

Master of Public Health  
Integrative Learning Experience Report

***2017 Kansas Public Health Workforce Assessment Results***

by

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submitted in partial fulfillment of the requirements for the degree

MASTER OF PUBLIC HEALTH

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## Abstract

Performing routine assessments of workforce proficiency is important for any field. The results from these assessments make it possible to identify and develop the specific education and training necessary for improvement. Workforce assessments are especially important for the field of public health since this workforce is responsible for providing essential public health services.

The state of Kansas has conducted several public health workforce assessments; in 2003/2005, 2014, and most recently, in 2017. The Kansas assessments, executed by the Kansas Department of Health and Environment (KDHE), are accomplished by surveying the staff members of the KDHE and local health departments (LHDs). The survey determines workforce proficiency by asking participants to report a self-assessment of several public health core competencies. The 2017 assessment results show that the Kansas public health workforce is newer and younger than the 2014 workforce. Hence, educating, training, and retaining this workforce could be more crucial than ever before. The education and training needs for the Kansas workforce, determined by the 2017 assessment, are financial planning and management, public health science, and analytical/assessment skills.

Two national public health workforce assessments were conducted in 2014 and 2017. The national assessments used surveys to determine workforce proficiency in a similar way to the Kansas surveys. Since both national and Kansas public health workforce assessments were completed in 2017, this report shares interesting results from the comparison of the two assessments. One of these comparison results is that the 2017 national assessment determined that budget and financial management is a top training need for the national public health workforce, which is also true for the Kansas workforce. Therefore, one of the recommendations from this report is to develop strategies providing education and training in financial planning and management to the Kansas public health workforce.

New public health workforce assessments are scheduled to be conducted in 2020, both nationally and in Kansas. It will be interesting to determine if the recommendations from previous assessments were implemented and if they have improved the proficiency of the respective public health workforces. It is important for Kansas to continue improving the survey used for assessments. One recommendation from this report is to add more spatial components to the survey, so even more specific recommendations can be developed.

**Subject Keywords:** Kansas, public health, workforce, core competencies, assessment, survey

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# Chapter 1 - Literature Review

One of the goals included in *Healthy People 2020* is to ensure that every public health agency has the infrastructure required to adequately provide the ten essential public health services.<sup>1,2</sup> The ten essential public health services are listed below:<sup>2</sup>

1. Monitor Health
2. Diagnose & Investigate
3. Inform, Educate, Empower
4. Mobilize Community Partnerships
5. Develop Policies
6. Enforce Laws
7. Link to / Provide Care
8. Assure Competent Workforce
9. Evaluate
10. Research

A capable and qualified workforce is one component of the public health infrastructure and is one of the ten essential public health services. To assure that a workforce is capable and qualified, the workforce must be assessed. From the assessment, effective education and training strategies can be developed in order to increase the competency of the workforce.

Surveys are a tool commonly used to complete workforce assessments for all fields. For public health, the assessment surveys use questions involving the core competencies of public health to determine the proficiency of the workforce. National surveys, named the Public Health Workforce Interests and Needs Survey (PH WINS), were conducted in 2014 and 2017.<sup>3,4,5</sup> This survey is the only nationally representative survey of state and local public health workers. Forty-seven state health agencies and 25 large-city agencies participated in the 2017 PH WINS. In addition, the 2017 survey included, for the first time, employees from a nationally representative sample of local health departments (LHDs) with at least 25 staff members and serving a jurisdiction of at least 25,000. The 2017 PH WINS found that a large proportion of the national public health workforce was considering leaving their respective organization in the next year.<sup>6</sup> The PH WINS is scheduled to be conducted again in fall 2020.

Regions and states have utilized similar surveys to conduct more localized public health workforce assessments, and these have resulted in the identification of workforce needs and uses.<sup>7,8,9</sup> For example, a 2010 survey in Nebraska found that several LHDs in the state did not have enough staff to cover several important public health services and programs including

those related to and/or serving mental health, sexually transmitted diseases, occupational safety and injury, oral health, and health disparities. From the results of the Nebraska survey, it was also apparent that individual public and environmental health practitioners at many LHDs fill multiple roles in which they do not necessarily have formal training.<sup>9</sup> In these situations, cross-training is important for sharing knowledge and skills to fill gaps.

