formed in every county and every city with a population greater than 5,000. These newly formed local health districts were funded largely by local general fund tax dollars and the state health department served in an oversight capacity. This oversight authority of state officials was designed to ensure local health districts complied with the laws established by the legislature and the administrative rules developed by the state department of health.
The structure in the state of Ohio remains the same today, where there are 112 local health districts in the state. The health districts include the 88 counties and many cities, such as Cleveland, Cincinnati, Columbus, Dayton, Toledo, Youngstown, Akron and Canton, to name a few (ODH, 2019). Each of these districts perform a range of services with many programs such as food safety and communicable disease investigation, but other programs including household sewage systems and rabies control may not be offered by all health districts. In the Ohio structure, the state department of health monitors the performance of local health district compliance with environmental programs such as food protection and household sewage as well as administrative programs that include birth and death records. Medically, the local health districts are also responsible for tracking communicable disease including hepatitis and influenza hospitalizations and providing vaccine administration, which are a few of the programs routinely audited by state officials. These local programs are all monitored and audited by the state department of health electronically, as well as through paper audits remotely or on site in the local communities.

**Accreditation of Ohio Health Districts Required by State Legislature**

The state level oversight of local health districts is largely focused on the technical compliance with state rules and laws and does not directly address administrative parameters such as quality improvement, strategic planning, workforce development and community engagement. Recognizing the importance of these non-technical and high-level administrative functions, the Ohio legislature enacted public health futures legislation in 2013. This new requirement for local health districts is described by the Ohio Legislative Service Commission website, where local health districts are “to apply for accreditation by 2018 and to become
accredited by 2020” (OLSC, 2022, Section E, para. 3). The mandate required the 112 local health districts to achieve accreditation from an entity as “approved by the Director” (OLSC, 2022, Section E, para. 3). The mandate was not fully enforced due to the COVID-19 pandemic, but additional accreditation legislation was created in 2021 affecting the city health districts.

In legislation enacted in the state of Ohio that became effective on September 30, 2021, as Ohio Revised Code section 3709.012, a city health district that serves less than a population of 50,000 residents shall be nationally accredited by 2023 or studied by the Ohio Department of Health to determine the feasibility of merging with the county health district. The additional 2021 legislative mandate placed on local health districts in Ohio further demonstrates the commitment of the state of Ohio to mandate national accreditation of local health districts.

ORC 3709.012 (A) as described by the OLSC (2022) as follows:

…a city with a population less than fifty thousand that is represented by a board of health of a city health district shall complete a study examining the efficiency and effectiveness of the city health district merging with the general health district of the county in which the city is located. As part of the study, the city shall compare the merger's efficiency and effectiveness with that of remaining as a separate health district. (Section A, para. 1)

Local Quality Improvement Through National Accreditation

The only nationally accrediting body for public health that exists is the Public Health Accreditation Board (PHAB) that was incorporated in 2007 as a nonprofit organization, who developed a voluntary system of accreditation for local, state and tribal health districts. The
voluntary system was initiated and continues with partial funding from the Robert Wood Johnson Foundation and the Centers for Disease Control and Prevention. The balance of the PHAB’s budget is funded from fees assessed to health districts applying for and maintaining PHAB accreditation. (Riley, 2012)

As part of the development of the PHAB standards and the accreditation process, an Environmental Public Health Think Tank was convened by the PHAB Board President/CEO in 2009 and again in 2011 to ensure the appropriate involvement and application of environmental health programs to the accreditation process and measures. The think tank made recommendations to the PHAB Board that included ways to include environmental health staff and action items in the accreditation process and changes to the standards and measures before the launch of the first accreditation process. (Blake, Corso, and Bender, 2011)

The think tank recommendations resulted in accurate environmental health terminology, inclusion of environmental health professionals in the accreditation site review team, inclusion of environmental health as part of the community health planning effort of structured assessments and improvement plans, defined messaging and other significant contributions that were included in PHAB’s final accreditation program (Blake et. al., 2011). PHAB established the initial accreditation process in 2011 following a review of these think tank recommendations and the results of the beta test of the accreditation process that involved 30 local health districts (Riley and Love, 2016). Once the final adjustments were made to the accreditation process and measures, the first health districts became PHAB accredited in 2013.

To achieve a goal of a higher level of quality improvement and performance, many health districts have chosen to pursue this voluntary accreditation by addressing the 12 domains of the
process established by the Public Health Accreditation Board (PHAB, 2019). The PHAB Standards and Measures are contained in these 12 domains, where the first ten are tied directly to the essential public health services, and 11 and 12 address the administration and governance of health districts (Kronstadt, Beitsch, and Bender, 2015).

As reported by the National Association of County and City Health Officials (NACCHO) (2020), there are nearly 3000 local health districts in the United States and as displayed by PHAB on September 3, 2022, 314 of the local health districts are accredited and another 414 health departments have been reviewed and are in the process to becoming accredited (PHAB, 2022). In Ohio, 74 of the 112 health districts have achieved PHAB accreditation and nearly all of the remaining health districts are in the PHAB accreditation process (PHAB, 2022). Many of the health districts that have achieved accreditation are continuing the accreditation effort and have also achieved re-accreditation.

The accreditation process requires a significant investment of time and money from local health districts to achieve a designation that has impacts that are not fully understood. Goon et. al. reported in 2016 that PHAB fees for Ohio range from $34,000 to $79,500 and additional staff costs of $111,982 and $136,000. (Goon et. al., 2016). The assumption is, that with accreditation comes greater efficiency, quality of service and performance, but limited data exists documenting these claims for the broad scope of public health and none directly addresses the more specific environmental health programs.
Problem Statement

In 2013, Ohio legislatively mandated the voluntary accreditation effort for all of the state’s health districts to be completed by July 1, 2020 (ODH, 2019). The Ohio legislative effort to standardize local health district performance beyond the routine program technical audits, grant quality assurance and standard state financial audits was initiated in advance of documented positive results of the policy and evaluation of the impacts of this mandate have not been fully studied.

To understand the possible positive and negative impacts of this policy decision, it becomes important to receive feedback from those directly affected by the mandate. Those impacted the most would be the staff at local health districts and to best observe these impacts are those in leadership positions of frontline staff. A subset of these leaders are the Environmental Health Directors, who are involved in the agency at the administrative level and are directly connected to front line staff that provide daily service to the public. From this unique position, the Directors have a perspective that is well informed to offer valuable perceptions in assessing the impact of a local health district’s accreditation efforts on the organization they represent and the environmental health programs they administer.

The Environmental Health Directors at all 112 local health districts in Ohio were surveyed utilizing a mailed paper survey in May of 2022. The qualitative and quantitative results of the survey were analyzed to determine accreditation impacts on the environmental health programs at these health districts. The results of the survey analysis was then compared against existing literature to provide recommendations and conclusions that can be utilized by policy makers and public administrators when considering the implementation of PHAB accreditation.
Literature Review

Existing literature is explored in this section that relates to the impact of PHAB accreditation on local health districts in Ohio, which is limited in nature due to the narrow time PHAB has existed and the relatively few health districts who have completed the process. State level accreditation impact of local health districts literature is also pursued that may have resulted from states with their own accreditation process, such as North Carolina or Michigan. The opportunity to evaluate literature from other industries that have national accrediting bodies, such as hospitals is also included. These alternate accreditation systems are considered due to limited PHAB data, which assists in placing the PHAB accreditation into the overall context of quality improvement and quality assurance.

In the absence of substantial research that directly addresses the research topic of how the PHAB accreditation process impacts environmental health programs at local health districts, an ancillary literature review approach was implemented. This alternate, but associated topic review includes literature that is closely related to the impact of PAHB accreditation representing a broad approach and has been largely focused on administrative function from a high-level view of public health. Much of this literature is known to be associated with the staff and the institution of PHAB. Another closely but slightly removed area of interest is the literature that demonstrates research of accreditation methods other than PHAB that have been implemented uniquely by a few states.
PHAB Literature

In the literature it can easily be identified that significant effort has been put forward to justify the institution of accrediting local health districts along with the existence of PHAB. The overall accreditation effort can be found to have originated in 2003 by the Institute of Medicine as discussed by J. Kronstadt et. al. (2016) where the mission of improving the public’s health is centered on the need to “strengthen public health infrastructure and recommend accreditation as a potential strategy” (p. 804). The Exploring Accreditation planning committee defined their final recommendation in 2006 as “the accreditation program is to improve and protect the health of the public by advancing the quality and performance of state and local public health departments” (Shah et. al., 2015, p.108).

A test was run on the PHAB accreditation process in 2010 on 30 volunteer health departments in the country and is known as the PHAB beta test. The beta test project was designed to evaluate the performance of the local health districts on more than 100 measures that PHAB had identified as being quality measure indicators that health districts would need to demonstrate through the submission of documents representing agency activities related to each measure. The process of the beta test accreditation was evaluated by the National Opinion Research Center (NORC) at the University of Chicago for an external review of the project. (NORC, 2011)

The final 2011 report by NORC reviewed the beta test project in great detail and provided important findings and recommendations of the process for PHAB to consider in further developing the accreditation process to be applied to health districts in the future. As related to this dissertation items identified in the report suggest the overall importance of having
senior agency leadership involved in the accreditation process at local health districts is necessary as well as a dedicated coordinator that requires 50-100% of this staff person’s time for the accreditation process to be effective and efficient. (NORC, 2011)

The NORC (2011) report indicates that the beta test accreditation process helped health districts by “increasing teamwork and staff moral and encouraging a culture of quality improvement within their agency” (p. 15). The report further provides examples of these benefits as they relate the overall performance of the beta tested health districts where general agreement of completing the accreditation process by local health districts and being a beta test site was the “right decision” (p. 15).

Part of the beta test process design was to collect information related to local resources needed to complete the accreditation process and as part of this interest of “how much time, workforce and money may be needed” was discussed in limited scope by the NORC report (NORC, 2011, p. 13, para. 4). The report did however indicate that the data was collected through the self-reported monthly tracking logs submitted by the accreditation coordinator at each local health district. (NORC, 2011) The report discusses this effort but fails to provide the detailed information collected in these monthly reports for analysis. Graphs or specific categorical expenses were not provided and when the author of this dissertation contacted PHAB directly to review this data, he was advised the information was not available.

To continue the evaluation of the PHAB accreditation process after changes to the process were made as a result of the 2011 beta test report and health districts began completing the PHAB accreditation process 1.0, Meit et. al at NORC at the University of Chicago conducted another effort to better understand the impact of the accreditation process. The evaluation project
conducted from May 2013 through December 2016 was funded by one of the original funders of PHAB, the Robert Wood Johnson Foundation and the Evaluation of Short-Term Outcomes form Public Health Accreditation was released in 2017. The evaluation project that was conducted using surveys of accredited local health district directors, but accreditation coordinator responses were accepted. The research was far more comprehensive in reporting than the beta test evaluation conducted in 2011 and included focus groups or interviews. The results of the more recent NORC work resulted in identifying benefits and barriers to the PHAB accreditation process.

The short-term benefits indicated in the 2017 NORC report by Meit, Siegfried, Heffernan, Kennedy, and Nadel (2017) included “increased focus on QI (Quality Improvement) and performance management; transformation to a higher functioning, more efficient health department” (p. 1). The report lists these benefits in detailed categories such as improved planning, improved operations and documentation, more developed workforce, increased quality improvement and visibility/credibility and stronger local partnerships, to list a few. The 2017 report also discussed improved health outcomes for the PHAB accredited communities, but also recognizes that this is the opinion of those surveyed and no data has been collected to demonstrate the correlation between accreditation and improved community health outcomes (Meit, Siegfried, Heffernan, Kennedy, and Nadel, 2017). However, T. Nicolaus (2018) reports that there is “growing evidence that PHAB-accredited health departments are contributing to positive health outcomes” (p. S89, para. 8).

The NORC report also discusses common barriers experienced by local health districts during the accreditation process including staff time and funding limitations. These barriers were
recognized by health districts completing the PHAB accreditation process as well as those health districts surveyed that have not applied for accreditation (Meit et. al., 2017). The report discusses these barriers from qualitative data analysis that is more developed and detailed that was completed in 2011, but qualitative data of these barriers including actual financial costs in dollars are not part of the 2017 Meit/NORC project or report.

**Quality Improvement Tool**

The first evaluation of the accreditation process’ impact upon quality improvement is found in the 2016 CDC Morbidity and Mortality Weekly Report in the Kronstadt et. al. article entitled Evaluating the Impact of National Public Health Accreditation – United States, 2016. In this article the author discusses a survey conducted of health districts that had been accredited for one year express at a rate of greater than 90% they experienced benefits from accreditation that include “stimulation of quality improvement and performance improvement opportunities; increased accountability and transparency; and improved management processes” Kronstadt et. al., 2016, p. 803). The 2016 research appears consistent with previous PHAB beta test reporting and recognizes that voluntary nature of both survey respondents and the PHAB accreditation process which could make respondents bias in providing favorable responses. If accreditation survey responses were compulsive or the accreditation process was mandatory the research results may vary.

