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Ashley Carroll, Student

Dr. Sarah Wackerbarth, Committee Chair

Dr. Richard Ingram, Director of Graduate Studies

# **Characterizing Region IV State Health Agency – Central Office’s Workforce Needs: Results from the 2021 Public Health Workforce Interest and Needs Survey (PH WINS)**

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of the requirements for the degree of  
Master of Public Health  
in the  
University of Kentucky College of Public Health  
By  
Ashley Carroll  
Murfreesboro, TN

Final Examination  
Lexington, Kentucky  
April 19, 2023

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## **ACKNOWLEDGEMENTS**

I would sincerely like to thank the de Beaumont Foundation for aiding me through the early stages of this project and allowing me to use their collected data. I would also like to thank my supervisors at the Kentucky Department for Public Health who have helped me learn and grow throughout my time there and have instilled in me a passion for public health workforce development. Lastly, I would like to thank my committee for their support and guidance throughout this process.

## ABSTRACT

The purpose of this project was to examine the Region IV State Health Agency – Central Office workforce in regards to retention and reasons for leaving; workforce satisfaction levels and how that influences retention; and training gaps among non-supervisors. An extensive review of existing literature was completed and showed that since the great recession, there has been a loss of 40,000 positions at state and local governmental health agencies (Castrucci & Lupi, 2020). In addition, from 2008 to 2019, there has been a 16 percent decline in the national public health workforce, and 47 percent of public health workers plan to leave or retire in the next five years (de Beaumont Foundation, 2017).

Results showed that the Region IV SHA-CO employees are predominately white (55.83%), female (81.25%), and between the ages of 31 and 50 (46.39%). Within Region IV SHA-CO, 30.65% of all employees were considering leaving within the next year and the top reason for leaving was pay (60.84%). Supervisors were also significantly more likely to report that the COVID-19 pandemic impacted their decision to leave or stay compared to non-supervisors, 21.10% versus 16.75%, respectively ( $p=0.037$ ). Job and organizational satisfaction remain high among Region IV SHA-CO employees. However, employees that fall within the groups of two or more races, between the ages of 31 to 50 years, and had an agency tenure of 6 to 10 years all reported lower average levels of job, organization, and pay satisfaction. The workforce environment item with the lowest overall job satisfaction mean was “My supervisor treats me with respect.” ( $M=4.47$ ). Followed closely by “My supervisor and I have a good working relationship.” ( $M=4.49$ ). Lastly, the top two training items among Region IV SHA-CO non-supervisors were related to budget and financial analysis.

This research discussed the implications of each result and the impact it has on the Region IV SHA-CO workforce and its ability to serve its surrounding communities. The analysis

also provides guidance for where Region IV SHA-CO public health practitioners and leaders can implement best practices for improving employee retention, satisfaction, and training based on the needs of the workforce.

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**KEYWORDS:** governmental public health workforce, PH WINS, Region IV SHA-CO, retention, workforce satisfaction, training gaps

## ACRONYMS AND ABBREVIATIONS

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Abbreviations	Definitions
PH WINS	Public Health Workforce Interest and Needs Survey
SHA-CO	State Health Agency – Central Office
HHS	United States Department of Health and Human Services
Supervisors	Supervisor, manager, and executive employee status
Workforce Satisfaction	Job satisfaction, organization satisfaction, and pay satisfaction



## INTRODUCTION

Public health literature has primarily focused on describing disease; determining environmental, physical, and social associations of disease; reporting study results; and evaluating program interventions. Less work has centered on understanding the public health workforce - those who influence the public health system (Sellers et al., 2015). This workforce is the first line of defense to prevent disease, protect health, and keep people safe. However, the number of public health workers has been in decline when we need them most (CDC, 2019). Over the past decade, there has been a 15 percent loss of essential staff in state and local health departments. This hinders the ability of those departments to provide services, prepare for emergencies, and address community health challenges (de Beaumont Foundation, 2021). Addressing any population health issue starts with the public health workforce. Without a well-trained, competent, resilient workforce, communities cannot be protected. Poor retention rates in this field will have major downstream implications on other population health issues. The public health field does not have an endless supply of money or people to utilize in the case of an emergency, so when people leave the workforce, it is a necessary aspect to examine. The de Beaumont foundation says it best “Communities don’t wait until there is a fire to start hiring firefighters. When there’s a fire, we expect firefighters to show up with the equipment and the right number of people” (Castrucci & Lupi, 2020, p. 1). The public health system should be no different. We cannot wait until there is an emergency to understand why individuals within the workforce are leaving and how to improve it.

The purpose of this project was to further investigate the Region IV State Health Agency - Central Office’s (SHA-CO) workforce using the 2021 Public Health Workforce Interests and Needs Survey (PH WINS). The PH WINS measures the strengths and gaps within the governmental public health workforce to help inform future funding, training, recruitment, and

retention investments. Therefore, this project explored demographic characteristics of Region IV SHA-CO employees; examined retention rates and reasons for leaving among Region IV SHA-CO's employees; investigated disparities between workforce demographic characteristics and workforce satisfaction levels; explored whether job satisfaction was related to certain workforce environment characteristics; and assessed training needs among Region IV SHA-CO non-supervisors.

## **LITERATURE REVIEW**

A strong public health workforce and infrastructure allows for disease detection and tracking, ensuring food and water safety, providing maternal and child healthcare, stopping outbreaks, and monitoring data (Centers for Disease Control and Prevention, 2022). However, this valuable workforce has been shrinking (Castrucci & Lupi, 2020). Therefore, this report further examined the retention rates among employees within Region IV SHA-CO, if there are associations or disparities between workforce satisfaction and certain workforce environment or demographic characteristics, and lastly, the training needs of the Region IV SHA-CO non-supervisors. Specifically, the below sections will review literature focusing on retention, job satisfaction, training needs, and public health workforce funding streams and how these can be used to influence strategies for improving the public health workforce.

### **The Current State of Governmental Public Health Workforce**

During the past 50 years, public health workforce development has shifted focus to strategies that prioritize workforce composition and size, recruitment and retention, training, and expected competencies in the practice of public health. This shift in focus is highlighted by the PH WINS data that was examined in this report. This new workforce prioritization was needed

because it is a gateway into which the public health system can improve population health (Sellers et al., 2019b).

Public health workforce settings and capacity vary greatly. Some are one-person local health departments that serve a small number of people, others are large city/metro health departments with thousands of employees serving large numbers of people, and everything in between. Furthermore, this type of workforce is forever changing with the demands. Workforce leaders continuously have to anticipate changes in the field, like the Affordable Care Act (ACA) or demographic transitions. As the demands and needs of populations change around the public health workforce, the necessary training and competencies must too. The key for any health department to improve health outcomes is to have a well-trained, diverse, empowered, satisfied, and well-compensated workforce (Sellers et al., 2019b).

Understanding the composition of state and local public health workforce is essential for effective succession planning. Several public health workforce composition studies have been published periodically since the early 21st century. In 2000, the Health Resources and Services Administration (HRSA) released the largest systematic study, at the time, on the governmental and non-governmental public health workforce. This was followed by a 2014 study focused solely on presenting the governmental public health workforce as the base of the public health system. Since then PH WINS has been the most extensive effort to collect worker characteristics (Sellers et al., 2019b). Accordingly, in the last ten years, most studies have identified workforce changes resulting from projected workforce turnover, budget cuts due to recessions, and deficiencies in training and education (Sellers et al., 2019b).

#### *Workforce Retention and Reasons for Leaving*

Over the past decade, the public health workforce has decreased by more than 15 percent. Since the COVID-19 pandemic, the quick scale-up and shifting of responsibilities have

continued to put pressure on a public health system already struggling with staff shortages before COVID-19 and employees nearing retirement. The 2014 and 2017 PH WINS data reveal that state and local health departments were already experiencing workforce declines even before the pandemic (de Beaumont Foundation, 2021; Kumar et al., 2022). Since the great recession, there has been a loss of 40,000 positions, more than one-fifth of the total workforce, at state and local governmental health agencies (Castrucci & Lupi, 2020). Constant employee turnover, such as that experienced within the public health workforce, can lead to several issues, such as low productivity, the cost of recruiting and training new employees, an inadequate workforce, and low organizational efficiency (Uludag et al., 2011).

Public health problems are usually complex and cannot be addressed with easy solutions, and this means that addressing these issues requires a well-trained and sustainable public health workforce (Otok et al., 2018). According to the 2017 PH WINS, from 2008 to 2019, there was a 16 percent decline in the national public health workforce, and 47 percent of public health workers plan to leave or retire in the next five years (de Beaumont Foundation, 2017). This includes people who will retire and many who are leaving the public health workforce altogether. Understanding employees' reasons for leaving is crucial for improving retention and recruitment efforts. The top five reasons for SHA employees leaving across the nation in 2017 included pay (46%), lack of advancement opportunities (42%), workplace environment (33%), job satisfaction (29%), and lack of support (27%) (de Beaumont Foundation, 2017).

The 2017 PH WINS data reveal that pay greatly contributes to why people leave the workforce. However, a study by Sellers et al. (2019b) examined the 2017 PH WINS data further and found that in the governmental public health workforce, 60 percent of Big City Health Coalition (BCHC) and almost 50 percent of State Health Agencies (SHA) and other local health departments (LHD) employees were satisfied or very satisfied with their pay. Among the staff

members considering leaving, 30 percent were either somewhat or very satisfied with their pay, compared to 56 percent of the employees not considering leaving. The Bureau of Labor Statistics also suggests that governmental public health job salaries are more competitive than the private sector and other industries nationwide (Yeager & Leider, 2019). For instance, SHA's and LHDs of BCHC's employees earn a median annual salary of around \$55,001 - \$65,000, and employees at other LHDs earn between \$45,001 and \$55,000 (Sellers et al., 2019b). Compared nationally, the median salary for all fields and sectors is around \$37,690 annually. In addition, the Bureau of Labor Statistics data reveals that when aggregated nationally, occupations within the public health field viewed as sensitive to salary competition are equivalent to those in the public and private sectors (Yeager & Leider, 2019).