The Kansas Department of Health and Environment (KDHE) is a state agency that is responsible for assuring public health and promoting environmental quality in Kansas. The KDHE consists of three divisions headquartered at the Curtis State Office Building in Topeka, Kansas. The three divisions are the Division of Public Health, the Division of Environment, and the Division of Health Care Finance. The agency also consists of several satellite locations including the Kansas Health and Environmental Laboratories, located at a separate building in Topeka, and six District Offices located throughout the state (Table 1.1).<sup>10</sup>

The KDHE assessed the Kansas public health workforce by conducting a survey of the KDHE staff in 2003 and LHDs staff in 2005. A second workforce assessment survey was conducted for both the KDHE staff and LHDs staff in 2014. The results of the 2014 assessment were published in a 2015 report prepared by the Kansas Public Health Workforce Development Coordinating Council (Appendix 1). The most recent Kansas public health workforce assessment survey was completed in 2017. The primary focus of my project was to analyze the data from the 2017 assessment, compare the results to the 2014 assessment, and prepare a report of the results. My preceptor for this project was Cristi Cain, MPH. Ms. Cain has been the Director/Accreditation Coordinator for the Local Public Health Program of the KDHE's Bureau of Community Health Systems (Division of Public Health) since 2015. In addition to Ms. Cain, Ms. Amy Gaier, Public Health Specialist, KDHE Local Public Health Program, provided me with helpful data and answered my questions for the project.

**Table 1.1** KDHE District Office Locations

| <b>District Office</b> | <b>Location</b> |
|------------------------|-----------------|
| Northwest              | Hays, KS        |
| North Central          | Salina, KS      |
| Northeast              | Lawrence, KS    |
| Southwest              | Dodge City, KS  |
| South Central          | Wichita, KS     |
| Southeast              | Chanute, KS     |