Literature suggests that the overall effort of accreditation can be implemented as a quality improvement tool. This suggestion is supported by Ingram et. al. in 2018, when two similar groups of health districts that served greater than 100,000 residents were evaluated and compared before and after one group became accredited. The study spanned from 2006 to 2016 and
involved two surveys prior to accreditation and two surveys after accreditation. The Ingram, Mays, and Kussainov (2018) research covered 20 activities in four areas of service delivery that included:

the delivery of core public health services, local health department contribution toward these services, participation in the delivery of these services by other members of the public health system and the development of comprehensive public health systems. (p. S26, para. 4)

At completion, the research showed greater capacity and expanded delivery of services in the communities that had local health districts that achieved accreditation. Specifically, the accredited cohort saw significant increase in service capacity in two of the 20 activities in 2006 and 3 activities in 2012 which was prior to accreditation. Following accreditation, that number grew to 9 for the accredited communities. This documented expanded set of services were developed with partners and were deemed important to protecting and promoting the health of the accredited communities. (Ingram, Mays, and Kussainov, 2018)

The suggestion that accreditation is a quality improvement tool is also supported by the Kronstadt et. al. research that was reported in the Centers for Disease Control and Prevention weekly report in 2016. This research reports that a survey of health districts who had been accredited for more than one year saw improvements in performance and the management process as well as increases in transparency and accountability. This work reported more than 90% of those surveyed saw evidence of quality improvement. (Kronstadt, et. al., 2016)
Additional literature, such as the 2015 NACCHO fact sheet that recommends best practices in becoming accredited, include quality improvement as a tool to become a more effective health district. In this work, NACCHO interviewed five local health districts that were in the process to become PHAB accredited or has already achieved accreditation and they indicated summarized embracing quality improvement through accreditation activities would lead to great effectiveness. (NACCHO, 2015)

**Community Leadership**

The pursuit of accreditation can be largely tied to the top leadership of the organization as the agencies’ relationship with other community organizations, having accreditation pre-requisites and the per capita expenditures (Shah et. al., 2015). The concept of needing leadership involved in the accreditation process was also recognized by NORC and Meit during their evaluation of the PHAB accreditation process in 2011 and 2017. These projects identified the involvement of the agency leaders is necessary and they contribute to the barrier of staff time and accreditation associated costs.

Governing board leadership of local health districts are an essential part of the process where they are required to sign on to the accreditation effort early in the application process. The governing boards provide oversight of the local health district activities and by supporting accreditation they demonstrate to the community a willingness to be held to a higher national standard resulting in accountable services to the local community. T. Nicolaus’ 2018 article notes through a quote of a contributor that accreditation is not for every health district and for some health districts it is a difficult financial decision given the long periods of underfunded responsibilities. Some health districts have chosen not to apply for voluntary accreditation, and
more than half of the accredited health districts have requested additional funding as a result of their accreditation efforts. (Nicolaus and Pettenati, 2018)

**Barriers to Accreditation**

The latter issue of per capita expenditures plays a roll where Beatty identifies the investment of local monies and personnel time as significant barriers to accreditation (Beatty, Erwin, Brownson, Meit, and Fey, 2018). This is further supported by Shah et. al. in 2015 where the time and effort as well as the fees being too high were identified as reasons not to pursue accreditation as reported by local health districts (Shah, et. al. 2015). Time was also identified as a barrier to accreditation for rural health districts surveyed in Missouri and in general did not identify the value in investing in accreditation (Beatty et. al., 2016).

Many county health districts in Ohio, that the state code refers to as general health districts share inside millage of property taxes with township and village governments in their jurisdiction and they do not receive funding from the county’s general fund budget. These shared funds that are allocated to the local health districts are routinely policed by township and village officials and justification of the expensing of these funds by the local health district becomes a necessary public administration function. In consideration of this relationship, nine local health districts expensing local property tax revenues for accreditation summarized the associated accreditation costs and process in a July/August 2016 article of the Ohio Township News.

In this publication, A. Goon et. al. discussed accreditation costs for health districts that range from $34,000 to $79,000 for fees and $111,982 to $136,000 in associated staff costs. The authors discuss the significance of these costs when they approach 10% of local health district revenue. The amount of funding expensed and staff time invested becomes significant to the
township administration when many community needs are identified and remain unaddressed due to the accreditation investment. (Goon et. al., 2016)

The Goon et.al. article also compares the investment by the state of Ohio into the library system and the local health districts. The example provided includes the Media County Library system receiving $4,337,306 and the local health district serving the same community receiving $45,125 in state subsidy. This example is significant because the library system in Ohio does not have a mandate for accreditation as do the local health districts. (Goon et. al., 2016)

Recognizing the overall cost of accreditation, the need to justify the investment must be considered, even if the investment will improve existing infrastructure through quality improvement and increased capacity. The significance of ensuring a return on investment must be considered and regularly evaluated into the future. (DeSalvo et. al., 2017)

Qualitative research conducted by Meit and Kronstadt of NORC at the University of Chicago demonstrated administrative value. The research surveyed 150 accredited health districts across the nation inquiring about their perceived value of the accreditation investment of time and money. The surveys revealed that a majority of the health districts felt that the PHAB accreditation process resulted in some form of agency improvement. Meit and Kronstadt’s research did not however address the effectiveness of PHAB accreditation on the overall health of the communities served by these health districts (Meit and Kronstadt, 2016).

The topic of health district improvement is discussed in many articles in the literature, but little is provided in the actual demonstration of specific programmatic or impacts that are the result of accreditation. The exception to this is the defining of commitment to quality improvement efforts specified in Domain 9 that are considered central strategies to PHAB and
where academic efforts are translated into daily practice yielding results in meaningful ways (Beitsch, Riley, and Bender, 2014).

**Workforce Impact**

For many years there have been acknowledgements that public health workers were in need of expanding their ability to respond to new public health threats, community health issues and address emerging concerns in public health such as pandemics, chronic diseases and injuries. These professional development concerns were fully recognized and were correspondingly incorporated into the PHAB accreditation process measures that require the training of public health front line workers, administrative staff and leadership personnel in areas of quality improvement and performance management. The impact of accreditation is demonstrated through the practical use of workforce development efforts where more local health districts have embraced on-site trainings for quality improvement and performance management that helped to develop staff skill sets and fill in competency gaps. (Bialek, 2018)

The workforce development measures established by PHAB are concentrated in Domain 11 and are designed to promote and facilitate many aspects of professional development of the public health workforce. This work is centralized in the workforce development plan maintained by local health districts and evaluated by the PHAB site team during the accreditation process. During an aggregate evaluation of the first 22 health districts who were reviewed under the second generation of the PHAB standards (PHAB 1.5), it was determined that health districts were “generally able to demonstrate conformity with the workforce-related measures”, but several were not able to demonstrate annual updates to their agency plan (Bender, Kronstadt, Wilcox and Tilson, 2014, Section Lessons Learned to Date).
Recruiting and maintaining a competent workforce in public health has been difficult due to the limited training opportunities and relatively stagnant compensation compared to other industries. The need to establish ongoing professional development initiatives was integrated into the PHAB accreditation process to ensure a competent workforce that addresses the needs of public health. The overall quality improvement effort of the accreditation process allows for the application of workforce development efforts to be integrated into various Domains of PHAB accreditation, but the formal section addressing workforce development is found in Domain 11. (Ye, Verma, Leep, and Kronstadt, 2018)

2018 writings by Ye, Verma, Leep, and Kronstadt pursued research activities in the direction of PHAB’s research agenda to promote studies to expand on the current literature. In this effort, Ye et. al. derived information from the 2014 Public Health Workforce completed by the Association of State and Territorial Health Officials and Interests Needs Survey and the NACCHO Forces of Change survey that focused on state and local health district employees. The combined analysis included over 1800 local health district employees found that employees of agencies formally engaged in the accreditation process had significantly higher job satisfaction than those from health districts that were less engaged in accreditation. This research also identified that employees from health districts formally engaged in accreditation perceived stronger scores in supervisory support and employee morale than those from health districts that were less engaged in accreditation. (Ye et. al., 2018)

**Environmental Health Programs and PHAB**

The involvement of environmental health programs in the accreditation is necessary for health districts to fulfill measures in PHAB Domain 2 and could apply program activity to other
Domains including 5, 6, 8 and 9 and in 2013, Gerding, Carlson, and Wilcox discussed the major contributions environmental health programs provide to the accreditation process. In this review, contribution of environmental health programs is clearly demonstrated through program activities and associated program documents submitted to PHAB. The documentation required in daily activities of environmental programs such as procedure/protocol documentation and enforcement activities are routine for these programs and can be used as examples in meeting PHAB measures. (Gerding, Carlson, and Wilcox, 2013)

Additionally, the environmental health staff activities can provide support to documentation necessary for quality improvement as well as professional or workforce development. To contribute to these accreditation areas, personnel who are routinely required to maintain state licenses, complete continuing education courses and other professional development as a course of necessity for licensure, but also meeting PHAB measures. Environmental health professionals are also familiar with quality improvement when state or auditing officials review program activity for law and code compliance or during the update of codes and laws when program changes must occur at the local level. During these changes, activities such as protocol updates and customer or partner notification occurs naturally and when these activities are properly documented, they can be utilized to meet the PHAB measures during accreditation. (Gerding et. al., 2013)

Also, to gain a better understanding of the environmental health program staff involvement in the accreditation process, the National Association of City and County Health Officials (NACCHO) conducted a survey in 2014 and 2015. The survey conducted by NACCHO was completed using a phone interview technique of health districts pursuing accreditation.
The research demonstrated that environmental health program activities and staff play a roll in preparing documents to satisfy PHAB measures of many Domains that include protocols and procedures that are utilized in the administration of health district responsibilities. These documents included examples of data analysis, surveillance data, quality improvement and aspects related to succession planning or continuity of operations and public health workforce development (NACCHO, 2015). The fact sheet report does not address the issue of impact, but does indicate the areas in the accreditation process that environmental health programs participate in to contribute to the agency wide effort to achieve PHAB accreditation.

Though formal research literature addressing environmental health program impact of accreditation some local health districts individually have reported environmental health related quality improvement projects that were initiated because of the PHAB process that include: quicker responses to environmental health information requests; increase in the portion of animal bites reported to the health district within 48 hours; and decreases in frequency of food establishment violations are reported (Beitsch et. al., 2014).

**Medical Institution Accreditation**

Many other industries such as education and business utilize mechanisms associated with forms of accreditation including sectors in the healthcare industry such as hospitals and medical military medical systems. To consider alternate sectors in the health industry provides for comparison of an accreditation effort that extends beyond the scope of local public health that is the focus of this dissertation and places the PHAB accreditation process in a larger context. Much like the PHAB mandated accreditation for local health districts in Ohio, The Centers for Medicare and Medicaid Services (CMS) requires hospitals to be accredited by a CMS approved accrediting body or a state survey to be part of their pay system.
The accreditation and evaluation process for hospitals has long been established and as reported by Lam et. al in 2018, 3337 of the 4400 hospitals in the United States are accredited. 2847 of the 3337 hospitals are accredited by The Joint Commission accrediting body and 1063 were evaluated using state-based or independent systems during a period from 2014-2017. Lam et. al. reviewed data from 2014 that involved patients over the age of 65 that were segregated into patient groups that were admitted to a hospital for; general treatment, 15 common medical conditions and 6 common surgical conditions. These groups were evaluated for mortality and readmission rates within 30 days of discharge at Joint Commission accredited hospitals and those evaluated by other systems. (Lam et. al., 2018)

The research revealed that patients treated at accredited hospitals had lower 30-day mortality rates than those surveyed by states, but this data was not statistically significant. Mortality rates following the six surgical conditions were nearly the same. The readmission rates for the 15 treated medical conditions were lower for accredited hospitals than for those participating in state surveys. Readmissions following the six surgical conditions did not show a significant difference. (Lam et. al., 2018)

Overall, there was no significant mortality difference between the hospitals, but slightly lower readmission rates were demonstrated by those hospitals accredited over those surveyed by state programs. The Lam research summarizes its findings as “There was no evidence in this study to indicate that patients choosing a hospital accredited by the Joint Commission confer any healthcare benefit over choosing a hospital accredited by another independent accrediting organization. (Lam et. al., 2018, p. 363, Section Abstract - Conclusions).

The impact of healthcare industry accreditation was also explored by reviewing 2011 research conducted by Alkhenizan and Shaw. Their article explored 26 studies that evaluated the
impact of accreditation on the quality of healthcare services. Their study demonstrated significant overall improvement of the process of care through improved structure and organization for specific healthcare services such as trauma surgical care, pain management and infection control. Their study also discovered that general accreditation also significantly improved clinical outcomes as well as quality of care. (Alkhenizan and Shaw, 2011)

The United States Army Military Health System utilizes accreditation and certification programs for much of its healthcare sector including primary care, surgical, laboratories and others, but not public health. To address this limitation preventative medicine departments began to utilize the PHAB accreditation process to establish an evaluation mechanism that reviews their processes similar to their other sectors. Melton et. al. discussed this approach for the military in a 2019 article that demonstrates the use of the PHAB accreditation process for Army Preventative Medicine installations with the first site to apply to PHAB was Fort Riley in 2016. (Melton, Shirley, Barraza, and Bullock, 2019)

The Army officers’ findings identify many benefits of accreditation which are consistent with some previous research. These benefits include, advancing quality improvement and performance, promoting collaboration, increasing accountability, and identifying strengths and weaknesses. The review also documented changes, but report those as out of scope of the article and provide no additional details on the subject. The authors did however support the third-party accreditation effort as a step in the right direction to improve effectiveness of the Preventative Medicine Department and provide the concept of using the accreditation success as a tool for commanders to leverage the capabilities of the department. The authors also recognize the positive impacts of accreditation on the Army’s Preventative Medicine Department and suggest the possible exploration of the process for benefits that could be experienced by other branches
of the military that their installations to better serve sailors, marines and airmen. (Melton, et. al., 2019)

**Literature Review summary**

The collection of literature review articles presented here appears to demonstrate the benefits of accreditation to many subject areas including quality improvement, performance management and workforce development. Ancillary positive impacts related to community engagement, partnering and overall credibility are discussed at various levels. The extrapolation of these benefits to improved population health outcomes is not addressed in the current literature or data supported at the local level, but defining this impact remains on the research agenda of PHAB.