Additionally, in a study examining demographics; job and workforce environment characteristics; job satisfaction; and reasons for initially joining the public health workforce, salary was not a predictor of intentions to leave the workforce (Liss-Levinson et al., 2015). This highlights that salary may be a significant motivator for employees leaving their jobs in some instances. However, it is not the only motivator or the primary motivator (Sellers et al., 2019b). Simply, increasing employees' salaries may not completely solve retention rates at the state and local levels. Pay is challenging to address because usually individual agencies operating within a larger state or local government agency do not have the autonomy to authorize pay increases (Sellers et al., 2020). However, other factors such as opportunities for advancement and improved job satisfaction, have an equal or even larger influence than pay. Furthermore, these factors can be influenced by leaders within the state and local health departments (Sellers et al., 2020).

The PH WINS data also reveals that from 2014 to 2017, the proportion of staff leaving was 41 percent higher (Sellers et al., 2019a). Within the public health workforce, about 15

percent of workers are 33 years or younger, and about one-third of this group reported an intent to leave within the following year. This places importance on retaining the younger generation of public health professionals who choose government service (Sellers et al., 2020). Managers and other senior deputies will be key stakeholders in improving retention rates among the workforce because they will allow for the smooth transfer of institutional knowledge and leadership changes (Sellers et al., 2019a). However, leadership at the highest levels are some of the staff most likely to retire in relatively large numbers. This leads to a loss of knowledge, experience, and leadership when examining the staff that holds management and executive positions. Research has shown that state health officials usually have relatively short tenures as leaders of SHA at around three years (Beitschl et al., 2019). This short turnover period emphasizes the major role managers play in maintaining stability and leadership during times of uncertainty. Chronic departures of department heads mean that deputy health officers and other managers become the gatekeepers of institutional expertise. They play a major role in the training and onboarding of new state health officials. Strategies from the literature to improve staff retention rates involve those looking to cultivate strong leaders within the departments. How employees feel about their workplace and supervisors will also influence their intent to leave (Sellers et al., 2020). How a supervisor creates a workplace that increases employee satisfaction will be challenging if they do not have formal training in organizational and employee development. Ensuring that resources are available to managers will be vital to retaining the governmental public health workforce.

### *Job and Organization Satisfaction*

Trained, satisfied, and experienced employees are crucial for long-term organizational success. The level of job satisfaction has been seen to be a strong predictor of whether an employee leaves their organization (Harper et al., 2015). As discussed previously, frequent

employee turnover can lead to many problems, which increases the burden on management and all employees. Therefore, keeping employees satisfied, committed, and motivated is key to organizational success (Uludag et al., 2011). Many studies within the private sector, social work, and education communities have examined that employees with high levels of job satisfaction are more productive and motivated, stay at their organizations longer, have fewer days of missed work, have more commitment to their organization, and are more engaged (Finster, 2013; Harper et al., 2015; Pitts et al., 2011; Uludag et al., 2011). However, little research has been conducted on exploring workforce satisfaction within public health and where disparities may lie among different employee groups and what workforce environment characteristics contribute to low satisfaction.

Job satisfaction has an important relationship with retention rate. It is no surprise that studies report SHA-CO employees, across all HHS regions, with higher satisfaction levels and better work environments are more likely to stay at their current job within the next year (Liss-Levinson et al., 2015). However, to improve this relationship between job satisfaction and staying within the workforce, it is important to understand what workforce characteristics contribute to both low and high levels of job satisfaction.

A study done by Harper et al. (2015) using the 2014 PH WINS and the Bowling Green University Job in General (JIG) Scale (a validated job satisfaction scale) looked to characterize the current level of job satisfaction among a national sample of state public health agency employees as well as identify workplace characteristics that are associated with high and low levels of job satisfaction. They found that those with higher salaries and supervisory status had a higher JIG Scale score, and this signifies higher job satisfaction among those in leadership roles and higher salaries. The study also found that those with a longer tenure at the agency (6-10 or 11-15 years) had lower JIG scores than those with shorter tenures (0 and 5 years). Job

satisfaction differences were also seen among public health employees who are nonwhite and non-supervisors. This indicates that employees falling within certain demographic categories may be less satisfied than others and therefore require more organizational and supervisory support (Harper et al., 2015). Regarding supervisory and organizational support, state health employees who reported higher levels of these factors tended to have an increased JIG score. However, job satisfaction was reported as being more closely related to organizational support. Organizational support included workload, communication, creativity, and training. Harper et al.'s (2015) study suggest that the best way to improve organizational support and therefore job satisfaction is by assessing employees' training needs and allowing them to work in innovative and creative ways.

A similar outcome is seen in other studies where respondents of the 2014 PH WINS reported that opportunities in training, communication, workload, and innovation would improve satisfaction levels (Wisniewski et al., 2019). It has also been seen that public health workers who self-reported proficiency in business skills report increased job satisfaction, higher annual salary, and a supportive training environment (Kornfeld et al., 2015). Additional studies done outside public health have also seen comparable results, where training opportunities, including mentoring and coaching, were correlated with overall job satisfaction and employees feeling supported and recognized by their organization (Rowden, 2002).

The 2017 PH WINS reveals that within SHAs across the nation, 13 percent of staff were dissatisfied or somewhat dissatisfied with their job, and 20 percent were dissatisfied or somewhat dissatisfied with their organization (de Beaumont Foundation, 2017). However, there seemed to be a lack of literature focusing on what workforce and demographic characteristics contributed to low or high levels of job satisfaction among public health employees in 2017 and 2021. Once these workforce and demographic characteristics are identified, they can be used to aid public



health practitioners and leaders in distinguishing high-need areas to help improve job satisfaction and, therefore retention, among their staff (Harper et al., 2015).

### *Workforce Training Needs*

The studies discussed above have nicely illustrated what factors can be addressed within the public health workforce that will increase employee job and organization satisfaction and therefore improve retention rates within the field. This leads to our final section which focuses on the public health workforce training needs. The public health field encompasses a range of disciplines that frequently requires different levels of preparedness and training, compared to other fields (Joly et al., 2018). At the center of any successful public health initiative are the public health workers. This workforce concentrates its efforts on communities and populations all while applying their knowledge of biostatistics, epidemiology, policy, and their ability to create coalitions and advocate for systematic change. This means that it is important that this workforce be fully prepared for the work that is required (Gebbie, 1999).

The governmental public health workforce has access to several training resources. Many can be completed through workshops, conferences, short courses, certifications, and e-learning through the Centers for Disease Control and Prevention (CDC) (Centers for Disease Control and Prevention, 2023; Joly et al., 2018). However, the 21st-century public health workforce needs a robust, responsive, and timely skill set and expertise that government employers can support through continuous professional development opportunities. This will help the workforce prepare for when the public health mission becomes more complex, and its service delivery landscape evolves (Joly et al., 2018).

According to the 2014 PH WINS report by the de Beaumont Foundation (2015), executives and employees across the nation agreed that the top 3 training needs included: influencing policy development, understanding the relationship between a new policy and many

types of public health problems, and assessing the broad array of factors that influence specific public health problems. The most important skills identified by all employees in 2014 were gathering reliable information, communicating effectively with different audiences, and persuading others to act (de Beaumont Foundation, 2015). The 2014 PH WINS also revealed the importance of Public Health Informatics (PHI) to the workforce. Although in 2014, only 1.4 percent of the public health workforce included PHI specialists, employees across many disciplines indicated that more emphasis needed to be placed on electronic health data (de Beaumont Foundation, 2015).

Since the creation of the PH WINS in 2014, there have been some changes made, specifically regarding training needs, to the survey distributed in 2017. The 2017 PH WINS assessed self-reported proficiency and the importance of about 20 cross-cutting skills in the workforce that will be critical in addressing public health challenges at the time and in the future (de Beaumont Foundation, 2017). The de Beaumont Foundation organized these into eight different focus areas. Among these eight areas, the top training needs of all employees included budgeting and financial management, where 55 percent of employees had a skill gap; systems and strategic thinking, 49 percent skill gap; and developing a vision for a healthy community, 45 percent skill gap (de Beaumont Foundation, 2017). The top two training need areas were the same across supervisory status in the workforce. However, for non-supervisors, the third largest training need was change management. In comparison, the third largest training need for supervisory, management, or executive level roles was developing a vision for a healthy community (de Beaumont Foundation, 2017).

As portrayed in the past PH WINS training needs, it is clear that the needs of the public health workforce are constantly changing and that even within the workforce, different types of employees, in different regions, and different entities are going to have varying training needs.

Sustaining this workforce will continue to require assessing these gaps in skills and knowledge and how those gaps can be filled by available, relevant training and tailored professional development programs (Joly et al., 2018).

### **Public Health Workforce Policies and Funding**

Funding is an important aspect of public health. Public health funding has been seen to be trending upward. As stated by the America Health Ranking report, in 2021, U.S. public health funding increased from \$87 to \$116 per person between 2017-2018 and 2019-2020. However, a large part of this increase was due to funding for COVID-19 (United Health Foundation, 2021). Increased public health spending has been positively correlated with improved health outcomes, decreased preventable deaths, and has led to successful disease prevention (Mays & Smith, 2011). To continue positive trends such as this, the public health workforce requires sufficient funding to not only design and implement successful programs but also maintain their skills and knowledge.

In May 2021, the Biden-Harris Administration announced plans to invest 7.4 billion dollars from the American Rescue Plan to recruit and hire public health workers to respond to the pandemic and prepare for future public health challenges. This funding will allow the U.S. to expand its public health workforce, creating jobs that support vaccinations, testing, contact tracing, community outreach, and strengthen America's future public health infrastructure (The White House, 2021). Reconstructing the public health workforce will be necessary to guarantee that health outcomes are improving over the long term (Kumar et al., 2022).