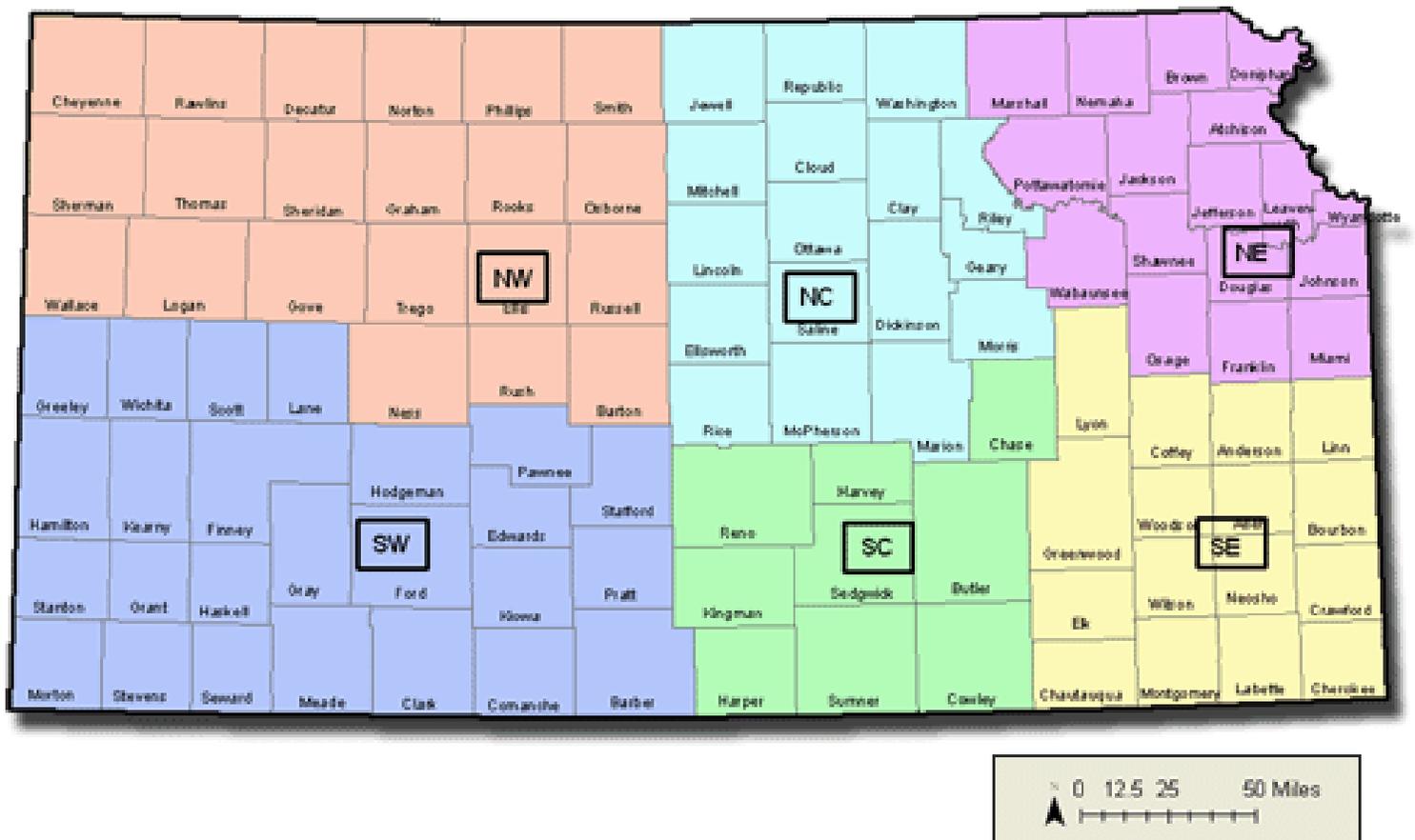


Figure 1.1 Map of the Six KDHE Districts<sup>10</sup>

## Chapter 2 - Project Description and Learning Objectives

For my Applied Practice Experience (APE), I assisted the KDHE by organizing and analyzing data that was collected from the 2017 Kansas Public Health Workforce Assessment survey. This survey was created using Qualtrics Survey Software and can be found in Appendix 2 of this report. The survey was separated into three sections. Section One included demographics questions, Section Two included the core competencies self-assessment, and Section Three included questions on training preferences. Data from Section Three of the survey was not provided for the analysis. Therefore, results for Section Three are not included in this report.

The public health core competencies used for Section Two of the survey were a simplified version of those developed by The Council on Linkages between Academia and Public Health Practice (Council on Linkages). These core competencies for public health professionals are organized into the following eight domains:<sup>11</sup>

Domain 1: Analytical/Assessment Skills

Domain 2: Policy Development/Program Planning Skills

Domain 3: Communication Skills

Domain 4: Cultural Competency Skills

Domain 5: Community Dimensions of Practice Skills

Domain 6: Public Health Science Skills

Domain 7: Financial Planning and Management Skills

Domain 8: Leadership and System Thinking Skills

Descriptions for each domain can be found on the Public Health Foundation's website.<sup>12</sup> Each domain's respective core competencies can be found in the 2017 survey (Appendix 2).

For each core competency, survey participants were asked to select one of the following responses:

- Not at all proficient
- Some limited proficiency
- Proficient
- Very proficient
- Does not apply to my job
- I do not understand this question

The voluntary 2017 Kansas Public Health Workforce Assessment survey was promoted to all of the KDHE and LHDs staff members. Incentives, awarded through a random drawing, were offered to encourage participation and the responses of each participant were confidential.

After organization and analysis of the data from the survey, graphs/charts and tables were developed to include in this report. The results of the 2017 assessment were then compared with the results of the 2014 workforce assessment to determine similarities and differences. Using the results from the 2017 survey, the Kansas public health workforce education and training needs were assessed. From this assessment, recommendations were developed with the goal of improving the proficiency of the Kansas public health workforce.

My learning objectives for this project included: (1) become familiar with the contents of the survey and learn the proper methods for analyzing the data obtained from the Kansas public health workforce assessment survey; (2) accurately interpret, compare, and report the data collected from the survey; (3) learn how to assess the results and determine the most important Kansas public health workforce education and training needs; and (4) develop appropriate recommendations for improving the proficiency of the Kansas public health workforce. To achieve these objectives, I reviewed literature resources and attended several meetings where Kansas public health professionals discussed what questions/methods worked and didn't work for the 2017 assessment survey. These meetings also included preparations for the upcoming 2020 Kansas Public Health Workforce Assessment survey.