Issues of cost and staff time allocation as well as fees related to accreditation are identified in several literature reviews by researchers and individual respondents, but these barriers remain undefined and are not part of the current PHAB research agenda. Additionally, the impact to environmental health programs at local health districts has not been fully investigated, but several authors have supporting research that demonstrates the important contribution and involvement of environmental health programs in the accreditation process. The core public health functions that are provided by environmental health programs at local health districts and their involvement in the accreditation process makes the impact to them critical to understand.

It is recognized that the voluntary nature of research survey respondents utilized in the current literature and the PHAB accreditation process may be influenced with bias of the
respondent in providing favorable responses. If accreditation survey responses were compulsive or the accreditation process was mandatory the research results may vary. The unbiased approach to research is necessary for public administrators to have an objective view of the potential impacts in advance of making policy decisions and the investment of limited local resources.

In all of the research and literature reviewed by this author, there was a void in the specific subject matter that is considered in this dissertation that contributes to the greater knowledge base on the subject that could be utilized by those considering policy issues or the investment into accreditation. The need for additional research of this kind, is apparent and necessary for public administrators and health districts to make informed decisions about the value and pursuit of PHAB accreditation. The investigation of this topic can also benefit the health districts that have completed the initial accreditation process and are considering the value or impact of continuing the accreditation effort by pursuing re-accreditation in the subsequent 5-year accreditation cycles. Additional research will help understand the impacts of PHAB accreditation and how it can influence the field of public health for the benefit of the population served.

To achieve a greater understanding of the impact PHAB accreditation has on environmental health programs at local health districts in Ohio, the research question “What is the Ohio local health districts’ Environmental Health Director’s perception of the impact of the state mandated PHAB accreditation process?” is presented. The complimenting hypothesis of the research question is expressed in the statement “Environmental Health Directors at the local health districts in Ohio will indicate that the PHAB accreditation process impacted their
environmental programs by increasing performance and that the improvements required a large investment of time and money”
Methods

To answer the research question “What is the Ohio local health districts’ Environmental Health Director’s perception of the impact of the state mandated PHAB accreditation process?”, a mixed methods approach was applied to gain a greater understanding of the impact of accreditation from the perspective of Environmental Health Directors. The approach and data collection identified in the following sections were selected due to the nature of the inquiry that does not lend itself simply to quantitative or qualitative data collection or analysis. The mixed method approach incorporates categorical data that can be analyzed independently and in conjunction with qualitative open-ended responses. The combination of these dual methods provided for greater depth of understanding of a complex subject. The mixed method also allowed for validation (as detailed below) or justification of the quantitative data with free qualitative expression of the participant that adds to greater clarity of the categorical responses.

The non-experimental framework is necessary due to lack of opportunity to employ the other more defining framework structures that would yield meaningful results. The opportunity for the Environmental Health Director to consider before and after conditions as they relate to the accreditation process and this research will provide suitable and meaningful reflection that can be utilized in answering the proposed research question. Within the non-experimental framework a mixed approach of data collection was selected.

Approach

When considering the research question proposed and the target population to be investigated, the researcher identifies that much of the effort will involve a non-experimental
framework with a slight association to a quasi-experimental design due to various limitations. The research is limited to the non-experimental framework due to the traditional or classic experimental design requiring a control group and random assignments, which are not available for the target population. The target population by law is required to be involved in the accreditation process, therefore a control group in the target population that is removed from the accreditation process could not be identified or utilized in this research.

The open-ended survey questions provided for a full range of responses that are considered in the analysis of the data. The independent direct mailing created the opportunity for a private venue for the respondent to complete the survey in an unobstructed environment with limited outside influence. This private setting increased the likelihood of thoughtful, unbiased and transparent survey responses.

The quantitative responses were suitable for categorical analysis when coded by category for each response where statistical analysis can be successfully applied. The qualitative responses are suitable for themed type analysis where coding can be applied when themes are identified. The themed responses were then analyzed in aggregate of all responses and further segregated using categorical demographic information for comparison. This mixed methods approach was extremely effective in understanding the survey data that provided for exceptional depth in analysis and a more granular evaluation that either qualitative or quantitative data could provide independently.

This approach also allows the researcher to protect the respondent through an aggregate collection of responses that can be analyzed and distributed without fear of retaliation of the respondent or their agency from critics or governing authorities.
Design

The research design will allow for an all-inclusive set of responses from all 112 environmental health directors in the state of Ohio, if they choose to voluntarily participate. This comprehensive method of data collection will ensure all health districts have an opportunity to respond and will remain free of any obligation or penalty for failure to participate.

The methodology of using an open-ended response survey allows each respondent to fully describe in detail the aspects of their experience or opinions as it relates to the impact of accreditation. Further, the option of using coding for the most dominant themes provides for a more in-depth analysis that was used to define, in greater detail, the impact upon the selected demographics identified in the survey.

Environmental Health Directors were selected because by state law all local health districts in Ohio are required to have one in addition to a Health Commissioner and Director of Nursing. These positions can be part-time positions, but most Environmental Health Directors in Ohio are full-time employees and typically supervise field sanitarians. Environmental Health Directors (and the staff they supervise) are responsible for the enforcement and compliance with state code as it relates to environmental health programs including, but not limited to food safety, tattoo artists, campgrounds, animal bites, home sewage, drinking water systems and public health nuisances.

The Environmental Health Director position at local health districts in Ohio was selected for this research due to the requirement that each health district fill the position and the activities that involve the Director. This unique position between local health district senior leadership and
the agency staff who provide frontline direct service to the public is an integral part of an efficient agency. The Director is placed in a position that is involved in many of the aspects relating to accreditation and the measures that are evaluated. These factors make the Environmental Health Director an excellent participant to evaluate the impact of accreditation on environmental health programs at local health districts in Ohio.

Data Collection

This research project (IRB-FY2021-248) as approved by the West Chester University Institutional Review Board (IRB) on March 8, 2022, through the expedited review process. The IRB approval that applies to the design, methodology and survey documents is attached in Appendix A of this dissertation.

The project included the survey of the Environmental Health Directors of all 112 local health districts in Ohio. The sample population included all Environmental Health Directors in Ohio. By Ohio law each health district is required to have an Environmental Health Director, as well as be in the process to become accredited. These two requirements made the survey tool appropriate for all those being surveyed. The all-inclusive approach ensured that all health districts have the opportunity to contribute to the research and none were excluded. Having a known finite sample population that was directly contacted is viewed as an advantage to demonstrating validity of the research. The known parameters of the sample population are included in the analysis when considering the demographics of those respondents, as well as those who chose not to respond.
The participant survey is a series of quantitative and qualitative questions that allowed for responses to questions relating to the impact of the accreditation process upon on the agency and individual environmental program performance. The surveys were mailed with a letter of explanation and included in the mailing was a self-addressed stamped return envelope and a two-dollar bill to encourage participation. The surveys were marked with a random 4-digit code prior to mailing, so upon their return, the responding health district would not receive follow-up notification.

The survey responses were entered into a spread sheet and analyzed by question using means, variation and standard deviations where applicable. The quantitative results were then graphed and analyzed categorically by demographic group based on the number of residents served by the health district. The results of the data were further analyzed and compared against research or findings identified in the literature review for other industries or accreditation processes. Qualitative data were analyzed and major themes were identified. These themes were then compared by size of the population served by the health district.

The Ohio Profile and Performance Database (OPPD) maintained by the Ohio Department of Health was accessed for a complete list of Environmental Health Directors for each local health district is Ohio. This list that was limited to only Environmental Health Directors also provided individual and agency contact information for emailing and direct United States Postal System (USPS) mailing, both of which were used as part of this research project.
An initial email (Appendix B) was sent on May 28, 2022 to all 112 OPPD identified Environmental Health Directors that briefly informed the Directors about the research project and invited them to participate when the hard copies arrive in regular mail the following week. The email was followed by the regular mailing of the consent form (Appendix C), participant double-sided survey (Appendix D), two-dollar bill and a self-addressed return envelope on May 31, 2022.

The data was collected using a written single sheet survey tool that was mailed in hardcopy using personally addressed envelopes to encourage the identified participant to respond. The personal nature of the mailing was intended to increase response rates by appealing to the subject in a personal way and prevent the premature discard of the survey, which could have resulted from typical mass mailing attempts. A hard copy mailing was also selected instead of a web-based survey to increase response rates as many health districts receive numerous email surveys which can be easily ignores just as mass mailings.

The survey sheet was double sided and collected demographic information such as the size of the health district (population served), location (city, suburban or rural) and their accreditation status (in process, accredited, process of re-accreditation) along with questions about staffing. These categories were utilized in data analysis and is further discussed in that portion of this paper.

Next, the survey sheet asked a set of questions targeting the impact accreditation that the environmental director’s agency experienced. These open-ended questions consistent with the West Chester University IRB approval included the opportunity for the Director to reflect on the performance of seven common environmental health programs that most health districts
administer. They could choose a response of improved, declined, no change or not applicable if they did not administer the program.

The open-ended questions also inquired about accreditation associated costs other than personnel and the perceived positive or negative impacts to the environmental health programs that they administer.

The final piece of the mailing included a two-dollar bill, which is readily available at local banks. The inclusion of the two-dollar bill was to increase response rates as the novelty routinely gains interest in the mailing and draws on the subject’s interest to give back something in the form of a response.

Allowing each Director three weeks to complete and return the survey, a list of non-respondents was created and a follow-up email (Appendix E) was to those individuals on June 19, 2022. Providing additional time for the non-respondents to complete and return the consent form and survey, the survey was closed on July 15, 2022.

Prior to mailing, each survey form was provided a random unique 4-digit code that was cross-referenced to a confidential list of health districts. This allowed the researcher the benefit of delineating which health districts responded and who needed a follow-up reminder email. The follow-up effort was the only purpose for the cross-reference list. The cross-reference list was not further utilized after the close of the survey on July 15, 2022. The list was maintained in a securely locked cabinet separate from the survey responses, which provided for an unidentified analysis of the data that protected the respondent from any potential risk as a result of completing the survey.
All consent forms, returned envelopes and returned two-dollar bills were placed and maintained in a locked cabinet for future reference, if necessary. The survey results for each quantitative question were coded by category and individually entered into an Excel spreadsheet for analysis. The qualitative responses were direct entered into the spreadsheet for each question as a raw response for analysis.

Validation

The open-ended survey allows for a full range of responses that are considered as well as the private venue in completing the survey that provided for and unobstructed or influenced respondent with a desire to create completely unobstructed and transparent responses. Given the highly structured nature of the accreditation process, it is well understood that most environmental directors in the state performed in a similar capacity during the process regardless of the health district. The variability here can be found in the issue that health districts may each have their own level of readiness when pursuing the accreditation threshold or standards where all health districts likely started from a different level of readiness. The level of readiness, size of staff as well as funding available at an agency may have influenced the pressure or commitment of the individual director.

The results of this research are compared against the most closely associated previous research, though no other research has been identified that specifically addresses the topic of this dissertation. The comparisons are discussed in the conclusion section of this dissertation of Chapter 5.
Analysis

A very strong response rate of the targeted participant population provided data for a fully developed analysis that was completed utilizing all the data collected in a broad approach. A focused and detailed analysis was also possible with data that allowed for comparison of the collected demographic information which represented a wide range of participants from the target population. Reviewing the data of all responses and then comparing the data grouped by the participants demographic information clearly demonstrated variability, commonality and validity that aided in the overall comprehensive qualitative and quantitative analysis of the investigative research efforts.

The survey responses for questions one through nine are quantitative data and were categorized and analyzed for mean, mode, and standard deviation. These survey responses that represent mostly demographic related information, were displayed in chart format. The data from these initial questions were also utilized to demonstrate the equitable distribution of participants among various geographic areas of the state, accreditation readiness status and types of health districts represented.

The qualitative responses for question ten were categorized based on the individual responses where themes were identified by the researcher. The themes of these responses are charted and graphically displayed as comprehensive and segmented data sets. The segmented or sorted data by the size of health district was further investigated and found to be useful in the comparison of the significant cost item impacts to each health district group.
Understanding the impact of accreditation activities on program performance was also an important aspect of this research effort and the analysis of associated information collected in question eleven was incorporated into the conclusions and recommendations section of this dissertation along with other qualitative survey response analyzes. Central to the research efforts to capture the impact of the accreditation, qualitative data was also explored during analysis.

The further qualitative data analysis for questions twelve and thirteen was investigated by grouping themes, as determined by the researcher to understand the positive and negative impacts experienced by the participant as a result of the accreditation process. These themes were presented in aggregate and by size of health district (population served) for comparison. The themes were graphically displayed by charting the magnitude of the responses for each theme by each size of health district group.

This level of analysis allowed the researcher to focus on the most meaningful aspects of the data collected that can be utilized to answer the research question presented. The in-depth analysis by size of health district further identifies the overall most dominant features of the impact of the accreditation process on a segmented population. The researcher can also evaluate all responses in a comprehensive view that assists in promoting a greater understanding of the data collected and the impact upon the responding health districts.