In addition to the American Rescue Plan, about \$3 billion of those funds are being used in the Strengthening Public Health Infrastructure grant. In November 2022, the CDC awarded \$3.2 billion to assist state, local, and territorial jurisdictions across the United States to strengthen their public health workforce and infrastructure (Centers for Disease Control and

Prevention, 2022). This grant will allow jurisdictions to recruit, train, and retain their workforce. The funding also contains \$140 million from a new appropriation for state, local, and territorial health departments to revitalize their public health infrastructures (Centers for Disease Control and Prevention, 2022). Federal funding such as the ones above creates an opportunity to provide the governmental public health workforce with the resources and support they need to help improve retention rates and job satisfaction.

In light of this review, a vast amount of literature surrounds public health workforce retention, workforce satisfaction, and overall training needs. Past PH WINS results have displayed that since 2014, there has been a 41 percent increase in those planning to leave their government organization nationwide. In addition, pay has been seen as a top reason for leaving, and job satisfaction has an important relationship with retention as well as available training opportunities (de Beaumont Foundation, 2017). However, most of the literature in this review was based on SHAs across the nation. This research, rather, had a narrower focus on exploring retention, workforce satisfaction, and training needs of SHA-CO employees only within Region IV. This narrowed focus will allow for pinpointing exact workforce needs and characteristics within these SHA-COs that can be utilized for workforce improvement and meeting the needs of Region IV employees.

## **METHODS**

This study aimed to better understand what type of employees are leaving the Region IV State Health Agency - Central Office (SHA-CO) workforce and why. Additionally, quantitative methods were used to gain insight into whether public health workforce satisfaction (job, organization, and pay satisfaction) has a significant relationship with intent to leave, and what workforce characteristics may influence workforce satisfaction the most. Furthermore, training needs of the Region IV SHA-CO non-supervisors were examined to determine where there may

be training gaps within the workforce. These research questions were investigated through statistical analyses utilizing previously collected data from a national governmental public health workforce survey, PH WINS.

### **Data Source**

The PH WINS was conducted in 2014, 2017, and most recently in 2021 by the de Beaumont Foundation in partnership with the Association of State and Territorial Health Officials (ASTHO), and with support from the National Association of City and County Health Officials (NACCHO), the Big Cities Health Coalition (BCHC), the Northwest Center for Public Health Practice, and the Region V Public Health Training Center. This survey is the only nationally representative source of data on the governmental public health workforce. It gathers data on the workforce demographics and individual public health employees' perspectives on key issues such as training needs, emerging concepts in public health, engagement, and morale (de Beaumont Foundation, 2022). The PH WINS has four main sections: demographics, workplace environment/job satisfaction, perceptions of national trends, and training needs (Harper et al., 2015).

This analysis used data from the 2021 PH WINS, which included 29 big city health departments (members of the BCHC), 47 state health agencies (SHAs), and 259 other local health departments (LHDs). There was a total of 44,732 individuals from these participating health departments that completed the survey in 2021, a 35 percent response rate (de Beaumont Foundation, n.d.). For the purposes of this analysis, the dataset was further reduced to only include SHA-CO employees within Region IV with a final sample size of 1,726. The Department of Health and Human Services (HHS) Region IV includes the south-eastern states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

### **Variables of Interest**

First, demographic characteristics of Region IV SHA-CO employees were examined. Second, analysis focused on exploring intention to leave and COVID-19 impact to stay or leave among non-supervisors and supervisors. Next, workforce satisfaction (job, organization, and pay satisfaction) levels were examined among the different demographic characteristics and workforce environment characteristics. Lastly, training gaps among non-supervisors were determined.

### *Demographics*

The demographic variables of interest included Race/Ethnicity, Gender, Age, Degrees Attained, Supervisory Status, Tenure in Current Agency (years), and Tenure in Current Position (years). Table A1 illustrates the demographic characteristic variables' questions and response options. These served as independent variables to the three workforce satisfaction variables.

### *Retention and Reasons for Leaving*

A total of three dependent retention items were of interest. The first item asked "Are you considering leaving your organization within the next year? If so, what are you planning to do?". Answer options included "No", "Yes, to retire", "Yes, to pursue further education", "Yes, to take another governmental job (in public health)", "Yes, to take another governmental job (not in public health)", "Yes, to take a non-governmental job (in public health)", "Yes, to take a non-governmental job (not in public health)", and "Yes, leaving the workforce". The second item asked "Did the COVID-19 pandemic impact your decision to stay or leave your organization?". The response options included "I was thinking about staying, but COVID made me want to leave"; "I was thinking about staying, and COVID made me want to stay more"; "I was thinking about leaving, but COVID made me want to stay"; "I was thinking about leaving, and COVID made me want to leave more"; and "COVID did not impact my decision to leave or stay". The last retention item asked "Please select the most important reason(s) why you are considering

leaving your organization” and included 18 different response options to choose from such as pay, stress, lack of training, lack of support, etc. (Table A2).

### *Workforce Satisfaction*

The three dependent workforce satisfaction variables included “how satisfied are you with your job?”, “how satisfied are you with your organization?”, and “how satisfied are you with your pay?”. Respondents were asked to rate their level of satisfaction with each on a Likert scale of “1 – Very dissatisfied”, “2 – Somewhat dissatisfied”, “3 – Neither dissatisfied nor satisfied”, “4 – Somewhat satisfied”, and “5 – Very satisfied” (Table A3).

In addition, there was a total of 20 items on workforce environment within PH WINS. These asked the respondents to “rate your level of agreement with the following items” on a Likert scale of “1 - Strongly disagree”, “2 - Disagree”, “3 - Neither agree nor disagree”, “4 - Agree”, and “5 - Strongly agree”. These items covered factors such as **supervisory support** (e.g. “My supervisor and I have a good working relationship” and “My supervisor/team leader treats me with respect”), **employee engagement** (e.g. “The work I do is important” and “I am determined to give my best effort at work every day”), and **organizational support** (e.g. “My training needs are assessed” and “Employees have sufficient training to fully utilize technology needed for their work”) (Harper et al., 2015). Because the literature showed that organizational support and supervisory support were associated with job satisfaction only the 10 items related to these factors were chosen as the independent variables (Table A4) (Harper et al., 2015). The items related to organizational support included “Creativity and innovation are rewarded.”, “Communication between senior leadership and employees is good in my organization.”, “My training needs are assessed.”, “Employees have sufficient training to fully utilize technology needed for their work.”, and “I recommend my organization as a good place to work.”. The items related to supervisory support included “Supervisors work well with employees of different

backgrounds.”, “Supervisors in my work unit support employee development.”, “My supervisor provides me with opportunities to demonstrate my leadership skills.”, “My supervisor and I have a good working relationship.”, and “My supervisor treats me with respect.”

### *Training Needs*

Lastly, there were a total of 25 training need variables that were examined for Region IV SHA-CO non-supervisors. As an example, the training item “Communicate in a way that persuades others to act” focuses on effective communication, whereas “Collect valid data for use in decision making” focuses on data-based decision making. Other training items covered justice equity, diversity, and inclusion (“describe the value of a diverse public health workforce”) or budget and financial management (“describe financial analysis methods applicable to programs and customer service”). In Table A5 each question and response option is displayed. The employee responded to the 25 training need items in regard to how important each was in their day-to-day work on a Likert scale of “1 - Not Important”, “2 - Somewhat unimportant”, “3 - Somewhat important”, or “4 - Very Important”. Employees also responded to the same 25 training need items indicating their current skill level for each on a Likert scale of “1 - Not Applicable”, “2 - Unable to perform”, “3 - Beginner”, “4 - Proficient”, or “5 - Expert”.

### **Analytic Plan**

Only the entries within HHS Region IV and SHA-CO were included, resulting in a total sample size of N=1,726 individual participants. SHA-CO employees are those who are permanent employees and work in the central office of the SHA compared to having been assigned to local or regional offices (Harper et al., 2015). To begin, all variables of interest were evaluated to check for missing data points. However, observations with missing data were not immediately removed as some missing values were due to skip patterns based on the participant's response to a previous survey item. For instance, the survey asked, “Are you considering leaving



your organization within the next year?” The participant could then select “no” or “yes”. If the participant selected “no” the question “Please select the most important reason(s) why you are considering leaving your organization.” would not have been displayed. Therefore, a missing value would appear for that participant’s question. The subsequent sections state if missing values were removed based on the variables examined. For instance, the missing values within the demographics, workforce satisfaction, and training items were removed because these questions were not based on survey skip patterns. R version 4.1.2 was used to conduct the statistical analysis for this project.

### *Demographics*

Relative frequency tables were summarized to examine the distribution of the 7 demographic variables of interest among Region IV SHA-CO employees. All missing observations were removed resulting in a total of 1,440 observations.

### *Retention and Reasons for Leaving*

The three retention variables were first assessed by summarizing the relative frequencies of each. Answer options for “considering leaving within the next year” that included coded values of 2, 3, 4, 5, 6, 8, and 9 were re-coded to “yes” and coded values of 1 were re-coded to “no” under a new variable. Answer options for “did COVID-19 impact decision to stay or leave” that were coded as 1 through 4 were re-coded as “impact” and coded values of 5 were re-coded as “no impact” under a new variable. This was because the report was not intended to assess what employees were planning to do if they left or the specific impact COVID-19 had on employees, but rather if employees were planning to leave or stay in general, or if COVID-19 had an impact or no impact in general. A chi-square test of independence was used to determine if there was a significant difference in considering to leave within the next year based on the independent variable supervisory status (Rana & Singhal, 2015). Similarly, a chi-square test of

independence was again used to determine if there was a significant difference between COVID-19 impact based on supervisory status. A significance cut-off of  $\alpha=0.05$  was used for all analyses in this report to determine if differences existed in outcomes between supervisors vs non-supervisors.