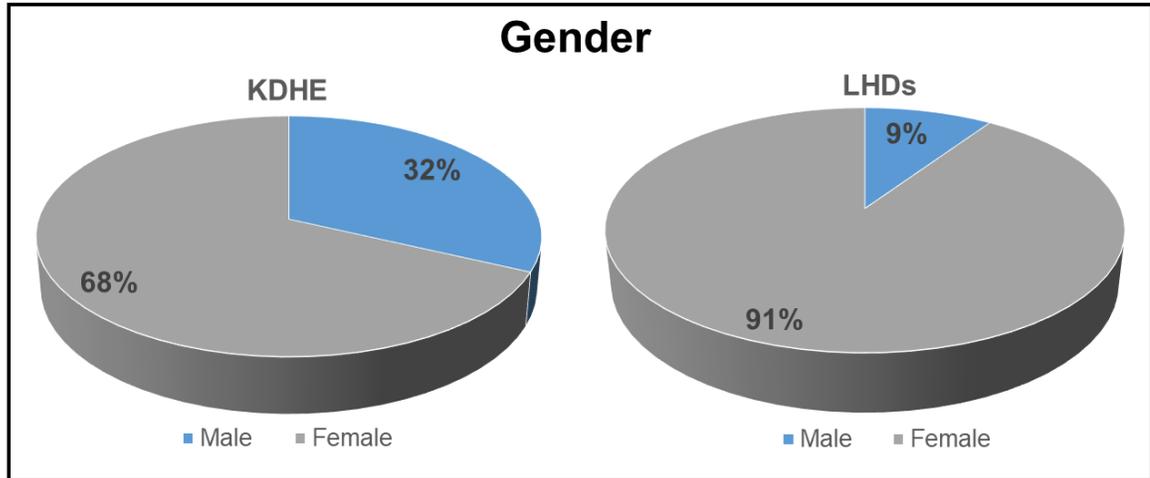
## Chapter 3 - Results

The results of the 2017 Kansas Public Health Workforce Assessment survey are presented below in four sections: 1) response rate 2) demographics; 3) public health core competencies total proficiency percentage by domain; and 4) public health core competencies “Does not apply to my job” response percentage by domain. It was decided to display the results in a similar format to the 2015 report, using charts and graphs that would allow for easier comparisons.

### 2017 Kansas Public Health Workforce Assessment Survey Response Rate

A total of 1,652 respondents completed the 2017 assessment survey. The KDHE had 748 respondents (45%) and LHDs had 904 respondents (55%). Several respondents left some of the survey questions unanswered. An exact response rate is still being calculated as the total number of KDHE and LHDs staff members in 2017 has yet to be determined. A total of 1,648 respondents completed the 2014 assessment survey, which yielded an overall response rate of 67%. Therefore, the 2017 overall response rate is predicted to be similar to the 2014 overall response rate.

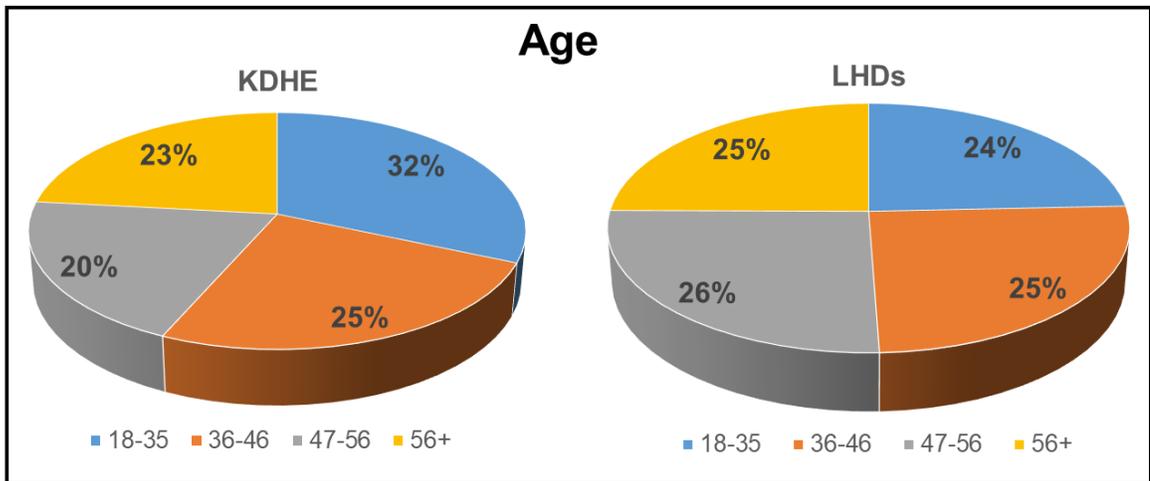
### 2017 Kansas Public Health Workforce Demographics