Finally, the comprehensive and segmented analysis of this data is summarized and applied to the industry in the conclusion and recommendations section of this dissertation. In these later sections, the analysis results are compared against other existing research for contextual meaning, validity and contribution to the established literature.
Results

The research question “What is the Ohio local health districts’ environmental health director’s perception of the impact of the state mandated PHAB accreditation process?” is answered by the collective review of Tables 6, 7, 8, 9, 10, 11, 11A-E, 12, and 13 as well as Figures 6, 6A, 7, 7A, 8, 9, 10, 10A, 11, 12, 12A, 13 and 13A. Tables and Figures 1-5 document the participant demographics which demonstrate a well informed and representative study group to answer the research question. The population studied is therefore valid and the study group or population surveyed is suitable to make such a determination. The study group of participants was properly selected and is considered all-inclusive of all 112 Environmental Health Directors from all 112 local health districts in Ohio. These participants were all contacted from in the same manner without bias or prejudice.

This research is limited in the finite number of local health districts in Ohio as well as the environmental health director’s interest in participating. Participation by these directors may be limited by the time they have available, their genuine interest in providing feedback and the authorization received by their supervising health commissioner. There may also be a concern of confidentiality of their responses where fear of retaliation by PHAB, other colleagues and their supervisor could place their careers at risk.

The research is also limited in the scope of inquiry for environmental programs that does not include feedback from frontline staff, PHAB accreditation site visitors or customers. All of which may have an alternate perspective on the impact of accreditation on environmental health programs using the accreditation methodology.
Other limitations may also exist with the limited scope of the survey where only a subset of questions were asked and more in-dept responses could be achieved through personal interviews or focus groups. Personal interviews and focus groups were not utilized in this research, which were determined to be geographically and logistically prohibitive.

Limited availability of other collaborating or conflicting research is also a limitation in this study that significantly impacts the ability of the researcher to establish comparison data. Therefore, the research largely stands alone and utilizes other forms of validation through participant feedback and the comparison of other industry, but dissimilar studies.

**Survey Results**

Surveys were mailed to 112 Environmental Health Directors and a total of 61 responses were received yielding a successful 54.5% response rate. Not all questions were answered by all participants and each question was analyzed below based on the number of actual responses for each question. Several questions received more responses than participants and those are also noted and included in the following analysis. It is of special note that of the 61 responses, 15 were returned with the $2 bill that was provided, yielding a 24.6% of those 61 responding participants and an overall return rate of 13.4% when considering all 112 potential participants. The return of the minimal financial token of appreciation was unanticipated and is noted here for consideration of additional data collected that warrants inclusion in this dissertation.

**Survey Results – Health District Demographics**

Questions one through four are designed to report on the general demographics of the local health districts that were surveyed. The responses to these questions by the participant were
used to quantify several defining features of the local health district to assist the researcher in understanding the context of the survey results. The results in this section also validated the equitable distribution of the responses that represent the wide variety of health districts in Ohio ranging in geographic location, accreditation status, populations served.

Question one of the survey asked the Environmental Health Director to self-categorize their health district. The question specifically read: “How do you categorize your health district?” The options for response were urban, rural, suburban and other. There were 61 responses to this question and 5 respondents selected two categories for a total 66 selections. The responses per category are displayed in Table 1. below and further expressed in chart format represented in Figure 1.

**Table 1**

**Health District Category**

<table>
<thead>
<tr>
<th></th>
<th>N of 61 adjusted for multiple responses N = 66</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>responses*</td>
</tr>
<tr>
<td>Urban</td>
<td>15 *</td>
</tr>
<tr>
<td>Rural</td>
<td>37 *</td>
</tr>
<tr>
<td>Suburban</td>
<td>12 *</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

* 5 respondents that selected two categories

As detailed in Table 1. The majority, 37 responses or 52.1% identified their health district as rural health districts followed by 15 (21.1%) urban and 12 (16.9%) suburban. Two (2.8%) of the respondents selected ‘other’. The arithmetic mean of this question’s data is categorically 1.98 with a median of 2 and has a standard deviation of 0.719.
The data that demonstrates a large response from the rural health districts is expected given the overall large number of rural health districts in the state. A majority of the responses indicated a rural setting, as would also be expected in a state where a majority of health districts in Ohio represent (whole or in part) rural communities. The reported setting of the health district contributes little to the analysis of the impact of accreditation, but it is worthy to consider this data as a validation tool to demonstrate suitable participant representation.

Question two of the survey asked the Environmental Health Director to self-categorize their health district based on the number of residents they serve or the size of the population. The question specifically read: “What is the population served by your health district?” The options for response were 9 groups of population size ranging from less than 25,000 residents served to greater than 500,000. There were 61 responses to this question. The responses per category are displayed in Table 2, below and further expressed in chart format represented in Figure 2.
As detailed in Table 2. The majority, 15 responses or 24.6% identified their health district as serving between 50,001 and 75,000 residents followed by 14 (23%) serving between 25,001 and 50,000 and 13 (21.3%) serving less than 25,000. The population served categories greater than 75,000 had far fewer responses ranging from 2 to 4 per category as displayed in Figure 2. This data has categorical mean of 3.44 with a median of 3 and a standard deviation of 2.39.

Table 2

Size of Population Served

<table>
<thead>
<tr>
<th>Population</th>
<th>responses</th>
<th>% of all responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25,000</td>
<td>13</td>
<td>21.3</td>
</tr>
<tr>
<td>25,001-50,000</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>50,001-75,000</td>
<td>15</td>
<td>24.6</td>
</tr>
<tr>
<td>75,001-100,000</td>
<td>3</td>
<td>4.9</td>
</tr>
<tr>
<td>100,001-150,000</td>
<td>4</td>
<td>6.6</td>
</tr>
<tr>
<td>150,001-200,000</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>200,001-300,000</td>
<td>4</td>
<td>6.6</td>
</tr>
<tr>
<td>300,001-500,000</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>&gt;500,000</td>
<td>4</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Due to the wide distribution of data in the size categories greater than 75,000, several categories were combined for purposes of analysis of questions 6, 7 and 10-13. Therefore, Table 2A and Figure 2A are presented for that purpose. In consideration of this re-grouping for analysis, it is demonstrated that re-grouping of the data allows for the comparison of size groups where the data is more meaningful and clearly de-identifies the responses of any specific respondent where few exist in the category they represent.
This data as regrouped in Table 2A shows that even with combining groups the three largest groups remains the same where 15 responses or 24.6% identified their health district as serving between 50,001 and 75,000 residents followed by 14 (23%) serving between 25,001 and 50,0000 and 13 (21.3%) serving less than 25,000. The size of population served categories greater than 75,000 are combined into two groups, one representing those serving between 75,001 and 200,000 and the final group serving greater than 200,001. This re-grouped data demonstrates a reasonable distribution of the size of the health district in the state and provides the researcher confidence in equitable size distribution.

**Figure 2**

*Size of Population Served by Health District*
Table 2A

Size of Population Served by Health District re-grouped

N= 61

<table>
<thead>
<tr>
<th>Population</th>
<th>responses</th>
<th>% of all responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25,000</td>
<td>13</td>
<td>21.3</td>
</tr>
<tr>
<td>25,001 - 50,000</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>50,001-75,000</td>
<td>15</td>
<td>24.6</td>
</tr>
<tr>
<td>75,001-200,000</td>
<td>9</td>
<td>14.8</td>
</tr>
<tr>
<td>&gt;200,001</td>
<td>10</td>
<td>16.4</td>
</tr>
</tbody>
</table>

Figure 2A

Size of Population Served by Health District re-grouped

Question three of the survey asked the Environmental Health Director to self-categorize what region their health district identifies with. The question specifically read: “What Ohio region does your health district identify with?” The options for response were 5 areas of the state Northeast, Northwest, Southeast, Southwest and Central. There were 61 responses to this
question. The responses per category are displayed in Table 3. below and further expressed in chart format represented in Figure 3.

Table 3

*Health District Region of Ohio*

<table>
<thead>
<tr>
<th>Region</th>
<th>responses</th>
<th>% of all responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>18</td>
<td>29.6</td>
</tr>
<tr>
<td>Northwest</td>
<td>15</td>
<td>24.6</td>
</tr>
<tr>
<td>Southeast</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Southwest</td>
<td>10</td>
<td>16.4</td>
</tr>
<tr>
<td>Central</td>
<td>7</td>
<td>11.5</td>
</tr>
</tbody>
</table>

Mean (arithmetic) 2.557377
Median 2
STDEV.P 1.361347

Figure 3

*Health District Region of Ohio*

As detailed in Table 3. The majority, 18 responses or 29.6% identified with their health district being located in the Northeast region, followed by 15 (24.6%) being located in the
Northwest region and 11 (18%) in the Southeast. The other two regions ranged in responses from 7 to 10. This data has categorical mean of 2.55 with a median of 2 and a standard deviation of 1.36. This data demonstrates a reasonable geographic distribution around the state and provides the researcher confidence in equitable geographic distribution.

Of the responding participants, as detailed in Table 3 and Figure 3, there was a reasonable distribution geographically. All areas of the state are well represented with a larger number responding from the northeast, as would be expected due to the overall larger number of health districts in this region. The reported region of the health district contributes little to this analysis designed to determine the impact of accreditation, but it is worthy to consider this data as a validation tool to demonstrate suitable and equitable participant representation through the state of Ohio.

Question four of the survey asked the Environmental Health Director to self-categorize what the accreditation status was of their health district. The question specifically read: “What is the PHAB accreditation status of your health district?” There were 5 options for response including Applying for Accreditation, Accredited – seeking re-accreditation, Accredited – not seeking re-accreditation, Re-accredited and not pursuing accreditation. There were 61 responses to this question. The responses per category are displayed in Table 4 below and further expressed in chart format represented in Figure 4.

As detailed in Table 4. The majority, 29 responses or 47.5% indicate that their health district is accredited and seeking re-accreditation, followed by 23 (37.7%) in the process of applying for accreditation and 4 (6.6%) have been re-accredited. Three respondents (4.9%) indicated they were accredited, but not seeking reaccreditation and two (3.3%) indicated they
were not pursuing accreditation. This data has categorical mean of 1.90 with a median of 2 and a standard deviation of 0.98. This data collectively demonstrates that over 96% of all active participants were heavily involved with the accreditation process.

**Table 4**

*Accreditation Status*

<table>
<thead>
<tr>
<th>PHAB accreditation status</th>
<th>responses</th>
<th>% of all responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying for accreditation</td>
<td>23</td>
<td>37.7</td>
</tr>
<tr>
<td>Accredited, Seeking re-accreditation</td>
<td>29</td>
<td>47.5</td>
</tr>
<tr>
<td>Accredited, not seeking re-accreditation</td>
<td>3</td>
<td>4.9</td>
</tr>
<tr>
<td>Re-accredited</td>
<td>4</td>
<td>6.6</td>
</tr>
<tr>
<td>Not pursuing accreditation</td>
<td>2</td>
<td>3.3</td>
</tr>
</tbody>
</table>

**Figure 4**

*Accreditation Status*
Table 4 and Figure 4 present the survey responses regarding the accreditation status of the health district. This data collectively demonstrates that over 96% of all participants were employed by an organization that was actively involved with the accreditation process. The high level of involvement in the accreditation process indicates the participants are considered well informed to make meaningful responses and the survey data collected is relevant and valid to answer the research question proposed.

Question five of the survey asked the Environmental Health Director to identify how many staff they supervise. The question specifically read: “How many environmental program staff report to you (directly or through supervisors)?” There were 7 options for response that provided categories for the number of staff reporting to the director that ranged from 0 to greater than 25. There were 61 responses to this question. The responses per category are displayed in Table 5 below and further expressed in chart format represented in Figure 5.

As detailed in Table 5. The majority, 15 responses or 24.6% indicate that they supervise between 0 and 2 staff, followed by 14 (23%) who indicate they supervise 3 to 4 staff and 10 (16.4%) who supervise 9 to 15 staff. The remaining 4 categories represent 4 to 7 respondents each. This data has categorical mean of 3.23 with a median of 3 and a standard deviation of 1.95. The median of category 3 represents 5 to 6 staff are supervised. This data collectively demonstrates that a broad range of size of health districts are represented in the research and further validates the effort to complete analysis based on size of health district to confidently address the research question.
The inquiry regarding the number of staff supervised by the participant is detailed in Table 5 and Figure 5 which demonstrate size of health district, similar to Table 3 and Figure 3. In this data relating to survey question 5, we again identify reasonable distribution of those
responding. Though this question demonstrates the size of a health district, the ‘size’ of a health district is more commonly referenced in the industry by the population served by a health district therefore, the reported number of staff supervised contributes little to this analysis, but it is worthy to consider as a validation tool to demonstrate the practical use of ‘size’ of a health district that is better represented by population served documented in Tables 3, Figure 3 and 3A.

The size (population served) of health district was the most notable demographic feature in analyzing the data. The variability in responses of the survey could be delineated through this defining feature in the survey. The size of health district was reported by the respondents in one of 9 categories prepared by the researcher in the survey as demonstrated in Table 2 and Figure 2. The first 3 categories of population served that ranged from 0 to 75,000 was evenly distributed, as would be expected given the distribution of all health districts in the state that typically serve this size of community. The larger 6 categories, which detail those communities above 75,000 population, were segregated in the survey, but for meaningful analysis that yielded similar sized groups as identified for categories 1-3, these final 6 categories for size were regrouped into 2 categories. The regrouping into a total of 5 categories, instead of 9 was unitized for the remainder of the research (with the exception of data related to questions 8 and 9) and the 5 groups of local health districts are referenced as small, medium-small, medium, medium-large and large.