### *Workforce Satisfaction*

First, the overall job, organization, and pay satisfaction was obtained. This was done by finding the percentage of respondents who chose answer options of either “Somewhat satisfied” or “Very satisfied”. Next, job, organization, and pay satisfaction means were obtained for each level of the demographic variables. Missing observations were removed for each demographic and satisfaction variable separately.

Additionally, chi-squared tests were used to explore if there were any relationships between job satisfaction and the 10 workforce environment variables. Job satisfaction means were then obtained for each level of the workforce environment variables. All missing observations were removed.

### *Training Needs*

To conclude the analysis, the training variables were examined for Region IV SHA-CO non-supervisors because these employees comprised the majority of the workforce compared to supervisors, managers, and executives. Missing observations were removed for each training item separately. For instance, if within a training item, an observation had a missing value for importance but not skill level, that observation for both importance and skill level was removed. Column means were calculated for the 25 training variables for both the importance and skill level responses. The average skill (range: 1 – 5) was subtracted from the average importance (range: 1 – 4) for the training item to get an average training gap (Importance - Skill = Training Gap) (range -3 – 3). Due to the Likert scale for current skill level including a “Not Applicable”

response option, these responses were re-coded from 1 to 0 so they would not impact the column means and so that both importance and skill level would be based on a 4-point scale. A training item mean based on importance with a value closer to 1 indicated lower importance, whereas a value closer to 4 indicated higher importance for the training item. A training item mean in relation to skill level with a value closer to 1 indicated a lower skill level and a value closer to 4 indicated a higher skill level. When the overall training item mean for skill level was subtracted from the same overall training item mean for importance it displayed the training gap for that training item. A training gap close to 3 indicated that there was a low amount of skill, but high importance for the training item. A training gap closer to -3 indicated a training item that employees are highly skilled at but it was of low importance. If the training gap was closer to 0, the training item was of equal importance and skill level.

## **RESULTS**

### *Demographics*

Based on the analysis, the Region IV SHA-CO workforce is predominately white (55.83%), female (81.25%), and between the ages of 31 and 50 (46.39%). Regarding education, a majority of the workforce had obtained either a Bachelor's degree (32.92%) or Master's degree (34.86%). Non-supervisors make up most of the Region IV SHA-CO workforce at about 67%. In addition, most of those surveyed had worked in their current agency and in their current position between 0 and 5 years (46.88% and 68.47%, respectively) (Table B1).

### *Retention and Reasons for Leaving*

Within Region IV SHA-CO 30.65% of all employees were considering leaving within the next year. Of those considering leaving 27.03% were leaving to take another governmental job within public health (Figure B1). In addition, of the employees considering leaving within the next year, the top 5 reasons for leaving included: pay (60.84%), lack of opportunities for

advancement (40.68%), work overload/burnout (34.60%), organizational climate/culture (34.41%), and stress (32.13%) (Table B2). Furthermore, about 18% of all Region IV SHA-CO employees responded that the COVID-19 pandemic impacted their decision to leave or stay at their organization (Table B3).

The first chi-square analysis showed that there was no significant difference between Region IV SHA-CO non-supervisors and supervisors/managers/executives' intending to or considering leaving their organization within the next year (30.32% versus 31.39%, respectively;  $p=0.697$ ). However, Region IV SHA-CO supervisors/managers/executives were significantly more likely to report that the COVID-19 pandemic impacted their decision to leave or stay compared to non-supervisors, 21.10% versus 16.75%, respectively ( $p=0.037$ ). Results can be seen in Table B4.

### *Workforce Satisfaction*

About 81% of Region IV SHA-CO employees were somewhat/very satisfied with their job. Respondents appeared to be less satisfied with their organizations with only 69.4% reporting they were somewhat/very satisfied. Pay satisfaction was relatively moderate with only 41.7% of employees reporting they were somewhat/very satisfied (Figure B2).

Job, organization, and pay satisfaction all had significant relationships with "considering leaving within the next year" ( $p<0.001$ ). Therefore, the subsequent analysis looked to examine what demographic characteristics and workforce environment characteristics may have a relationship with the workforce satisfaction variables and thus may impact retention. Lower *Job satisfaction* was seen among Region IV SHA-CO employees who were two or more races ( $M=3.94$ ), men ( $M=3.99$ ), between the ages of 31 and 50 ( $M=3.98$ ), those with doctoral degrees ( $M=3.84$ ), non-supervisors ( $M=4.06$ ), a position tenure between 16 and 20 years ( $M=3.91$ ), and agency tenure between 6 and 10 years ( $M=3.93$ ).

Regarding *organization satisfaction*, those of two or more races were seen to have the lowest mean ( $M=3.60$ ). Male employees compared to women saw lower *organization satisfaction* ( $M=3.72$ ). Lower *organization satisfaction* means were also seen among employees between the ages of 31 and 50 ( $M=3.65$ ), those with doctoral degrees ( $M=3.58$ ), supervisors/managers/executives ( $M=3.68$ ), those who have been in their position between 6 and 10 years ( $M=3.57$ ), and those who have an agency tenure of 6 to 10 years ( $M=3.61$ ).

Lastly, *pay satisfaction* was seen to have lower mean satisfaction scores among those of two or more races ( $M=2.51$ ), females ( $M=2.87$ ), employees between the ages of 31 and 50 years ( $M=2.75$ ), those with associate degrees ( $M=2.68$ ), non-supervisors ( $M=2.81$ ), employees with position tenures between 11 and 15 years and 16 and 20 years ( $M=2.69$ ), and those with agency tenure between 6 and 10 years ( $M=2.75$ ). Results are displayed in Table B5.

The chi-square tests found the 10 workforce environment variables to be significantly associated with job satisfaction below the 0.05 level, however, post-hoc tests were not conducted to determine which category or categories differed significantly from the others. For each workforce environment item, higher satisfaction was associated with a higher level of agreement. The workforce environment item with the lowest overall job satisfaction mean was “My supervisor treats me with respect.” Followed closely by “My supervisor and I have a good working relationship.” Employees who strongly agreed with the two statements had a mean satisfaction score of 4.47 and 4.49. Both these items were related to supervisory support. The workforce environment item related to organizational support with the lowest overall job satisfaction mean was “I recommend my organization as a good place to work.” However, the workforce environment item with the highest overall job satisfaction mean was related to organizational support and was “Communication between my senior leadership and employees is

good in my organization.” Employees who strongly agreed with this statement had a mean job satisfaction score of 4.81 (Table B6).

### *Training Needs*

The training item with the highest training gap for Region IV SHA-CO non-supervisors was “Describing how public health funding mechanisms support agency programs and services” with a mean importance of 2.87 (“Somewhat important”) and a mean skill level of 1.66 (“Beginner”). The training gap calculated from these means was 1.21. The second highest training gap was “Describe financial analysis methods applicable to program and service delivery.” The mean importance for this item was 2.67 (“Somewhat important”) and the mean skill level was 1.46 (between “Unable to perform” and “Beginner”). The training gap was 1.20. This was followed by the training item with the third highest training gap, “Describe the value of an agency business plan” which had a mean importance of 2.71 (“Somewhat important”), a mean skill level of 1.54 (between “Unable to perform” and “Beginner”), and a training gap value of 1.17. However, overall, in terms of training gaps, Region IV SHA-CO non-supervisors reported proportional importance ratings and skill levels across the 25 training items. Table B7 displays values for all 25 training items on mean importance, mean skill level, and training gap. The values are organized in descending order from largest to smallest training gaps.

## **DISCUSSION**

The purpose of this research was to further explore the Region IV SHA-CO workforce in terms of retention, workforce satisfaction, and training needs based on the 2021 national governmental public health survey, PH WINS. This data should further expand the knowledge about the Region IV SHA-CO workforce and directly inform strategies to guarantee that this workforce can properly function in order to address health challenges and improve Region IV health outcomes.

### *Who is the Region IV SHA-CO workforce?*

Within the Region IV SHA-CO workforce, about 4 times as many employees are 50 years and older compared to those younger than 31 years. Also, worth noting is that over two-thirds of the workforce has been in their current position for 5 or fewer years. In general, the workforce is well-educated with less than 15% having no college degree. The findings of the aging workforce and a large portion of the workforce with 5 years or fewer within their current position may suggest a potential challenge in the workforce pipeline for Region IV SHA-COs. Increased engagement with Region IV universities and public health programs is needed to help recruit younger people into the Region IV SHA-CO workforce. In addition, over half of the workforce consisted of individuals who identify as white. Region IV SHA-COs can only apply effective services by employing a diverse workforce that reflects the diversity of the communities they serve. With persistent racial/ethnic health disparities, it is of even greater importance to have a representative workforce (Bogaert et al., 2019; Liss-Levinson et al., 2015).

### *Retention and Reasons for Leaving*

Results demonstrated that over a quarter of the Region IV SHA-CO workforce is leaving within the next year with pay being the top reason for leaving followed by a lack of advancement opportunities. These results are consistent with the National 2021 PH WINS findings as well as 2017 PH WINS studies (de Beaumont Foundation, 2017; de Beaumont Foundation and Association of State and Territorial Health Officials, 2022; Sellers et al., 2019b; Sellers et al., 2020). This highlights that pay has in fact been a contributor to public health workforce retention for several years not only across the country but also within Region IV. In addition, pay satisfaction was seen to be dependent on intent to leave within the next year, which was also consistent with previous research (Liss-Levinson et al., 2015). However, this may indicate that it is not a certain dollar amount or pay grade that is related to satisfaction and considering leaving,

but instead, how an employee's reality aligns with their expectations. Therefore, it may be important for Region IV SHA-CO human resource managers to evaluate how Region IV employees' salary expectations align with their actual salaries (Liss-Levinson et al., 2015).

Furthermore, to address employees leaving due to a lack of advancement opportunities, leaders can look to create mentoring opportunities, stretch assignments, or other programs that allow employees to learn, grow, and challenge themselves. Initiatives such as these will help employees further develop their leadership skills and aid in succession planning for when supervisors/managers/executives retire or leave (Bogaert et al., 2019).