**Figure 3.1** KDHE and LHDs Workforce Gender Results

**Table 3.1** Combined Kansas Public Health Workforce Gender Results

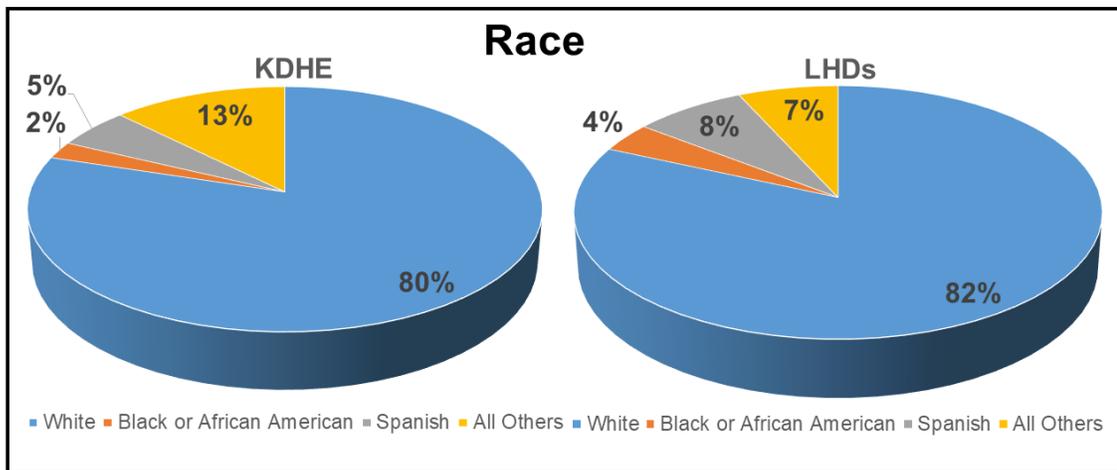
| Gender | Percent |
|--------|---------|
| Male   | 20%     |
| Female | 80%     |



**Figure 3.2** KDHE and LHDs Workforce Age Results

**Table 3.2** Combined Kansas Public Health Workforce Age Results

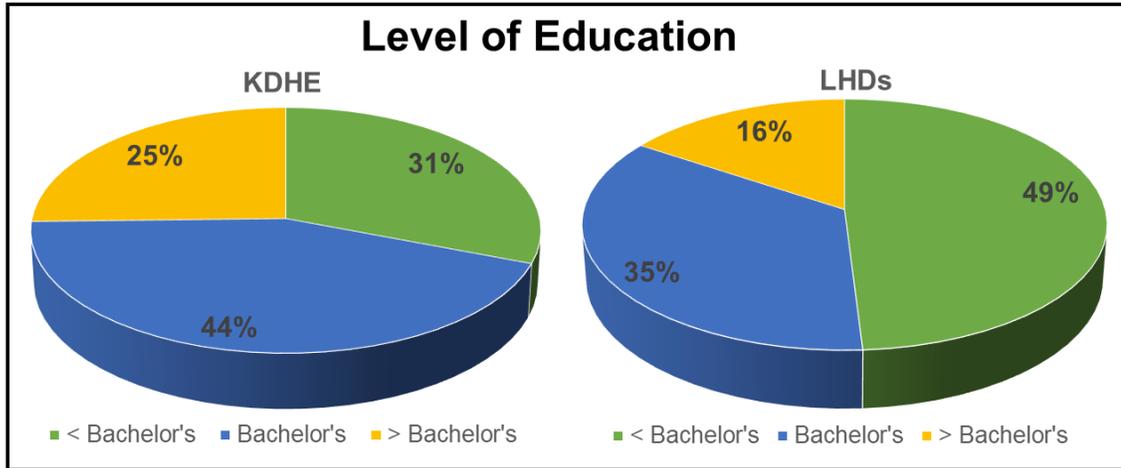
| Age   | Percent |
|-------|---------|
| 18-35 | 28%     |
| 36-46 | 25%     |
| 47-56 | 23%     |
| 56+   | 24%     |