**Survey Results – Personnel Investment in Accreditation**

Recognizing that a very large investment in the accreditation process is personnel time, questions six through nine attempt to quantify this investment. Questions in this section were designed to understand the specific investment of time invested by the Director as well as
program staff that supported the accreditation initiative. The questions also identified the number of staff added or re-assigned to support the accreditation process.

Question six of the survey asked the Environmental Health Director to estimate their number of annual accreditation work hours. The question specifically read: “Estimate, on average the total number of hours you invest annually in accreditation activities?” There were 10 options for response that provided categories for the number of hours the director invested annually that ranged from 0 to greater than 1000. There were 59 responses to this question. The responses per category are displayed in Table 6 below and further expressed in chart format represented in Figure 6.

As detailed in Table 6. The majority, 11 responses or 18.6% indicate that they invested 76-100 hours annually, followed by 10 (16.9%) from each of the categories of 21-50 and 51-75 annual hours and 8 (13.6%) who invest 151-200 hours annually. The remaining 6 categories range from 101-150 hours to those greater than 200, with two respondents indicating they invest more than 1,000 hours annually. This aggregate data has categorical mean of 4.56 with a median of 4 and a standard deviation of 2.36. The median of category 4 represents 76-100 hours invested annually. The aggregate data is additionally displayed in Figure 6.

Table 6 and Figure 6 present the annual hours worked by the Director on accreditation activities. It can be observed through this data that the Director may work on accreditation less than 21 hours a year (3 responses) to more than 1,000 (2 responses). The commitment of limited hours toward accreditation could be attributed to the responding Directors indicating they were not seeking accreditation or re-accreditation. In such instances, little work time would be reported. The majority of the participants responded that they work between 21 and 200 hours
per year on accreditation. The average responses can be found in category 4, where Directors would invest 76-100 hours per year. When a typical work year is 2080 hours, we can estimate that on average, accreditation accounts for approximately 3.7% to 4.8% of the Director’s time, but this may range from 0% to over 50% depending on the organization. The wide range of annual hours dedicated toward accreditation is likely attributed to the varying states of readiness of each organization, as well as the level of involvement that was required of the Director.

Table 6

**Annual EH Director Accreditation Hours**

<table>
<thead>
<tr>
<th>Director hours (N=59)</th>
<th>%</th>
<th>Small LHD (N=12)</th>
<th>%</th>
<th>Med - Sm LHD (N=13)</th>
<th>%</th>
<th>Medium LHD (N=15)</th>
<th>%</th>
<th>Med - Lg LHD (N=9)</th>
<th>%</th>
<th>Large LHD (N=10)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20</td>
<td>3</td>
<td>1</td>
<td>8.3</td>
<td>2</td>
<td>15.4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21-50</td>
<td>10</td>
<td>1</td>
<td>8.3</td>
<td>1</td>
<td>7.7</td>
<td>1</td>
<td>6.7</td>
<td>5</td>
<td>55.6</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>51-75</td>
<td>10</td>
<td>1</td>
<td>8.3</td>
<td>4</td>
<td>31.8</td>
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<td>26.7</td>
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<td>10</td>
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<tr>
<td>76-100</td>
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<td>15.4</td>
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<td>0</td>
</tr>
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<td>6.7</td>
<td>2</td>
<td>22.2</td>
<td>4</td>
<td>40</td>
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<tr>
<td>201-350</td>
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<td>1</td>
<td>8.3</td>
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<td>0</td>
<td>2</td>
<td>13.3</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>351-500</td>
<td>1</td>
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<td>1.7</td>
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<td>0</td>
<td>1</td>
<td>7.7</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>501-1000</td>
<td>4</td>
<td>1</td>
<td>6.8</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>13.3</td>
<td>1</td>
<td>11.1</td>
<td>0</td>
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</tr>
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<td>2</td>
<td>2</td>
<td>3.4</td>
<td>2</td>
<td>16.7</td>
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<td>0</td>
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<td>3.888889</td>
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</tr>
<tr>
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<td>4</td>
<td>2</td>
<td>6</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>STDEV.P</td>
<td>2.35977</td>
<td>2.899952</td>
<td>1.780898</td>
<td>2.143725</td>
<td>2.422416</td>
<td>1.868154</td>
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</tbody>
</table>

This data collectively demonstrates a broad range of health districts that can be further delineated into 5 groups based on size of the health district for comparison. This data is located in Table 6, in addition to being graphically displayed in Figure 6 and 6A.
Figure 6A further evaluates the annual hours worked by Directors on accreditation, where the data is presented by size of health district for a more granular view. This data demonstrates that small and medium health districts are represented in nearly all categories of hours worked. At medium-small health districts, all but one respondent reports working less than 150 hours per year. The medium-large health districts are represented across multiple categories, but more than half of these Directors report working between 21 and 50 hours annually. All responses from Directors of large health districts reported working less than 350 hours annually, with 40% of these participants report having worked between 151 and 200 annually on accreditation.
Question seven of the survey asked the Environmental Health Director to estimate the number of annual hours that their staff invest in accreditation. The question specifically read: “Estimate, on average the total number of hours your staff invest annually in accreditation activities?” There were 10 options for response that provided categories for the number of hours staff invested annually that ranged from 0 to greater than 1000. There were 59 responses to this question.

The responses per category are displayed in Table 7 below and further expressed in chart format represented in Figure 7. As detailed in Table 7, the majority, 10 responses or 16.9% indicate that they invested 76-100 hours annually, followed by 9 (15.3%) from the 21-50 hour
category and 8 (13.6%) who’s staff invest 0-20 hours annually. The remaining 6 categories range from 51-75 hours to those greater than 100, with three respondents indicating their staff invest more than 1,000 hours annually. This aggregate data has categorical mean of 4.53 with a median of 4 and a standard deviation of 2.71. The median of category 4 represents 76-100 hours invested annually. The aggregate data is additionally displayed in Figure 7.

**Table 7**

*Annual Staff Accreditation Hours*

<table>
<thead>
<tr>
<th>Annual EH staff PHAB hours</th>
<th>All Responses(N=59)</th>
<th>Small LHD(N=12)</th>
<th>Med-small LHD(N=13)</th>
<th>Medium LHD(N=15)</th>
<th>Med - Lg LHD(N=9)</th>
<th>Large LHD(N=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20</td>
<td>8</td>
<td>1</td>
<td>8.3</td>
<td>2</td>
<td>15.4</td>
<td>2</td>
</tr>
<tr>
<td>21-50</td>
<td>9</td>
<td>15.3</td>
<td>2</td>
<td>16.7</td>
<td>4</td>
<td>30.8</td>
</tr>
<tr>
<td>51-75</td>
<td>7</td>
<td>11.9</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>23.1</td>
</tr>
<tr>
<td>76-100</td>
<td>10</td>
<td>16.9</td>
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<td>7.7</td>
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<tr>
<td>101-150</td>
<td>6</td>
<td>10.2</td>
<td>1</td>
<td>8.3</td>
<td>1</td>
<td>7.7</td>
</tr>
<tr>
<td>151-200</td>
<td>5</td>
<td>8.5</td>
<td>2</td>
<td>16.7</td>
<td>1</td>
<td>7.7</td>
</tr>
<tr>
<td>201-350</td>
<td>3</td>
<td>5.1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7.7</td>
</tr>
<tr>
<td>351-500</td>
<td>3</td>
<td>5.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>501-1000</td>
<td>5</td>
<td>8.5</td>
<td>3</td>
<td>25</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&gt;1000</td>
<td>3</td>
<td>5.1</td>
<td>1</td>
<td>8.3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Mean (arithmetic)          | 4.525424            | 5.58333       | 3.153846            | 4.8            | 3.555556       | 5.5            |
Median                      | 4                   | 5.5            | 3                   | 4              | 2               | 5              |
STDEV.P                     | 2.708154            | 2.984916      | 1.790838            | 2.785678       | 2.54345        | 2.291288       |

Table 7 and Figure 7 present the annual hours worked by staff that report to the surveyed Director on accreditation activities. It can be observed through this data that staff may work on accreditation less than 21 hours a year (8 responses) to more than 1,000 (3 responses). The commitment of limited hours toward accreditation could be attributed to the responding
Directors indicating their agency was not seeking accreditation or re-accreditation as reported in 5 instances. In such situations, it is expected that little work time would be reported. The majority of the participants responded that staff worked between 0 and 200 hours per year on accreditation. The average responses can be found in category 4, where staff would invest 76-100 hours per year. When a typical work year is 2080 hours, we can estimate that on average, accreditation accounts for approximately 3.7% to 4.8% of a single staff’s (FTE) time, but this may range from 0% to over 50% depending on the organization. The wide range of annual hours dedicated toward accreditation is likely attributed to the varying states of readiness of each organization, as well as the level of involvement that was required of the staff.

This data collectively demonstrates a broad range of health districts that can be further delineated into 5 groups based on size of the health district for comparison. This data is located in Table 7, in addition to being graphically displayed in Figure 7 and 7A.

Figure 7A further evaluates the annual hours worked by staff on accreditation, where the data is presented by size of health district for a more refined view. This data demonstrates that small health districts are represented in nearly all categories of hours worked. At medium-small health districts they all report staff working less than 350 hours annually and more than half working less than 76 hours. Medium sized health districts reported staff working mostly less than 150 annual hours and the staff from 4 agencies working more than 350 annual hours on accreditation. The medium-large health districts are represented across multiple categories with all but 3 reporting less than 76 accreditation hours worked. Directors of large health districts reported staff working toward accreditation with a variety of hours across most categories.
Figure 7
Annual Staff Accreditation Hours

Figure 7A
Annual Staff Accreditation Hours by Size of Health District
Question eight of the survey asked the Environmental Health Director how many staff were added to address accreditation activities. The question specifically read: “How many additional environmental staff FTEs have you added in the last 5 years due to accreditation activities?” There were 9 options for response that provided categories for the number of staff added that ranged from 0 to greater than 10. There were 61 responses to this question. The responses per category are displayed in Table 8 below and further expressed in chart format represented in Figure 8.

### Table 8

**Staff Added for Accreditation**

<table>
<thead>
<tr>
<th>Staff FTEs added</th>
<th>responses</th>
<th>% of all responses</th>
<th>Mean (arithmetic)</th>
<th>Median</th>
<th>STDEV.P</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.5</td>
<td>45</td>
<td>73.8</td>
<td>1.393443</td>
<td>1</td>
<td>0.835262</td>
</tr>
<tr>
<td>0.6-1.0</td>
<td>11</td>
<td>18</td>
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<td></td>
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<tr>
<td>1.1-1.5</td>
<td>4</td>
<td>6.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6-2.0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1-3</td>
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<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1-5</td>
<td>1</td>
<td>1.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.0-7.0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.0-10.0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;10</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As detailed in Table 8, the majority, 45 responses or 73.8% indicate that they added 0.5 FTEs or less, followed by 11 (18%) that added 0.6 to 1.0 FTEs and 4 (6.6%) who added 1.1 to 1.5 FTEs to address accreditation activities. The remaining 6 categories that range from adding 1.6 to greater than 10 FTEs, had a single response that indicated adding between 4.1 and 5 staff to address accreditation. This aggregate data has categorical mean of 1.39 with a median of 1 and a standard deviation of 0.84. The median of category 1 represents 0-0.5 FTEs added. The data for question 8 is additionally displayed in Figure 8.
The number of staff added to address accreditation activities was reported by Environmental Health Directors and is summarized in Table 8 and Figure 8. The data represented here clearly demonstrates a consistency among all health districts but one, that less than 1.6 FTEs were added. The far majority, 73.8% reported adding 0.5 or less staff to address accreditation activities. These responses indicate that much of the accreditation activities were performed by the Director of existing staff and overall few FTEs were added to meet the accreditation demands.

**Figure 8**

*Staff Added for Accreditation*

Question nine of the survey asked the Environmental Health Director how many staff were reallocated to address accreditation activities. The question specifically read: “How many environmental staff FTEs have you relocated from other programs to accreditation activities in
the last 5 years due to accreditation activities?” There were 9 options for response that provided categories for the number of staff reallocated that ranged from 0 to greater than 10. There were 58 responses to this question. The responses per category are displayed in Table 9 below and further expressed in chart format represented in Figure 9.

**Table 9**

Staff Re-assigned to Accreditation Activities

<table>
<thead>
<tr>
<th>Staff FTEs reallocated</th>
<th>responses</th>
<th>% of all responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.5</td>
<td>35</td>
<td>60.3</td>
</tr>
<tr>
<td>0.6-1.0</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>1.1-1.5</td>
<td>8</td>
<td>13.8</td>
</tr>
<tr>
<td>1.6-2.0</td>
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<td>1.7</td>
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<tr>
<td>2.1-3</td>
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<td>1.7</td>
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<td>2</td>
<td>3.4</td>
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<td>5.0-7.0</td>
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<td>0</td>
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<td>7.0-10.0</td>
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<td>&gt;10</td>
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</tbody>
</table>

As detailed in Table 9, the majority, 35 responses or 60.3% indicate that they added 0.5 FTEs or less, followed by 11 (19%) that added 0.6 to 1.0 FTEs and 8 (13.8%) who added 1.1 to 1.5 FTEs to address accreditation activities. The remaining 6 categories that range from adding 1.6- greater than 10 FTE had four responses that indicated adding between 1.6 and 5 staff were re-assigned to address accreditation. This aggregate data has categorical mean of 1.76 with a median of 1 and a standard deviation of 1.27. The median of category 1 represents 0-0.5 FTEs added. The data for question 9 is additionally displayed in Figure 9.
Table 9 and Figure 9 summarize the local health districts re-allocated 0-1.5 FTEs of staff toward accreditation activities more than 94% of the time, with 60% reporting 0-0.5 FTEs being re-assigned. Four respondents indicated re-assigning between 1.6 and 5 FTEs. There were no reports of more than 5 FTEs being re-assigned.