It was interesting to note that intention to leave within the next year was independent of supervisor status. Supervisors play a large role in how non-supervisors feel about their workplace and therefore influence intent to leave (Harper et al., 2015; Sellers et al., 2020). Based on this previous research, it was expected that supervisor status would have had a direct relationship with the intent to leave. This could be explained by the fact that supervisors may have reported leaving within the next year due to retiring. Further research should explore retirement levels among Region IV SHA-CO supervisors and how that may impact succession planning. However, implications from this study are still important because regardless of why a supervisor or non-supervisor is leaving, the negative consequences of losing employees for the organization will be the same (Liss-Levinson et al., 2015).

In comparison, supervisor status did have a significant relationship with COVID-19 impacting employees' decision to leave or stay at their organization. Region IV SHA-CO supervisors/managers/executives were more likely than non-supervisors to report that COVID-19 impacted their decision to leave or stay. This infers that in times of crises, supervisors are more likely to be influenced to leave or stay at their organization. Therefore, workforce development and other support mechanisms should be put in place to help aid Region IV SHA-CO supervisors



during times of emergencies. Past studies have demonstrated that supervisors play a major role in maintaining stability and leadership during times of uncertainty (Beitschl et al., 2019). However, more experienced public health employees were also more likely to encounter higher levels of burnout during the COVID-19 pandemic. This is perhaps due to taking on additional roles and responsibilities in several functional areas compared to non-supervisor staff (Stone et al., 2021). In addition, during the pandemic, we saw a large number of state and local health officials resign across the country. The challenges faced in implementing control measures and the use of public health emergency powers, along with the politicization of public health may have had a large influence on supervisors' decision to leave or stay at their organization. A study done on public health workforce burnout during the COVID-19 pandemic saw a large change in the career trajectory of many working within public health, with a large number planning to retire or leave in 1 to 2 years (Stone et al., 2021). Future research should explore if more supervisors were planning to leave or stay due to COVID-19 and the reasons behind Region IV SHA-CO supervisors leaving due to the COVID-19 pandemic. This could potentially inform emergency preparedness and response interventions to help support employees in leadership roles. Leadership turnover will be an important factor for SHA-COs to consider due to it disrupting the organization not only during routine times but especially during times of crises (Stone et al., 2021).

### *Workforce Satisfaction*

Results from this study are consistent with several other findings in that retention is directly related to job, organization, and pay satisfaction (Sellers et al., 2020; Liss-Levinson et al., 2015). Despite having high levels of job and organization satisfaction, over one-quarter of the workforce was still considering leaving within the next year. Therefore, this study was interested

in further understanding where satisfaction disparities may lie within different demographic groups.

Respondents who fell within the group of two or more races saw the lowest job satisfaction mean. Other research among a national SHA population has demonstrated that satisfaction differs significantly among those who are nonwhite and non-supervisors (Harper et al., 2015). Future research should explore other factors related to diversity and job satisfaction. This finding was accentuated to bring awareness to public health practitioners that employees may have specific and individual needs for attaining job satisfaction and that race/ethnicity should always be considered.

Men and women did not differ greatly when it came to job and organization satisfaction. However, women, on average, had a much lower pay satisfaction score compared to men. This may suggest that there is a pay gap between men and women within Region IV SHA-COs. This is consistent with the public health literature where men have been seen to be associated with higher salaries (Sellers et al., 2019a). Past research has shown that pay satisfaction is an important indicator of intent to leave and due to the public health workforce being predominantly female, pay equity may be an important factor to address within Region IV SHA-CO.

Attention should also be given to exploring how age impacts workforce satisfaction and attrition. Respondents within the age group of 31 to 50 years of age saw the lowest satisfaction means across job, organization, and pay. This suggests that employees falling within this category may require additional focus if Region IV SHA-COs are looking to improve workforce satisfaction and retention. In 2017, 43% of U.S. state and local public health employees 35 years of age and under had been considering leaving, however, the actual turnover of this age group between 2017 and 2021 was 74% (Leider et al., 2023). This suggests that job satisfaction may differ between age groups within agencies and tailored programs that look to boost support and

professional development opportunities for those groups may be necessary. Additional research may find it valuable to increase the granularity of classes to further identify certain employees and develop more specified interventions.

Interestingly, those who held a doctoral degree saw the lowest job and organization satisfaction right below the “Somewhat satisfied” level. This may be explained by the fact that there was a lower number of doctoral degree holders who completed the survey (N=106) compared to other degree holders. However, it is possible that although higher-educated individuals may enjoy greater benefits such as increased pay and job autonomy, they may also experience increased job pressures and longer working hours that contribute to decreased job and organization satisfaction (Solomon et al., 2022). It may be beneficial for leaders within Region IV SHA-CO to consider how they can help manage the increased demands on their highly-educated staff so that it does not lead to eventual turnover. Future research should explore if factors such as increased job stress, responsibilities, and extended working hours does contribute to lower workforce satisfaction among Region IV SHA-CO’s doctoral degree holders.

Consistent with previous research, workforce satisfaction levels do slightly differ between supervisors/managers/executives and non-supervisors (Harper et al., 2015). However, the greatest difference is in pay satisfaction. Considering that non-supervisors make up a majority of the workforce, this reaffirms the finding that pay was the top reason for leaving. Due to pay being harder to change, leaders within Region IV SHA-CO should consider focusing on providing their non-supervisory staff more organizational support and creating strong supervisor relationships which past research has shown to be correlated with increased job satisfaction (Bogaert et al., 2019).

Previous research has demonstrated that there have been significant differences in job satisfaction among employees with shorter agency tenure (Bogaert et al., 2019). Results from

past studies show that employees with agency tenure between 6 - 10 and 16 - 20 years have lower job satisfaction. In comparison, Region IV employees with 6 to 10 years at their agency have lower job, organization, and pay satisfaction. This suggests that there needs to be continued support provided to employees after their first couple of years at the agency. Support such as professional development options along with increased job opportunities and responsibilities may help increase the average satisfaction for those who have been with the agency longer and therefore increase overall employee tenure at the agency (Bogaert et al., 2019).

While pay was a top reason for leaving and pay satisfaction is relatively low compared to job and organization satisfaction, other components related to the employee's environment must be contributing to considering leaving. Results demonstrated that each of the workforce environment variables is significantly related to and dependent on job satisfaction and therefore consequently related to "considering leaving within the next year". However, because the workforce environment items all had a significant relationship with job satisfaction, it may not be highly informative to Region IV SHA-COs that are trying to identify specific areas to address in order to improve job satisfaction. Therefore, job satisfaction means were explored based on workforce environment items. Workforce environment items with the lowest level of overall job satisfaction included supervisor respect and supervisor-nonsupervisory relationships. This finding accentuates the importance of empowerment, trust, and collaboration of supervisors and non-supervisors in the workplace. This aligns with past research in that high-quality supervisory relationships are important to the public health workforce (Harp et al., 2015; Campbell et al., 2004). To meet this need leaders within Region IV SHA-COs may find that additional management and diversity trainings will help ensure that they are adequately prepared to provide supervisory support to their employees in the way of active communication, clear expectations, and listening. Leaders can also look to provide their employees with opportunities to take

initiative on projects. These opportunities will demonstrate the increased trust supervisors have in their employees and create learning opportunities (Harper et al., 2015).

Although, individual leaders in SHAs rarely have control over compensation, other factors such as fulfilling training needs; rewarding innovation and creativity; or improving communication have all been seen to influence workforce satisfaction and need to be considered to improve retention (Bogaert et al., 2019).

### *Training Needs*

Increased workforce development and training activities are commonly advocated for in public health (Harper et al., 2015). Within this report, skills with the top training gaps were identified. The skills with the top training gaps involved understanding public health funding mechanisms and financial analysis methods. This correlates with the literature in that the 2017 PH WINS reported that 55% of national survey respondents said that budgeting and financing knowledge was one of the biggest gaps (Halverson, 2019). In addition, the national results for the 2021 PH WINS reported that the top training needed was budget and financial management (de Beaumont Foundation, 2021). Results from the above sections described that lack of opportunities for advancement was a top motivator for leaving. Therefore, training gaps in these areas may be holding back potential candidates for promotions and highlighting that there is a need for increased financial literacy (Halverson, 2019). This study suggests that Region IV SHA-COs use these training gaps to examine where future development programs need to be targeted within their workforce. Region IV agencies should ensure that they are offering their employees training opportunities that will leave them confident in funding mechanisms and financial analysis methods. Employees who are more financially versed will lead to more cost-effective delivery methods of public health services (Halverson, 2019). Further investment and time in these training gaps will have the potential to increase the workforce's satisfaction along with

retention (Rowden, 2002). Federal grants, such as the Strengthening Public Health Infrastructure grant, are giving SHAs the funds and opportunities to create tailored training programs that will revitalize their workforce. That being said, it is also suggested that each Region IV SHA-CO, to a greater extent, examine what training gaps may be specific to their organization's employees. In addition, further evaluation should be done to ascertain the delivery methods that will be most beneficial for their employees.

To sufficiently address training gaps, emphasis needs to be given to bridging the gap between SHAs and academic organizations, and other public health training centers. Partnering with universities can be a substantial asset to providing continuing education and professional development opportunities for health department staff. These institutions are educating the future public health workforce and can provide that same knowledge and skill sets to the current public health workforce. Furthermore, these partnerships will help create pipeline programs that help incentivize graduates to enter and stay within governmental public health positions.

## **IMPLICATIONS**

### *Policy and Practice*

- Almost 31% of all employees with Region IV SHA-COs were considering leaving within the next year. This highlights a major challenge that Region IV SHA-COs need to address in their workforce plan. Components such as succession planning not only during routine times but also for emergencies such as COVID-19 should be considered. Specifically plans that will support supervisors/managers/executives during times of crises.
- Pay is the top reason for leaving Region IV SHA-COs. Pay has also been the top reason for leaving the national governmental public health workforce for several years. Although pay is somewhat unchangeable within an organization, it may be valuable for Region IV

SHA-COs to understand their employee's salary expectations and how they line up with actual pay. In comparison, other reasons for leaving such as burnout, organizational culture, and stress can be changed through intervention approaches and will have the potential to influence retention in a more salient way.