**Figure 3.3** KDHE and LHDs Workforce Race Results

**Table 3.3** Combined Kansas Public Health Workforce Race Results

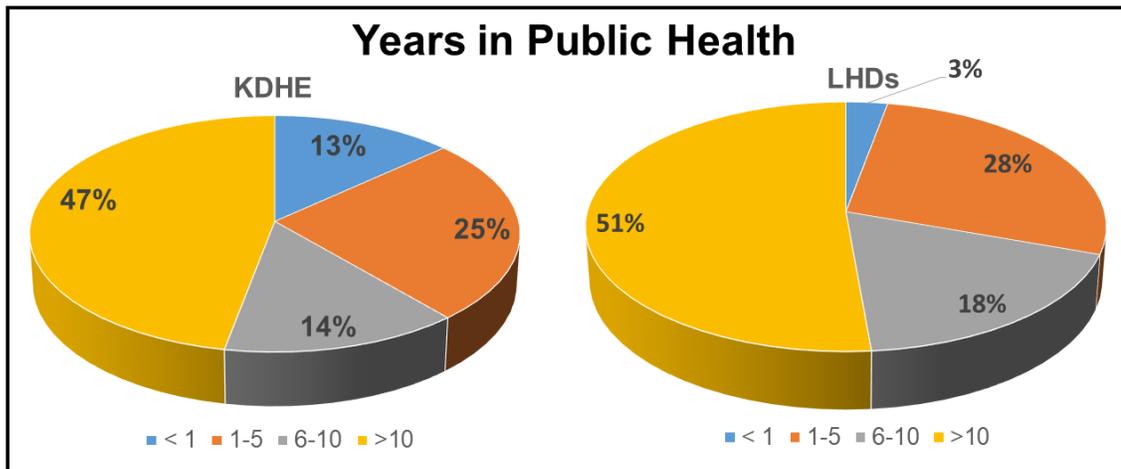
| Race                      | Percent |
|---------------------------|---------|
| White                     | 81%     |
| Black or African American | 3%      |
| Spanish                   | 7%      |
| All Others                | 9%      |



**Figure 3.4** KDHE and LHDs Workforce Level of Education Results

**Table 3.4** Combined Kansas Public Health Workforce Level of Education Results

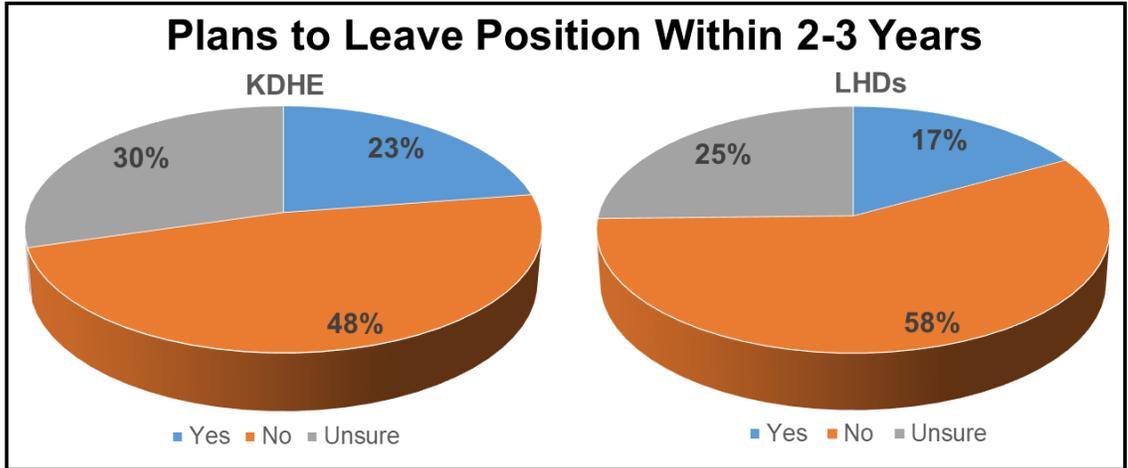
| Level of Education | Percent |
|--------------------|---------|
| < Bachelor's       | 41%     |
| Bachelor's         | 39%     |
| > Bachelor's       | 20%     |