**Figure 9**

*Staff Re-assigned to Accreditation Activities*

![Bar Chart](chart.png)

Very similar to Table 8 and Figure 8, Table 9 and Figure 9 represent limited staff being re-assigned to accreditation activities, however, more staff were re-assigned than were added. The data indicates that it was more common for agencies to utilize existing staff (including the Director) than to add staff. This becomes more evident in responses to questions 12 and 13 that are discussed later in this dissertation. Additionally, the data for questions 8 and 9 were not further analyzed by size of health district due to the limited data distribution that was largely concentrated in a single category for each question.
**Survey Results – Other Costs**

Personnel costs are a significant investment into the accreditation process and question 10 was designed to investigate other potential costs associated with accreditation. Without a frame of reference for these potential variety of costs, question ten allowed the participant to respond with any cost they experienced as a write-in response. To fully capture these costs the participant was provided three separate entries.

Question ten of the survey asked the Environmental Health Director to identify three top costs associated with accreditation other than personnel. The question specifically read: “Excluding personnel, what are your other top three costs associated with accreditation in the past 5 years?” There were no pre-populated responses and the participant was provided the opportunity to write-in their three top costs. There were 137 responses to this question which were grouped by themes for analysis. The themes identified are listed in Table 10 and the number of occurrences for each theme is listed. The themes are further expressed in chart format represented in Figure 10.

The themed costs were dominated by PHAB fees with 32 responses representing 23% of the themes, followed by office supplies/equipment with 27 responses (20%) and other personnel/time and IT costs, each with 16 responses representing 12% of the data. Other themes ranged from 3 to 13 responses where three indicated “no costs to EH”
Table 10

Top Accreditation Costs Other Than Personnel

<table>
<thead>
<tr>
<th>THEME SUMMARY</th>
<th>All responses</th>
<th>Small LHD</th>
<th>Med - Sm LHD</th>
<th>Medium LHD</th>
<th>Med - Lg LHD</th>
<th>Large LHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy/program</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>6.1</td>
<td>0</td>
</tr>
<tr>
<td>development</td>
<td>2.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time away from</td>
<td>13</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>9.1</td>
<td>0</td>
</tr>
<tr>
<td>other EH programs</td>
<td>9.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other - personnel/time</td>
<td>16</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>9.1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>12%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No cost to EH</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHAB fees</td>
<td>32</td>
<td>12</td>
<td>8</td>
<td>5</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>23%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Travel/ training</td>
<td>11</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>9.1</td>
<td>1</td>
</tr>
<tr>
<td>Office supplies/equipment</td>
<td>27</td>
<td>7</td>
<td>6</td>
<td>9</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>CHA/CHIP associated</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>costs</td>
<td>5.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>IT</td>
<td>16</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>unspecified other</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>6.1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>themes</td>
<td>5.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
<td>33</td>
<td>33</td>
<td>13</td>
<td>23</td>
</tr>
</tbody>
</table>

Figure 10

Top Accreditation Costs Other Than Personnel

Q10: Top Accreditation Costs Other Than Personnel

N = 137
The top three costs, other than personnel were captured in question 10 of the survey with the open-ended responses summarized in Table 10 and Figure 10 by themed categories. The top category of costs was the PHAB fees with 23.4% of all 137 responses followed by office supplies/equipment themes. Some of these actual responses included “fees paid to PHAB”, “accreditation costs/fees”, “application fees” and “supplies”, “paper/ink”. Other-personnel time, time away from other programs and IT were also identified as dominate themes to a lesser degree.

These costs were further investigated by size of the health districts and the distribution of the themes can be observed in Figure 10A. PHAB fees were indicated as the most dominant theme for small and medium-small health districts, which can be expected given the economy of scale when considering the PHAB fee structure that requires all health districts serving less than 100,000 population pay the same annual fee of $5600. The budgets of smaller health districts that may be as little as $100,000 would be impacted to a greater degree than a large health district with an annual budget of perhaps millions of dollars.

The medium and medium-large health district Directors reported most often that office supplies/equipment was among their top three costs. Large health districts indicated PHAB fees and other-personnel/time more often than any other costs. It should be recognized that there were 8 unspecified responses and three responses that indicated no cost.
In an effort to pursue the answer to the research question, program performance of the local health districts surveyed was investigated with question 11. The performance of the organization during the accreditation 5-year period largely based on program audits helped to understand this aspect of the research. Program performance responses demonstrated variability in many ways and allowed for in-depth evaluation as presented in this section of Chapter 4.

Question eleven of the survey asked the Environmental Health Director to indicate the performance of each of the 8 most common environmental health programs at their health district. The question specifically read: “Considering the number of ODH survey deficiencies,
recommendations and final program survey determinations, please indicate the performance of each program in the last 5 years?" There were four options for response associated with each program. The response options included improved, declined, no change and not applicable. There were 415 responses to this question. The responses indicated are listed in Table 11 and the number of occurrences for each category is listed. The responses are further expressed in chart format represented in Figure 11.

Table 11

5-Year Program Performance

<table>
<thead>
<tr>
<th>Program</th>
<th>Total responses (N)</th>
<th>Improved responses</th>
<th>Declined responses</th>
<th>No change responses</th>
<th>Not Applicable responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Service</td>
<td>60</td>
<td>18</td>
<td>30</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>Campground</td>
<td>59</td>
<td>9</td>
<td>15</td>
<td>5</td>
<td>8.5</td>
</tr>
<tr>
<td>Pools</td>
<td>60</td>
<td>13</td>
<td>22</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Animal bites</td>
<td>59</td>
<td>10</td>
<td>17</td>
<td>2</td>
<td>3.4</td>
</tr>
<tr>
<td>Wells</td>
<td>59</td>
<td>13</td>
<td>22</td>
<td>3</td>
<td>5.1</td>
</tr>
<tr>
<td>Home sewage</td>
<td>59</td>
<td>16</td>
<td>27</td>
<td>4</td>
<td>6.8</td>
</tr>
<tr>
<td>Tattoo parlors</td>
<td>59</td>
<td>4</td>
<td>6.8</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Totals</td>
<td>415</td>
<td>83</td>
<td>20</td>
<td>38</td>
<td>9.2</td>
</tr>
</tbody>
</table>

The PHAB accreditation cycle is 5 years and the inquiry into the performance of the 7 most common environmental health programs administered at local health districts in Ohio over a 5-year period is designed to identify potential accreditation impacts to those programs. The programs selected and the aggregate responses from all participants are located in Table 11 and Figure 11. It can be noticed that a large number of responses or 57% indicate ‘no change’ and
overall, approximately 20% indicated improvement. Less than half of that amount, or 9% indicated a decline in program performance.

We can assume that the option for ‘not applicable’ was selected by the participant due to the lack of the program being administered and this represents 13% of the responses to question 11. Some agencies do not administer all seven programs listed, which may be due to a health district being served by municipal water and sewer. In such instances the health district would not need a well or septic program. Some health districts may also not have tattoo artists or campgrounds and therefore, also do not require an associated program.

Figure 11

5-Year Program Performance
The responses were then segregated into the five categories representing the size of health district where 91 responses were from small health districts, 98 from medium-small health districts, 93 from medium sized health districts, 63 from medium-large health districts and 70 from large health districts. The responses were dominated by ‘no change’ which ranged in groups from 44.3% to 71.4% with the largest identified in the medium-large size health districts. It is also identified that both large and small health districts indicated the greatest improvement at 35.7% and 20.9% respectively. A decline in performance was noted in all size health districts that ranged from 4.3% at medium and large health districts to 14.3% reported by small health districts. In all cases the decline in performance was less than the increased performance percentage as evident in Tables 11A, 11B, 11C, 11D, and 11E.

Table 11A

*Performance of Small Health Districts*

<table>
<thead>
<tr>
<th>Small LHD</th>
<th>Food Service</th>
<th>Campground</th>
<th>Pools</th>
<th>Animal Bites</th>
<th>Wells</th>
<th>Home sewage</th>
<th>Tattoo parlors</th>
<th>Totals (N=91)</th>
<th>Response percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>19</td>
<td>20.9</td>
</tr>
<tr>
<td>Declined</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>13</td>
<td>14.3</td>
</tr>
<tr>
<td>No Change</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>42</td>
<td>46.2</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>17</td>
<td>17.7</td>
</tr>
</tbody>
</table>

Table 11B

*Performance of Medium Small Health Districts*

<table>
<thead>
<tr>
<th>Med - Sm LHD</th>
<th>Food Service</th>
<th>Campground</th>
<th>Pools</th>
<th>Animal Bites</th>
<th>Wells</th>
<th>Home sewage</th>
<th>Tattoo parlors</th>
<th>Totals (N=98)</th>
<th>Response percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>16</td>
<td>16.3</td>
</tr>
<tr>
<td>Declined</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>11</td>
<td>11.2</td>
</tr>
<tr>
<td>No Change</td>
<td>9</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>9</td>
<td>58</td>
<td>59.2</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>13</td>
<td>13.3</td>
</tr>
</tbody>
</table>
Table 11C

*Performance of Medium Sized Health Districts*

<table>
<thead>
<tr>
<th>Medium LHD</th>
<th>Food Service</th>
<th>Campground</th>
<th>Pools</th>
<th>Animal Bites</th>
<th>Wells</th>
<th>Home sewage</th>
<th>Tattoo parlors</th>
<th>Totals (N=93)</th>
<th>Response percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>14</td>
<td>15.1</td>
</tr>
<tr>
<td>Declined</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>No Change</td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>6</td>
<td>10</td>
<td>7</td>
<td>9</td>
<td>61</td>
<td>65.6</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>14</td>
<td>15.1</td>
</tr>
</tbody>
</table>

Table 11D

*Performance of Medium-Large Sized Health Districts*

<table>
<thead>
<tr>
<th>Med - Lg LHD</th>
<th>Food Service</th>
<th>Campground</th>
<th>Pools</th>
<th>Animal Bites</th>
<th>Wells</th>
<th>Home sewage</th>
<th>Tattoo parlors</th>
<th>Totals (N=63)</th>
<th>Response percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>9</td>
<td>14.3</td>
</tr>
<tr>
<td>Declined</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>11.1</td>
</tr>
<tr>
<td>No Change</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>45</td>
<td>71.4</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Table 11E

*Performance of Large Sized Health Districts*

<table>
<thead>
<tr>
<th>Large LHD</th>
<th>Food Service</th>
<th>Campground</th>
<th>Pools</th>
<th>Animal Bites</th>
<th>Wells</th>
<th>Home sewage</th>
<th>Tattoo parlors</th>
<th>Totals (N=70)</th>
<th>Response percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>25</td>
<td>35.7</td>
</tr>
<tr>
<td>Declined</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>No Change</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>31</td>
<td>44.3</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>11</td>
<td>15.7</td>
</tr>
</tbody>
</table>
Survey Results – Positive and Negative Impacts

Positive and negative impacts can be expected with any administrative initiative, including the accreditation of local health and questions 12 and 13 attempt to capture these issues through open ended responses by the participants. The qualitative data describes some very dominant themes and help the researched to understand the impact of accreditation of the participating organizations.

Question twelve of the survey asked the Environmental Health Director to indicate the performance of each of the 8 most common environmental health programs at their health district. The question specifically read: “In what specific ways has the accreditation process POSITIVELY impacted the outcomes of your environmental program surveys (audits) conducted in the past 5 years?” This was an open-ended question where the participant could write-in any response. There were no pre-populated answers to select for this question. 64 themes were identified in 57 responses to this question. The responses provided are listed in Table 12 and the number of occurrences for each categorized theme is listed. The responses are further expressed in chart format represented in Figure 12.

The themed positive impacts were dominated by 18 ‘no impact/change’ responses representing 28.1% of the themes and 17 ‘policy/procedures’ responses representing 26.6% of the themes, followed by a variety other impacts as detailed in Table 12 and graphically displayed in Figure 12. The other responses ranged from 9 ‘quality improvement’ to 1 ‘community engagement’ response. Additionally two responses were themed as ‘unspecific’
Table 12

Positive Impacts of Accreditation

N=64 total themes identified in 57 responses

<table>
<thead>
<tr>
<th>THEME SUMMARY</th>
<th>All responses</th>
<th>Small LHD</th>
<th>Med-sm LHD</th>
<th>Medium LHD</th>
<th>Med-lg LHD</th>
<th>Large LHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>Response</td>
<td>%</td>
<td>Response</td>
<td>%</td>
<td>Response</td>
<td>%</td>
</tr>
<tr>
<td>Standardize operations</td>
<td>3</td>
<td>4.7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community engagement</td>
<td>1</td>
<td>1.6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6.3</td>
</tr>
<tr>
<td>Documentation</td>
<td>8</td>
<td>12.5</td>
<td>1</td>
<td>8.3</td>
<td>3</td>
<td>18.8</td>
</tr>
<tr>
<td>Policies/procedures</td>
<td>17</td>
<td>26.6</td>
<td>1</td>
<td>8.3</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Quality Improvement</td>
<td>9</td>
<td>14.1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>18.8</td>
</tr>
<tr>
<td>Tracking/performance measures</td>
<td>6</td>
<td>9.4</td>
<td>2</td>
<td>16.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No impact/change</td>
<td>18</td>
<td>28.1</td>
<td>6</td>
<td>50</td>
<td>5</td>
<td>31.3</td>
</tr>
<tr>
<td>Unspecified other themes</td>
<td>2</td>
<td>3.1</td>
<td>2</td>
<td>16.7</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

When inquiring about positive impacts to the audit outcomes of the environmental programs, the Directors reported mostly (28%) a theme of ‘no change’ in outcomes. The close second most positive outcome 26% was attributed to the positive impacts of ‘policies and procedures’. These outcome impacts were followed by reports of ‘quality improvement’ (14%), ‘documentation’ (12%) and ‘tracking-performance measures’ (9%). Standardize operations and community engagement were also noted themes but in far fewer responses. Additionally, 2 responses were noted as unspecified.