- Overall, job and organizational satisfaction remain high among Region IV SHA-COs. However, employees that fall within the groups of two or more races, between the ages of 31 to 50 years, and those with an agency tenure of 6 to 10 years all reported lower average levels of job, organization, and pay satisfaction. This highlights that different groups will have different workforce needs and leaders within Region IV SHA-CO may want to further understand what factors are tied to workforce satisfaction among these groups in order to help improve retention.
- Supervisory support is important to Region IV SHA-CO employees. Leaders should look to participate in workforce development opportunities that will equip them with the management skills needed to support their employees. Region IV SHA-COs should continue to stress the importance of clear communication and collaboration between supervisors and non-supervisors.
- Training gaps among Region IV SHA-COs non-supervisors are consistently related to budget and financial management. Region IV SHA-COs should look to partner with academic institutions and public health training centers to ensure that their employees are receiving the training needed to feel confident in doing their day-to-day job.

#### *Future Work*

SHA-COs within Region IV should separately examine the needs of their employees. Each SHA that participated in the PH WINS has access to their survey data and the potential to use that data to advance their workforce. For instance, the Kentucky Department for Public

Health (KDPH) has a public health champion in charge of the PH WINS data and who can use that data within the department. Currently, KDPH is looking to utilize that data to examine their retention rates, reasons for leaving, and training needs of their employees and how these findings compare to the National and Region IV PH WINS rates. Based on these findings KDPH will be able to determine where workforce improvement is needed to help increase satisfaction and retention. It is suggested that each Region IV SHA-CO, if not already, further utilize their PH WINS data to influence their workforce development initiatives. In addition, the PH WINS only collects data every couple of years whereas, SHA-CO leaders may want to consider conducting employee satisfaction surveys every couple of months to ensure they are up to date and aware of their employee's current concerns and needs. Exit interviews may also be beneficial for collecting valuable information on workforce satisfaction and retention.

### **LIMITATIONS**

This study had several limitations. First, not all States located within the HHS Region IV participated in the 2021 PH WINS. Georgia and Tennessee did not contribute to the 2021 survey. Therefore, results from this analysis cannot be generalized to those governmental public health agencies. Moreover, data from this study should only be generalized to SHA-CO staff within Region IV and not any local health department staff. In addition, nonresponse bias was a concern if the non-respondents differed from the respondents (Robins et al., 2022). The 2021 PH WINS had a lower overall response rate and high incomplete rate compared to the 2017 survey. In 2021, the response rate was 35% with an email open rate of 40%, where about 87% of those who opened the email completed the survey (Robins et al., 2022). Self-selection bias was also possible if the respondents felt particularly motivated to complete the survey due to strong opinions on their agency and job.



Additionally, there was a limitation raised using the intention to leave one's job as a substitute for those who actually leave. In other words, the study was able to examine the predictors of employees considering leaving their organization within the next year, however, we do not know how many Region IV SHA-CO employees actually quit within the next year. Although, studies do suggest that those who plan to quit is a good predictor of those who actually quit (Griffeth, 2000; Liss-Levinson et al., 2015). Furthermore, understanding employees who are considering leaving is potentially more valuable for SHAs in that it gives them the ability to administer interventions for those considering leaving.

## **CONCLUSION**

Based on this study we know a significant amount of the Region IV SHA-CO workforce planned to leave within the year and that times of crises, like COVID-19, have an impact on whether or not supervisors/managers/executives will stay or leave their organization. This brings to attention the importance supervisors play during emergency times and that support and preparedness programs should be implemented to help relieve the burdens on leadership during times like COVID-19. In addition, this study highlights that although job and organization satisfaction is high, it still varies among different groups within Region IV SHA-COs and that to address retention and improve satisfaction, the specific needs of these groups need to be examined in each SHA-CO. Lastly, major training gaps exist in the area of budget and financial management among Region IV SHA-CO employees. These gaps may be contributing to why employees are missing out on advancement opportunities and subsequently leaving the workforce. The necessary training must be provided to not only maintain our workforce but to also provide employees opportunities to learn, grow, and serve their communities to the best of their ability. Successfully mitigating outbreaks, chronic diseases, health disparities, natural disasters, etc., will all depend on the strength of the governmental public health workforce

(Castrucci & Fraser, 2019). The insights provided by the PH WINS will help health agencies critically and effectively address workforce issues and ensure a happier and more productive workforce. This survey allows government public health agencies to understand their workforce's weaknesses, strengths, and characteristics that will enable the creation of tailored programs to improve retention, satisfaction, and training needs.

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**APPENDIX A**  
Variables of Interest

Table A1. Demographic variables of interest with question and answer options

<b>Variable</b>	<b>Question</b>	<b>Response</b>
Q5_10XC	Please select the racial category or categories with which you most identify.	1 - American Indian or Alaska Native 2 - Asian 3 - Black or African American 4 - Hispanic or Latino 5 - Native Hawaiian or other Pacific Islander 6 - White 7 - Two or more races
Q5_8	Do you describe yourself as a man, a woman, or in some other way?	1 - Man 2 - Woman 3 - Some other way (if you wish, you may elaborate)
Q5_11XCT	Age in years (categories collapsed x2)	1 - <31 2 - 31-50 3 - 51+
HighestDegree		0 - No college 1 - Associates 2 - Bachelors 3 - Masters 4 - Doctoral
Q5_3XC	Supervisory Status Collapsed x2	1 - Non-supervisors 2 - Supervisors, Managers, Executives
Q5_12_1X	Tenure in Current Position (categories)	1 - 0-5 years 2 - 6-10 years 3 - 11-15 years 4 - 16-20 years 5 - 21 or above
Q5_12_2X	Tenure in Current Agency (categories)	1 - 0-5 years 2 - 6-10 years 3 - 11-15 years 4 - 16-20 years 5 - 21 or above

Table A2. Retention variables of interest with question and answer options



Variable	Question	Response
Q5_16	Are you considering leaving your organization within the next year? If so, what are you planning to do?	1 - No 2 - Yes, to retire 3 - Yes, to take another governmental job (in public health) 4 - Yes, to take another governmental job (not in public health) 5 - Yes, to take a non-governmental job (in public health) 6 - Yes, to take a non-governmental job (not in public health) 8 - Yes, to pursue further education 9 - Yes, leaving the workforce
Q257	Did the COVID-19 pandemic impact your decision to stay or leave your organization?	1 - I was thinking about staying, but COVID made me want to leave 2 - I was thinking about staying, and COVID made me want to stay more 3 - I was thinking about leaving, but COVID made me want to stay 4 - I was thinking about leaving, and COVID made me want to leave more 5 - COVID did not impact my decision to leave or stay
Q127_18 to Q127_31, Q127_33, Q127_36 to Q127_38	Please select the most important reason(s) why you are considering leaving your organization.	* Lack of acknowledgment/recognition Job satisfaction Lack of opportunities for advancement Lack of training Leadership changeover

		<p>Better opportunities outside of the agency</p> <p>Pay</p> <p>Retirement</p> <p>Satisfaction with your supervisor</p> <p>Stress</p> <p>Lack of flexibility (flex hours/telework)</p> <p>Weakening of benefits (e.g., retirement contributions/pensions, health insurance)</p> <p>Work overload/burnout</p> <p>Organizational climate/culture</p> <p>Lack of support</p> <p>Job instability (e.g., loss of funding, RIF, layoffs)</p> <p>Reasons unrelated to my job (e.g., family obligations, health reasons, lack of affordable child-care options, moving, etc.)</p> <p>Other (Please Specify)</p>
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\*Each response option was its own variable.

Table A3. Satisfaction variables of interest with question and answer options

Variable	Question	Response
Q2_6_1	Considering everything, how satisfied are you currently with your job?	<p>1 - Very dissatisfied</p> <p>2 - Somewhat dissatisfied</p> <p>3 - Neither dissatisfied nor satisfied</p>

		4 - Somewhat satisfied 5 - Very satisfied
Q2_6_2	Considering everything, how satisfied are you currently with your organization?	1 - Very dissatisfied 2 - Somewhat dissatisfied 3 - Neither dissatisfied nor satisfied 4 - Somewhat satisfied 5 - Very satisfied
Q2_6_3	Considering everything, how satisfied are you currently with your pay?	1 - Very dissatisfied 2 - Somewhat dissatisfied 3 - Neither dissatisfied nor satisfied 4 - Somewhat satisfied 5 - Very satisfied

Table A4. Workforce Environment variables of interest with question and answer options

<b>Variable</b>	<b>Question</b>	<b>Response</b>
Q2_3_46	Creativity and Innovation are rewarded.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree
Q2_3_47	Communication between my senior leadership and employees is good in my organization.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 – Agree 5 – Strongly Agree
Q2_3_48	Supervisors work well with employees of different backgrounds.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree
Q2_3_49	Supervisors in my work unit support employee development.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree
Q2_3_50	My training needs are assessed.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree

		4 - Agree 5 – Strongly Agree
Q2_3_51	Employees have sufficient training to fully utilize technology needed for their work.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree
Q2_3_53	My supervisor provides me with opportunities to demonstrate my leadership skills.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree
Q2_3_56	My supervisor and I have a good working relationship.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree
Q2_3_57	I recommend my organization as a good place to work.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree
Q2_3_58	My supervisor treats me with respect.	1 – Strongly Disagree 2 - Disagree 3 - Neither agree nor disagree 4 - Agree 5 – Strongly Agree