**Figure 3.5** KDHE and LHDs Workforce Years in Public Health Results

**Table 3.5** Combined Kansas Public Health Workforce Years in Public Health Results

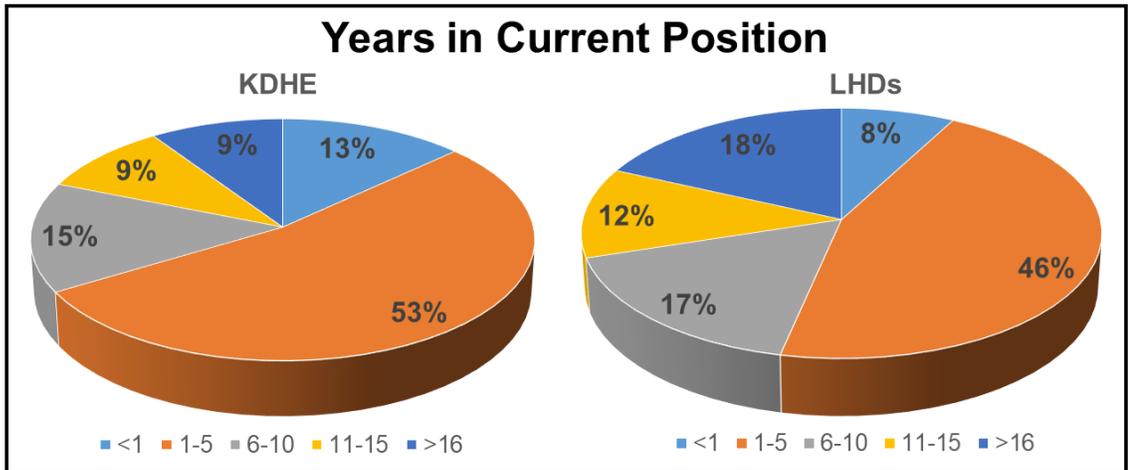
| Years in Public Health | Percent |
|------------------------|---------|
| < 1                    | 8%      |
| 1-5                    | 27%     |
| 6-10                   | 16%     |
| > 10                   | 49%     |



**Figure 3.6** KDHE and LHDs Workforce Plans to Leave Position Results

**Table 3.6** Combined Kansas Public Health Workforce Plans to Leave Position Results

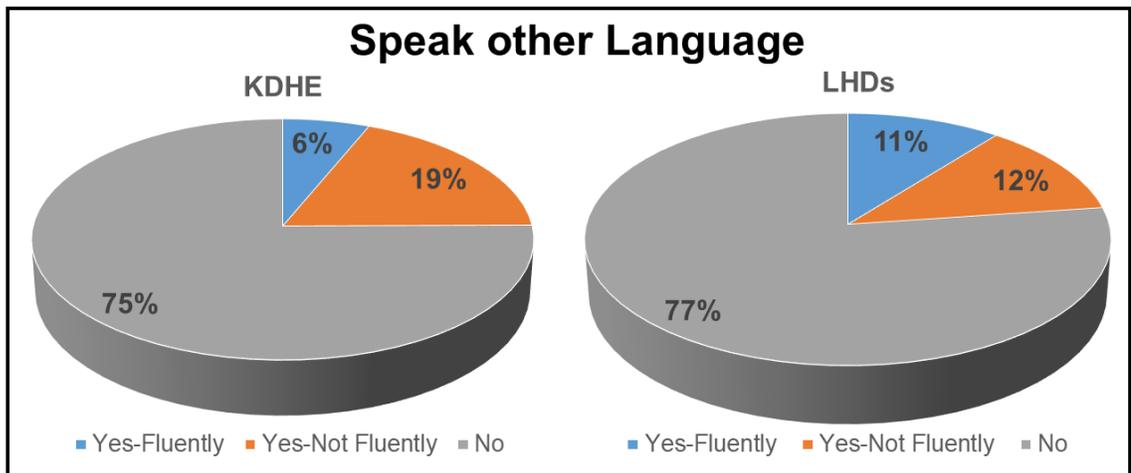
| Plans to Leave Position Within 2-3 Years | Percent |
|------------------------------------------|---------|
| Yes                                      | 20%     |
| No                                       | 53%     |
| Unsure                                   | 27%     |



**Figure 3.7** KDHE and LHDs Workforce Years in Current Position Results

**Table 3.7** Combined Kansas Public Health Workforce Years in Current Position Results

| Years in Current Position | Percent |
|---------------------------|---------|
| < 1                       | 10%     |
| 1-5                       | 49%     |
| 6-10                      | 16%     |
| 11-15                     | 11%     |
| > 16                      | 14%     |