As in previous question response analysis, question 12 data regarding positive impacts to the outcomes of program audits were reviewed by the size of the health district and are presented in Figure 12A. In this review, it was observed that small health districts reported 50% of the time ‘no change’ followed by 16% reporting ‘tracking-performance measure’ positive impacts. This
group reported zero impact with regards to themes associated with ‘quality improvement’, ‘community engagement’ and ‘standardized operations’

The medium-small health district director responses were also dominated by ‘no change’, but to a lesser degree where only 31% reported in this category. This group further identified in 25% of the responses that the positive impacts to their audit outcomes were associated with ‘policies and procedures’. ‘Quality improvement’, ‘community engagement’ and ‘documentation’ themes were also reported. None of the 16 responses in this group to question 12 indicated ‘tracking-performance measures’ or ‘standardize operations’ as positive impacts.

**Figure 12**

*Positive Impacts of Accreditation*

The medium sized health districts reported 57% of the time that the positive impacts to their audits were associated with ‘policies/procedures’ They also indicated ‘no impact’ and
‘documentation’ 14% of the time as well as ‘quality improvement’ and ‘tracking-performance measures’ 7% of the time. This group did not report themes associated with ‘standardize operations’ or ‘community engagement’.

**Figure 12A**

*Positive Impacts of Accreditation by Size of Health District*

The themed responses were further delineated by size of health district and presented in Figure 12A where the positive impact to program audits reported by medium-large health districts was most frequently (43%) was ‘no change’ followed by ‘quality improvement’ in 28% of the themed responses. Policy/procedures’ as well as ‘tracking/performance measures’ were also reported 14% of the time. The themes of ‘documentation’, ‘standardize operations’ and ‘community engagement’ were not
reported by medium-large health district Directors and with responses limited to 7 in this group, caution should be administered when evaluating these themed results.

The large health district Directors report positive impacts in a variety of nearly every themed category with the exception of ‘community engagement’ where no responses were recorded. The remaining themes were represented similarly ranging from 13 to 20% in each category. A dominant theme for this group could not be identified.

Question thirteen of the survey asked the Environmental Health Director to identify indicate the negative impact of accreditation on environmental health programs at their health district. The question specifically read: “In what specific ways has the accreditation process NEGATIVELY impacted the outcomes of your environmental program surveys (audits) conducted in the past 5 years?” This was an open-ended question where the participant could write-in any response. There were no pre-populated answers to select for this question. 58 themes were identified in 58 responses to this question. The responses provided are listed in Table 13 and the number of occurrences for each categorized theme is listed. The responses are further expressed in chart format represented in Figure 13.

Inverse of question 12 that inquired about positive impacts, question 13 focused on negative impacts of environmental program audits, which resulted in a more centralized theme of ‘time’ in a large majority of responses across all sizes of health districts. These collective responses are presented in Table 13 and Figure 13. Of the responses, 62% reported a theme associated with time comprised of 46% reporting a theme of ‘time away from other programs’
and 18% reporting simply ‘time’. A theme of ‘none’ was also reported 29% of the responses and 5 surveys identified ‘unspecified’.

Table 13

**Negative Impacts of Accreditation**

<table>
<thead>
<tr>
<th>THEME SUMMARY</th>
<th>Small LHD</th>
<th>Med- sm LHD</th>
<th>Medium LHD</th>
<th>Med - lg LHD</th>
<th>Large HD</th>
</tr>
</thead>
<tbody>
<tr>
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<td>17</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Responses %</td>
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<td>7.7</td>
<td>35.7</td>
<td>14.3</td>
<td>63.6</td>
</tr>
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<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
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<td>17.6</td>
<td>7.1</td>
<td>7.1</td>
<td>9.1</td>
</tr>
<tr>
<td>Time away from other programs</td>
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<td>7</td>
<td>8</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
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<td>41.2</td>
<td>57.1</td>
<td>57.1</td>
<td>27.3</td>
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<tr>
<td>Unspecified other themes</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
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<td>58</td>
<td>13</td>
<td>14</td>
<td>14</td>
<td>6</td>
</tr>
</tbody>
</table>

Figure 13

**Negative Impacts of Accreditation**

The data associated with question 13 that demonstrates the distribution by size of health district is presented in Figure 13A, in addition to Table 13.
The small, medium-small and medium health districts each were dominated by reporting the ‘time away from other programs’ between 41 and 57% of the time with more limited focus on ‘time’ which ranged from 7 to 17% of the time for these groups. The response of ‘none’ was also very well represented in the responses for these groups that reported this theme 7 to 35% of the time.

The medium-large health districts reported ‘time’ in 50% of the responses, ‘none’ in 33% of the responses and 16% reported ‘time away from other programs’. As in question 12, this group was limited in responses to question 13 to only 6 responses and caution should be administer when reviewing the results of this group.
The large health district Directors mostly (63%) reported ‘none’ when responding to the inquiry of the negative impacts to the audit outcomes of their environmental programs. This group also reported, to a far lesser degree, ‘time away from other programs’ in 27% of the responses and 9% reported a simple category of ‘time’.
Conclusions and Recommendations

Public health in Ohio is implemented at the local level by 112 health districts and in 2013 these health districts were mandated by state law to achieve national accreditation from the Public Health Accreditation Board (PHAB). With the PHAB standards initially being established as recently as 2011, little is known regarding the impact of this accreditation process upon environmental programs at local health districts and the effects of Ohio’s unilateral policy approach. This research focused on feedback from 112 environmental health directors at these Ohio agencies using a paper survey tool to investigate the research question “What is the Ohio local health districts’ Environmental Health Director’s perception of the impact of the state mandated PHAB accreditation process?

In May of 2022, a thirteen question paper survey was mailed to Environmental Health Directors at all 112 local health districts in Ohio and a 54.5% response rate (N=61) was achieved. Demographic questions led to questions of impact including hours worked by staff and Directors, top three costs other than personnel as well as performance impact to common environmental health programs at local health districts and the overall positive and negative outcome impacts of these agencies.

The results of the survey were analyzed, and the conclusions were categorized by size of health district, where qualitative and quantitative data demonstrate consistency with existing literature as well as details previously unidentified. These results lead to recommendations for public health and public administration practitioners, and opportunities for future research that can broaden the understanding of the impact of accrediting local health districts.
Conclusion of Results

The data conclusions demonstrated by this research indicates that the impacts of mandatory PHAB accreditation to environmental health programs at local health districts in Ohio are summarized as staff time, office supplies and fees. The staff time commitment is significant on the part of the Environmental Health Director who on average reports investing between 76 and 100 hours annually, but annual demands that exceeded 1,000-hour investments were reported. This average annual time investment by the Environmental Health Director is also similar to the estimated time invested by the director’s staff that also averages between 76 and 100 hours annually.

When considering environmental health program performance, most respondents (57%) to the survey indicate “no change” to their individual health programs over the past 5 years, where 20% indicated ‘improved’ and 13% reported that program performance ‘declined’. The most improved programs are representative of large health districts yielding a 37% response rate and the greatest report of declining programs was reported by small health districts at 14%.

The benefits, or positive impacts are noted by responses that are most frequently reported with themes relating to the increased documentation of agency activities and improvements to policies and procedures. Other benefits were also reported at a lesser degree, but remain relevant to consider include quality improvement, tracking/performance management and standardized operations.

The reports of negative impact themes were dominated by time away from other programs to work on accreditation activities and the fees associated with the accreditation
process. These negative impacts provided far less variability than was observed in the benefits and demonstrate a greater intensity by all respondents on these few focused themes.

The conclusions here in this research are in many ways consistent with the existing literature as identified in the Chapter 2 Literature Review of this Dissertation. This research supports the existing literature by demonstrating the benefits of quality improvement in the form of policy and procedure development and improved tracking and performance, as well as the staff commitment necessary to successfully achieve accreditation.

It was observed by NORC in its 2011 analysis of the initial PHAB beta test that there would need to be additional staff required to achieve accreditation and the conclusion of this research supports those findings. This research identified that most agencies added 0.5 to 1.0 FTEs to complete accreditation in addition to the average annual commitment of 76 to 100 hours by the environmental director and their staff. Based on these concurring studies it can be accepted that additional staff are necessary to successfully achieve accreditation.

The more comprehensive follow-up research conducted by NORC that investigated feedback from health district senior leaders and accreditation coordinators culminated into a 2017 report that identified short term benefits of an increased focus on QI and performance management. The additional work by NORC was also supported by this dissertation that identified benefits of QI and increased performance management, which were reported by Environmental Health Directors of local health districts. The report also identified barriers that were consistent with this dissertation that included staff time commitments and funding issues. (Meit et. al., 2017)
The negative impacts identified by this dissertation were also consistent with the barriers to accreditation reported by Beatty in 2017 and Shah in 2015. Both authors reported monies and personnel time as barriers to accreditation and expressed that their participants shared the opinion of little value in investing in accreditation. The conclusions of this dissertation support the 2015 and 2017 research where environmental health directors in Ohio reported the issues of fees and personnel time as negative impacts.

Consistent with additional research conducted by Gerding et. al., this dissertation demonstrated the involvement of environmental health staff and leadership from local health districts in completing the PHAB process. The inclusion of the environmental staff required the staff to partially re-direct work time away from traditional program work and services to meet the demands of accreditation activities. This re-allocation of staff was identified by this research as a negative impact.

Very limited references to quantified program performance are identified in the literature and are often discussed solely in generalized qualitative terms reported by senior agency leadership or accreditation coordinators and not the program supervisors. Therefore, the evaluation of environmental health program performance conducted in this dissertation stands independent of established literature.

**Take-away for Practice**

The practical take-aways of this dissertation for the public practitioner must include the consideration that through this research it has been identified that there are benefits and challenges to accreditation, as well as possibly unforeseen impacts. The issues of performance,
value or return on investment of the accreditation commitment continues to remain somewhat elusive and subjective.

Though it is well documented in this research that there is an investment that results in impacts, the quantifiable return on this investment (ROI) remains undetermined. The investment of staff time, fees and other direct costs such as IT, supplies and training are well understood and can be measured as input costs, but measurable outcomes or outputs are difficult to define.

The challenge to establishing a ROI is found in the undefined outputs or outcomes that result from the accreditation investment. This research attempted to quantify ROI when inquiring about performance of environmental health programs, but respondents overwhelmingly indicated ‘no change’ and those that did identify improvement were offset by nearly as many responses indicating a decline. If a ROI calculation could be applied, the negative impact to other programs (as indicated by some respondents in this research) must be considered where a loss of other program revenue is experienced when program staff “take time away” from other revenue generating programs to conduct accreditation activities. In addition to re-directing human capital toward accreditation, the financial commitment of limited or finite funding toward accreditation and away from other programs may also impact an overall community or agency ROI.

Intangible benefits were identified in this research as well as negative impacts, but these returns are difficult to quantify and compare against actual investment costs. These benefits or ROI may have quantifiable impacts that can be used for such a comparison and could include reduction in food borne illnesses, failing septic systems or more broadly, overall community health outcomes or even life expectancy. This data would require a significant amount of time to
pass and would need adjusted for other factors such as the social determinants of health and may not be practical to assess in ROI terms.

The significance of a quantifiable ROI may lead to challenges for the public administrator, governing entity, or elected official, when attempting to promote or justify the accreditation investment to the community. In addition to justifying accreditation to the community, a leader can expect that agency staff who are assigned the additional accreditation tasks may resent or oppose the agency investment into an initiative that has no tangible supportive outcome data. The lack of hard data to demonstrate an equitable ROI for the accreditation investment may result in loss of staff morale or public confidence and possible significant challenges for the governing entity.

Limitations

This research is limited in the finite number of local health districts in Ohio as well as the Environmental Health Director’s interest in participating. Participation by these directors may be limited by the time they have available, their genuine interest in providing feedback and the authorization received by their supervising health commissioner. There may also be a concern of confidentiality of their responses where fear of retaliation by PHAB, other colleagues and their supervisor could place their careers at risk.

The research is also limited in the scope of inquiry for environmental programs that does not include feedback from frontline staff, PHAB accreditation site visitors or customers. All of which may have an alternate perspective on the impact of accreditation on environmental health programs using the accreditation methodology.
Other limitations may also exist with the limited scope of the survey where only a subset of questions were asked and more in-dept responses could be achieved through personal interviews or focus groups. Personal interviews and focus groups were not utilized in this research, which were determined to be geographically and logistically prohibitive.