Table A5. Training variables of interest with question and answer options

<b>Variable</b>	<b>Question</b>	<b>How important is this item in your day-to-day work?</b>	<b>What is your current skill level for this item?</b>
Q3_T1_1a Q3_T1_1b	Effectively target communications to different audiences (e.g., the public, community organizations, external partners, the scientific community, etc.)	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_2a Q3_T1_2b	Communicate in a way that persuades others to act	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner

		4 - Very Important	4 - Proficient 5 - Expert
Q3_T1_3a Q3_T1_3b	Identify appropriate sources of data and information to assess the health of a community	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_4a Q3_T1_4b	Collect valid data for use in decision making	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_5a Q3_T1_5b	Identify evidence-based approaches to address public health issues	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_6a Q3_T1_6b	Describe the value of a diverse public health workforce (e.g., diverse in terms of race, ethnicity, gender, age, sexual orientation)	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_7a Q3_T1_7b	Support inclusion of health equity and social justice principles into planning for program and service delivery (e.g., include health equity in a strategic plan, promote health-in-all-policies, engage marginalized and under resourced communities in decision making)	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_8a Q3_T1_8b	Deliver socially, culturally, and linguistically appropriate programs and customer service	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_9a Q3_T1_9b	Describe financial analysis methods applicable to program and service delivery	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_10a Q3_T1_10b	Describe how public health funding mechanisms support agency programs and services (e.g., categorical grants, state	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient

	general funds, fees, third-party reimbursement, tobacco taxes)		5 - Expert
Q3_T1_11a Q3_T1_11b	Describe the value of an agency business plan (e.g., tool for analyzing and planning for a product or service that will meet a community need, will generate revenue, and be sustainable)	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_12a Q3_T1_12b	Describe the influence of internal changes (e.g., personnel changes, funding cuts, internal policies, etc.) on organizational practices	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_13a Q3_T1_13b	Assess the external drivers in your environment (e.g., physical, political, social, fiscal, etc.) that may influence your work	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_14a Q3_T1_14b	Describe how social determinants of health impact the health of individuals, families, and the overall community	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_15a Q3_T1_15b	Participate in quality improvement processes (e.g., Plan-Do-Check-Act, SWOT analysis, fishbone, lean, kaizen, etc.) for agency programs and services	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_16a Q3_T1_16b	Describe the value of community strategic planning that results in a community health assessment or community health improvement plan	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_17a Q3_T1_17b	Describe your agency's strategic priorities, mission, and vision	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_18a Q3_T1_18b	Describe the importance of engaging community members in the design and implementation of programs to improve health in a community	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert

Q3_T1_19a Q3_T1_19b	Engage community assets and resources (e.g., Boys & Girls Clubs, public libraries, hospitals, faith-based organizations, academic institutions, federal grants, fellowship programs) to improve health in a community	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_20a Q3_T1_20b	Collaborate with public health personnel across the agency to improve the health of the community	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_21a Q3_T1_21b	Describe your role in improving the health of the community served by the agency	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_22a Q3_T1_22b	Describe the relationship between a policy and many types of public health problems.	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_23a Q3_T1_23b	Collect and summarize information to inform the development of policies external to the organization that affect the health of the community (e.g., transportation routes, earned sick leave, tobacco 21, affordable housing/inclusionary zoning, complete streets, healthy food procurement)	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_24a Q3_T1_24b	Content knowledge specific to my programmatic area	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert
Q3_T1_25a Q3_T1_25b	Technical skills specific to my programmatic area	1 - Not Important 2 - Somewhat Important 3 - Somewhat Important 4 - Very Important	1 - Not Applicable 2 - Unable to Perform 3 - Beginner 4 - Proficient 5 - Expert

## APPENDIX B

### Results

Table B1. Demographic Composition of Region IV SHA-CO Employees (N = 1,440)

Variables	Response Categories	Relative Frequency (%)
Race/Ethnicity	American Indian or Alaska Native	0.76%
	Asian	1.81%
	Black or African American	26.11%
	Hispanic or Latino	11.67%
	Native Hawaiian or Other Pacific Islander	0.14%
	White	55.83%
	Two or more races	3.68%
Gender	Man	17.57%
	Women	81.25%
	Some other way	1.18%
Age	<31	9.79%
	31-50	46.39%
	51+	43.82%
Highest Degree	No college degree	14.31%
	Associates	11.67%
	Bachelors	32.92%
	Masters	34.86%
	Doctoral	6.25%
Supervisory Statuses	Non-supervisors	67.43%
	Supervisors, Managers, and Executives	32.57%
Tenure in Current Agency	0-5 years	46.88%
	6-10 years	15.14%
	11-15 years	13.40%
	16-20 years	9.93%
	21 or above	14.65%
Tenure in Current Position	0-5 years	68.47%
	6-10 years	12.92%
	11-15 years	8.26%
	16-20 years	5.42%
	21 or above	4.93%

Figure B1. Region IV SHA-CO Employees considering leaving within the next year (N=529)



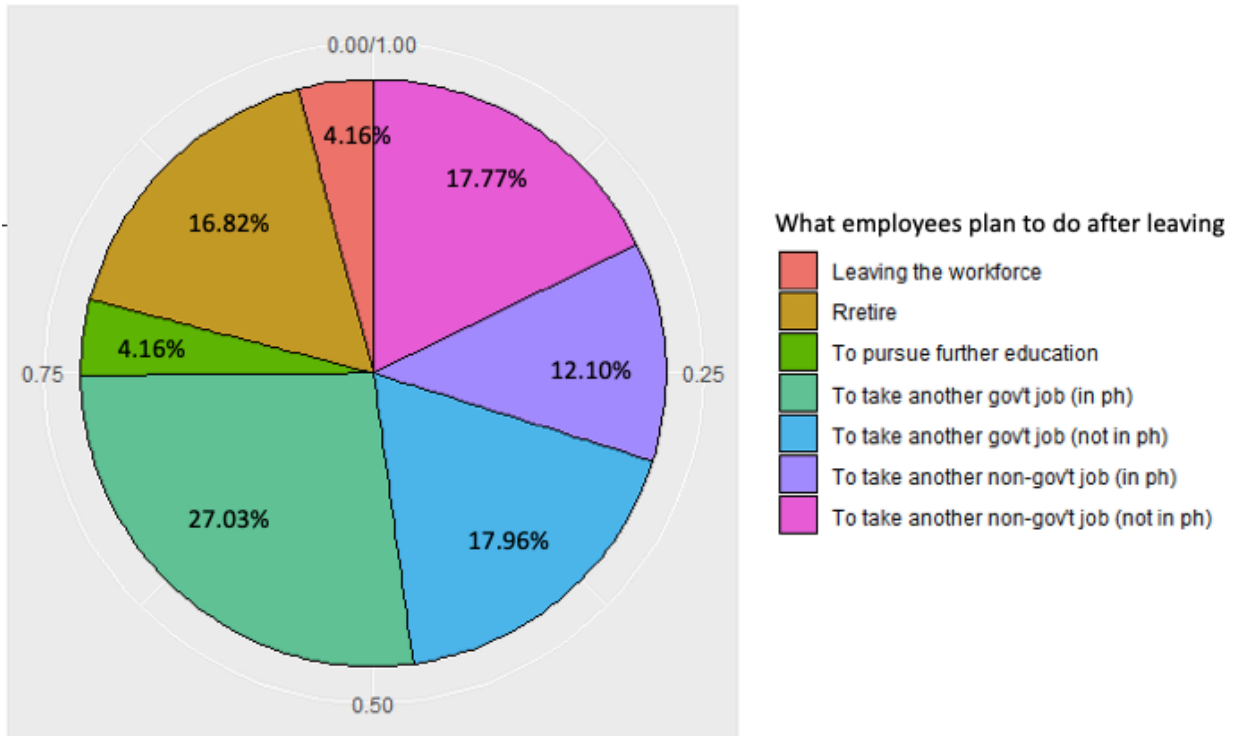


Table B2. Top 5 Reasons Region IV SHA-CO employees are considering leaving within the next year (N=526)

Reasons for leaving the workforce	Relative Frequency (%)
Pay	60.84%
Lack of advancement opportunities	40.68%
Work overload/burnout	34.60%
Organizational climate/culture	34.41%
Stress	32.13%

Table B3. Impact COVID-19 had on all Region IV SHA-CO Employees to leave or stay at their organization (N=1,702)

Did the COVID-19 pandemic impact your decision to stay or leave your organization?	Relative Frequency (%)
I was thinking about staying, but COVID made me want to leave	6.03%
I was thinking about staying, and COVID made me want to stay more	2.67%
I was thinking about leaving, but COVID made me want to stay	3.48%
I was thinking about leaving, and COVID made me want to leave more	5.68%
COVID did not impact my decision to leave or stay	80.76%

Table B4. Results of Chi-Square Analyses of Retention Variables by Supervisor Status

Retention Variables	Relative Frequency (%)		$\chi^2$	p-value
	Non-Supervisors	Supervisors/Managers/ Executives		
Considering Leaving in the next year (N=1,726)	30.32%	31.39%	0.15	0.697
COVID-19 Impacted decision to stay or leave (N=1,702)	16.75%	21.10%	4.35	0.037

Figure B2. Overall Workforce Satisfaction for Region IV SHA-CO Employees (N=1,717)