**Future Research Opportunities**

Additional follow-up surveys could also be useful that are more focused in the questioning of some of the features or themes identified here. These additional surveys could also be implemented consistent with the PHAB 5-year accreditation cycle as an assessment tool for identifying effectiveness and customer feed-back for PHAB. The survey responses could be utilized by PHAB as an opportunity for quality improvement of the accreditation process. To maintain credibility and confidentiality of the participants, the additional research may need to be conducted independent of PHAB for authentic and meaningful feedback.

It may also be useful to consider the impacts of mandatory accreditation on other divisions at local health districts in Ohio such as medical services, emergency preparedness or administration (fiscal/personnel/clerical). These divisions, which are also common at most health districts in Ohio could provide an alternate view that is closely associated with the population studied in this research. Value may also be found in establishing community health outcomes in communities served by accredited public health agencies. This could reasonably be achieved through the use of accreditation required Community Health Assessment developed by each local health district at least every 5 years.
To address the issue of ROI, additional research could be initiated to quantify actual accreditation costs that include fees, supplies and personnel costs for each participating agency. These direct costs could be coupled with indirect costs such as time lost from other revenue generating programs when staff are assigned to accreditation activities as well as any potential income that may have resulted from achieving accreditation.

Further investigation could also be undertaken to explore the broader impact to the health of the residents in a community served by an accredited health district. These health outcomes would be an ultimate measure of effectiveness, but due to many social determinants of health it may be difficult to isolate and compare such factors in a limited time frame or reporting period.

Regardless of the tools used to advance the study of mandatory accreditation of local health districts, is imperative to continue research in this area to ensure that policy makers have meaningful information in advance of legislative initiatives that will impact the local community. Associated research could also be very helpful in the ongoing refinement of the accreditation process which will likely have an active part in the evolution of modernizing public health in Ohio and across the nation.

**Final Research Conclusions**

Quality improvement minded leaders in the field of public health or policy makers who are considering PHAB accreditation as a voluntary initiative or a mandated statewide policy can consider the conclusions of this research to assist in that decision making process by recognizing the impacts to environmental health programs. The impacts of additional staff time, fees and time
away from other programs are the dominant negative impacts to environmental health programs at local health districts in Ohio and they must be weighed against the intangible impacts of improved policies and procedures, better tracking and performance management. These impacts may be viewed by senior leadership and governing boards from a variety of value perspectives and the discussion is further complicated by limited return on actual program performance where the majority of Environmental Health Directors in this research report ‘no change’.

In final summary of the research question “What is the Ohio local health districts’ Environmental Health Director’s perception of the impact of the state mandated PHAB accreditation process?” it can be concluded that a financial investment to address costs of PHAB fees, staff time and other supply and training costs should be anticipated. It can also be expected that a return on this investment, including a change in program performance will be difficult to quantify, but benefits of quality improvement will be observed. Initiating a mandatory PHAB accreditation policy decision, like Ohio will require a significant commitment of financial resources and policy makers may experience resistance from health district staff or the community due to the lack of a quantifiable return on the PHAB accreditation investment.
References


National Association of City and County Health Officials (NACCHO). (2020, February 24). *Local Health Departments Call on Administration, Congress to Provide Supplemental Funding to Address Coronavirus (COVID-19) Outbreak* [press release].


Appendix A

Institutional Review Board approval

Mar 8, 2022 8:32:59 AM EST

To: Wesley Vins
Public Policy and Administra.

Re: Expedited Review - Initial - IRB-FY2021-248 The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio

Dear Wesley Vins:

Thank you for your submitted application to the WCUPA Institutional Review Board. Since it was deemed expedited, it was required that two reviewers evaluated the submission. We have had the opportunity to review your application and have rendered the decision below for The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio.

Decision: Approved

Selected Category: 7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Sincerely,

WCUPA Institutional Review Board

IORG#: IORG0004242
IRB#: IRB00005030
FWA#: FWA00014155 
Appendix B

Invitation to Participate email

RE: Invitation to participate - doctoral research survey to arrive soon!

Dear Environmental Director,

As an environmental health director at a local health district in Ohio, you have been selected as an eligible participant in a doctoral dissertation research project that is designed to investigate the impact of mandatory PHAB accreditation. You are respectfully invited to participate in this research project survey and your participation is voluntary. The investigation is being conducted by Wesley Vins from West Chester University of Pennsylvania as part of his Doctoral Dissertation to examine *The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio*. During this research, all 112 local health district environmental health directors in Ohio will be contacted and the de-identified results will be assembled in an aggregate format for analysis by geographic area, accreditation status, health district size and category (urban, suburban or rural). Individual responses will remain confidential and analysis categories with fewer than 5 responses will not be reported.

**Your survey packet will arrive by regular mail in the next week along with a token of appreciation that you are welcome to keep even if you choose not to participate.**

Your participation is voluntary, and the survey will take an estimated 5 to 10 minutes to complete. There is minimal risk to you as a participant.

**Please complete the survey when it arrives and return it in the postage paid envelope provided.**

By participating in the survey, you will be contributing to the development of knowledge in understanding the impact of mandatory PHAB accreditation in Ohio. The research will further contribute to the field of public health, public administration and higher education in the form of scholarly literature. Administrators and policy makers will then have the synthesized information available to them to be informed prior to making accreditation decisions that will impact their citizenry.

This research has been approved by IRB # FY2021-248 and if you have any questions or concerns, you can contact the researcher directly by phone at 330-646-7028 or by email at wv880844@wcupa.edu.

Thank you for your consideration.

Wesley J. Vins, Doctoral Researcher

West Chester University of Pennsylvania
Appendix C

Information and Consent form

Project Title: The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio

Investigator(s): Wesley Vins; Kristen Crossney

Project Overview:

Participation in this research project is voluntary and is being done by Wesley Vins along with Faculty Sponsor, Dr. Kristen Crossney as part of Wesley’s Doctoral Dissertation to gain a greater understanding of the impact of mandatory PHAB accreditation on Ohio's local health districts through survey feedback from Environmental Health Directors. Your participation will take about 5 to 10 minutes to complete the survey and you will receive 2 dollars in the form of cash. There is minimal risk to you and your individual responses will be confidential. Analysis and reporting of the responses will be de-identified and analysis categories with fewer than 5 responses will not be reported. There is an opportunity for you to share your opinions and perspectives regarding the impact of mandatory PHAB accreditation. Survey feedback and the work of the researcher could result in policy changes that could be beneficial to you as the participant, and this research will help contribute to a greater understanding of the impact of mandatory accreditation on local health districts. This will assist decision makers in policy development for the constituents they serve.

The research project is being done by Wesley Vins as part of his Doctoral Dissertation to gain a greater understanding of the impact of mandatory PHAB accreditation on Ohio's local health districts through survey feedback from Environmental Health Directors. If you would like to take part, West Chester University requires that you agree and sign this consent form.

You may ask Wesley Vins any questions to help you understand this study. If you don’t want to be a part of this study, it won’t affect any services from West Chester University. If you choose to be a part of this study, you have the right to change your mind and stop being a part of the study at any time, you may also skip questions you choose not to answer.

1. **What is the purpose of this study?**
   - gain a greater understanding of the impact of mandatory PHAB accreditation on Ohio's local health districts through survey feedback from Environmental Health Directors

2. **If you decide (participation is voluntary) to be a part of this study, you will be asked to do the following:**
   - complete the survey
   - This study will take 5 to 10 minutes of your time.

3. **Are there any experimental medical treatments?**
   - No
4. **Is there any risk to me?**
   - Possible risks or sources of discomfort include: minimal risks
   - If you become upset and wish to speak with someone, you may speak with Wesley Vins
   - If you experience discomfort, you have the right to withdraw at any time.

5. **Is there any benefit to me?**
   - Benefits to you may include: an opportunity for you to share your opinions and perspectives regarding the impact of mandatory PHAB accreditation. Survey feedback and the work of the researcher could result in policy changes that could be beneficial
   - Other benefits may include: contribute to a greater understanding of the impact of mandatory accreditation on local health districts. This will assist decision makers in policy development for the constituents they serve

6. **How will you protect my privacy?**
   - The session will not be recorded.
   - Your records will be private. Only Wesley Vins, Kristen Crossney, and the IRB will have access to your name and responses.
   - Your name will not be used in any reports and analysis categories with fewer than 5 responses will not be reported.
   - Records will be stored:
     - in a locked cabinet in Researcher's home office Room 100, which will also be kept locked.
   - Returned surveys will be stored in a locked filing cabinet and all data files will be stored on dedicated flash drives stored in the same secured location.
   - Records will be destroyed three years after study completion.

7. **Do I get paid to take part in this study?**
   - You get 2 dollars in the form of cash

8. **Who do I contact in case of research related injury?**
   - For any questions with this study, contact:
     - Primary Investigator: Wesley Vins at 330-646-7028 or wv880844@wcupa.edu
     - Faculty Sponsor: Kristen Crossney at 610-430-5838 or kcrossney@wcupa.edu

9. **What will you do with my Identifiable Information/Biospecimens?**
   - Not applicable as information will be de-identified and analysis categories with fewer than 5 responses will not be reported.

For any questions about your rights in this research study, contact the ORSP at 610-436-3557.

I, ______________________________ (your name), have read this form and I understand the statements in this form. I know that if I am uncomfortable with this study, I can stop at any time. I know that it is not possible to know all possible risks in a study, and I think that reasonable safety measures have been taken to decrease any risk.
Appendix D

Participant Survey

**Participant Survey: The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio.**

*Please circle the best answer and return your survey response in the enclosed addressed and stamped envelope. Thank you for your participation and thoughtful responses.*

**How do you categorize your health district?**

Urban  Rural  Suburban  Other

**What is the population served by your health district?**

<table>
<thead>
<tr>
<th>Population Range</th>
<th>Number of Respondents</th>
</tr>
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<td>&lt;25,000</td>
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<tr>
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<td>15</td>
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<td>&gt;500,000</td>
<td>2</td>
</tr>
</tbody>
</table>

**What Ohio region does your health district identify with?**

Northeast  Northwest  Southeast  Southwest  Central

**What is the PHAB accreditation status of your health district?**

Applying for Accreditation  Accredited, seeking re-accreditation  Accredited, not seeking re-accreditation  Re-accredited  Not pursuing Accreditation

**How many environmental program(s) staff report to you (directly or through supervisors)?**

<table>
<thead>
<tr>
<th>Number of Staff</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
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<tr>
<td>3-4</td>
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<td>15-25</td>
<td>30</td>
</tr>
<tr>
<td>&gt;25</td>
<td>45</td>
</tr>
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</table>

**Estimate, on average the total number of hours you invest annually in accreditation activities.**

<table>
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<th>Number of Respondents</th>
</tr>
</thead>
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<tr>
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<td>501-1000</td>
<td>65</td>
</tr>
<tr>
<td>&gt;1000</td>
<td>85</td>
</tr>
</tbody>
</table>
Estimate, on average the total number of hours your staff invest annually in accreditation activities.

0-20  21-50  51-75  76-100  101-150  151-200  201-350  351-500  501-1000  >1000

How many additional environmental staff FTE’s have you added in the last 5 years due to accreditation activities?

0-0.5  0.6-1  1.1-1.5  1.6-2  2.1-3  4.1-5  5-7  7-10  >10

How many environmental staff FTE’s have you reallocated from other programs to accreditation activities in the last 5 years?

0-0.5  0.6-1  1.1-1.5  1.6-2  2.1-3  4.1-5  5-7  7-10  >10

Excluding personnel costs, what are your other top three costs associated with accreditation in the past 5 years?

1. __________________________________________
2. __________________________________________
3. __________________________________________

Considering the number of ODH survey deficiencies, recommendations and the final program survey determinations, please indicate the performance of each program in the past 5 years:

Food Service:  improved  declined  no change  not applicable
Campground:  improved  declined  no change  not applicable
Pools:  improved  declined  no change  not applicable
Animal bites:  improved  declined  no change  not applicable
Wells:  improved  declined  no change  not applicable
Home sewage:  improved  declined  no change  not applicable
Tattoo parlors:  improved  declined  no change  not applicable

In what specific ways has the accreditation process POSITIVELY impacted the outcomes of your environmental program surveys (audits) conducted in the past 5 years?

____________________________________________________________________________________
____________________________________________________________________________________
In what specific ways has the accreditation process NEGATIVELY impacted the outcomes of your environmental program surveys (audits) conducted in the past 5 years?

This completes the survey. Please return the survey in the enclosed addressed/stamped envelope. Thank you for your participation.
Appendix E

Research Participant Reminder email

RE: Research Reminder: The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio.

Dear Environmental Director,

Recently, you received a request for your participation in a doctoral research survey regarding the impact of Mandatory PHAB Accreditation on your agency. If you have already completed the survey, thank you. If you have not, your participation is still needed.

You are receiving this message because you have been identified as an environmental director at a local health district in Ohio. I am Wes Vins, a doctoral student in public administration working with co-investigator Dr. Kristen Crossney of West Chester University of Pennsylvania, and we are conducting doctoral dissertation research on The Impact of the Mandatory PHAB Accreditation Process on Environmental Health Programs at Local Health Districts in Ohio. We are very interested in your feedback and look forward to the return of your completed survey.

I kindly request your participation in this research. Nothing you choose to reveal in the study will be identifiable. Survey results will only be made available in an aggregate format and your personal information will remain private.

To participate, please review the enclosed informed consent document found in the mailing you have already received and proceed with the survey if you agree to participate.

Thank you for your participation,

Wes Vins, Doctoral Researcher
West Chester University of Pennsylvania