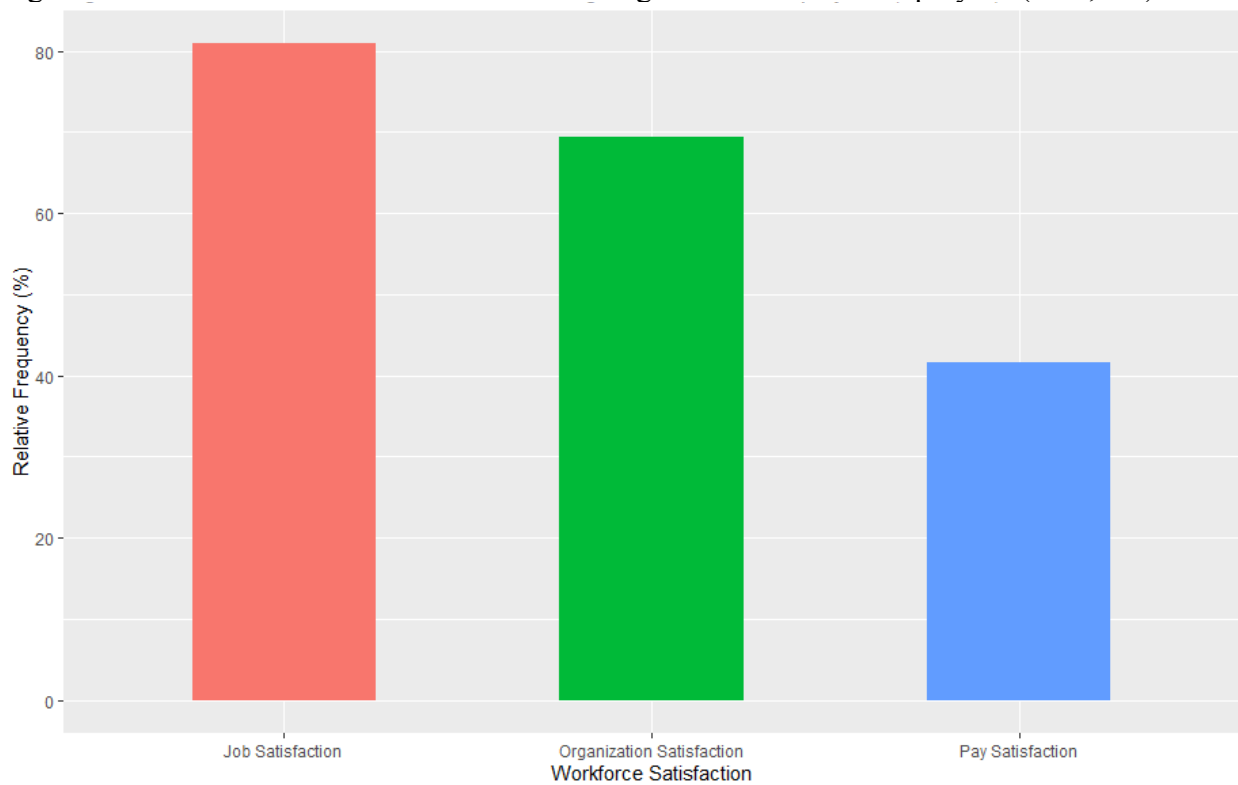


Table B5. Mean Workforce Satisfaction by Demographic Characteristics

Workforce Demographics	Job Satisfaction Mean (range: 1-5) (N=1,439)	Organization Satisfaction Mean (range: 1-5) (N=1,435)	Pay Satisfaction Mean (range: 1-5) (N=1,436)

<b>Race/Ethnicity</b>			
American Indian or Alaska Native	4.18	3.82	3.09
Asian	4.12	3.73	2.96
Black or African American	4.11	3.74	2.78
Hispanic or Latino	4.19	3.88	2.81
Native Hawaiian or Other Pacific Islander	4.50	4.50	4.00
White	4.05	3.70	2.97
Two or more races	3.94	3.60	2.51
<b>Gender</b>			
Male	3.99	3.72	3.02
Female	4.11	3.75	2.87
Other	3.53	2.71	2.24
<b>Age in years (categories collapsed x2)</b>			
< 31	4.09	3.81	2.84
31 – 50	3.98	3.65	2.75
51+	4.19	3.80	3.04
<b>Highest Degree</b>			
No college degree	4.14	3.95	2.82
Associates	4.10	3.73	2.68
Bachelors	4.11	3.75	2.92
Masters	4.06	3.66	2.95
Doctoral	3.84	3.58	2.93
<b>Supervisory Status Collapsed x2</b>			
Non-Supervisors	4.06	3.76	2.81
Supervisors, Managers, and Executives	4.12	3.68	3.05
<b>Tenure in Current Position (years)</b>			
0-5 years	4.10	3.79	2.95
6-10 years	3.98	3.57	2.72
11-15 years	4.06	3.63	2.69
16-20 years	3.91	3.58	2.69
21 or above	4.24	3.67	2.99
<b>Tenure in Current Agency (years)</b>			
0-5 years	4.12	3.83	2.86
6-10 years	3.93	3.61	2.75
11-15 years	4.10	3.66	2.87
16-20 years	4.01	3.63	2.96
21 or above	4.15	3.69	3.08

Table B6. Mean Job Satisfaction by Workforce Environment Characteristics (N=1,685)

<b>Workforce Environment Characteristics</b>	<b>Job Satisfaction Mean (range: 1-5)</b>
<b>Creativity and Innovation are rewarded.</b>	

Strongly Disagree	2.79
Disagree	3.53
Neither Agree nor Disagree	3.97
Agree	4.43
Strongly Agree	4.79
<b>Communication between my senior leadership and employees is good in my organization.</b>	
Strongly Disagree	2.81
Disagree	3.62
Neither Agree nor Disagree	3.98
Agree	4.40
Strongly Agree	4.81
<b>Supervisors work well with employees of different backgrounds.</b>	
Strongly Disagree	2.25
Disagree	3.03
Neither Agree nor Disagree	3.62
Agree	4.13
Strongly Agree	4.61
<b>Supervisors in my work unit support employee development.</b>	
Strongly Disagree	2.55
Disagree	2.89
Neither Agree nor Disagree	3.58
Agree	4.11
Strongly Agree	4.62
<b>My training needs are assessed.</b>	
Strongly Disagree	2.62
Disagree	3.49
Neither Agree nor Disagree	3.83
Agree	4.29
Strongly Agree	4.74
<b>Employees have sufficient training to fully utilize technology needed for their work.</b>	
Strongly Disagree	2.78
Disagree	3.62
Neither Agree nor Disagree	3.88
Agree	4.28
Strongly Agree	4.80

<b>My supervisor provides me with opportunities to demonstrate my leadership skills.</b> Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree	2.43 3.07 3.56 4.12 4.62
<b>My supervisor and I have a good working relationship.</b> Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree	2.24 2.76 3.25 3.92 4.49
<b>I recommend my organization as a good place to work.</b> Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree	2.17 2.83 3.58 4.32 4.83
<b>My supervisor treats me with respect.</b> Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree	2.42 2.84 3.05 3.84 4.47

Table B7. Region IV SHA-CO Non-Supervisor Training Gaps

	<b>Average Importance in day-to-day work</b> range (1 - 4)	<b>Average Current Skill Level</b> range (0 - 4)	<b>Training Gap</b> range (-3 - 3)
Describe how public health funding mechanisms support agency programs and services (e.g., categorical grants, state general funds, fees, third-party reimbursement, tobacco taxes) (N=1,027)	2.868	1.659	1.209
Describe financial analysis methods applicable to program and service delivery (N=1,028)	2.665	1.463	1.202

Describe the value of an agency business plan (e.g., tool for analyzing and planning for a product or service that will meet a community need, will generate revenue, and be sustainable) (N=1,026)	2.708	1.538	1.170
Collect and summarize information to inform the development of policies external to the organization that affect the health of the community (e.g., transportation routes, earned sick leave, tobacco 21, affordable housing/inclusionary zoning, complete streets, healthy food procurement) (N=1,022)	2.781	1.651	1.130
Describe the influence of internal changes (e.g., personnel changes, funding cuts, internal policies, etc.) on organizational practices (N=1,033)	2.955	1.831	1.124
Describe the value of community strategic planning that results in a community health assessment or community health improvement plan (N=1,030)	2.789	1.673	1.117
Engage community assets and resources (e.g., Boys & Girls Clubs, public libraries, hospitals, faith-based organizations, academic institutions, federal grants, fellowship programs) to improve health in a community (N=1,013)	2.938	1.823	1.115
Describe the relationship between a policy and many types of public health problems. (N =1,025)	2.909	1.853	1.057
Describe the importance of engaging community members in the design and implementation of programs to improve health in a community (N=1,021)	2.919	1.867	1.052
Describe how social determinants of health impact the health of individuals, families, and the overall community (N =1,031)	3.079	2.058	1.020
Assess the external drivers in your environment (e.g., physical, political, social, fiscal, etc.) that may influence your work (N=1,029)	2.931	1.923	1.008
Support inclusion of health equity and social justice principles into planning for program and service delivery (e.g., include health equity in a strategic plan, promote health-in-all-policies, engage marginalized and under resourced communities in decision making) (N=1,042)	3.066	2.070	0.996
Participate in quality improvement processes (e.g., Plan-Do-Check-Act, SWOT analysis, fishbone, lean, kaizen, etc.) for agency programs and services (N=1,045)	3.145	2.172	0.973

Collaborate with public health personnel across the agency to improve the health of the community (N =1,027)	3.141	2.172	0.969
Identify appropriate sources of data and information to assess the health of a community (N=1,053)	3.216	2.264	0.952
Identify evidence-based approaches to address public health issues (N=1,053)	3.216	2.269	0.947
Describe the value of a diverse public health workforce (e.g., diverse in terms of race, ethnicity, gender, age, sexual orientation) (N=1,052)	3.125	2.213	0.912
Deliver socially, culturally, and linguistically appropriate programs and customer service (N=1,056)	3.279	2.406	0.873
Describe your agency's strategic priorities, mission, and vision (N=1,033)	3.231	2.378	0.854
Collect valid data for use in decision making (N=1,066)	3.540	2.743	0.797
Effectively target communications to different audiences (e.g., the public, community organizations, external partners, the scientific community, etc.) (N=1,060)	3.466	2.696	0.770
Describe your role in improving the health of the community served by the agency (N=1,029)	3.116	2.350	0.766
Content knowledge specific to my programmatic area (N=1,068)	3.731	2.994	0.737
Technical skills specific to my programmatic area (N=1,067)	3.672	2.948	0.724
Communicate in a way that persuades others to act (N=1,064)	3.434	2.734	0.700