**Figure 3.8** KDHE and LHDs Workforce Language Results

**Table 3.8** Combined Kansas Public Health Workforce Language Results

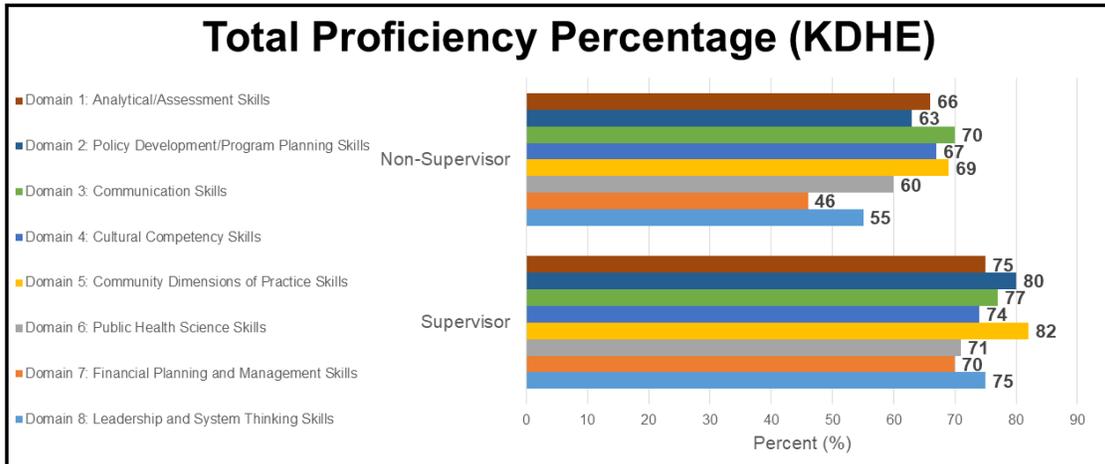
| Speak other Language | Percent |
|----------------------|---------|
| Yes-Fluently         | 9%      |
| Yes-Not Fluently     | 15%     |
| No                   | 76%     |

**2017 Kansas Public Health Workforce Core Competencies Total Proficiency Percentage by Domain**

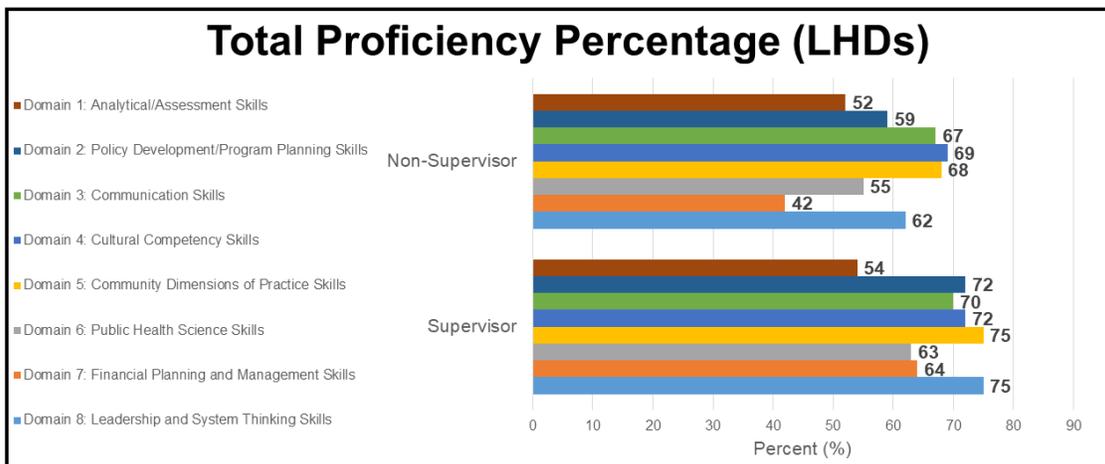
Responses for each core competency were combined for the total proficiency percentage analysis. The combination of responses was completed as follows:

- Responses of “not at all proficient” and “some limited proficiency” were combined to determine lowest proficiency for each domain.
- Responses of “proficient” and “very proficient” were combined to determine highest proficiency and total proficiency percentage for each domain.
- Responses of “Does not apply to my job” were analyzed separately.

For the 2017 Kansas Public Health Workforce Assessment survey, the responses of KDHE and LHDs participants were separated into a supervisor and a non-supervisor workforce category. The total proficiency percentage results are shown below for the two workforce categories of KDHE and LHDs participants.



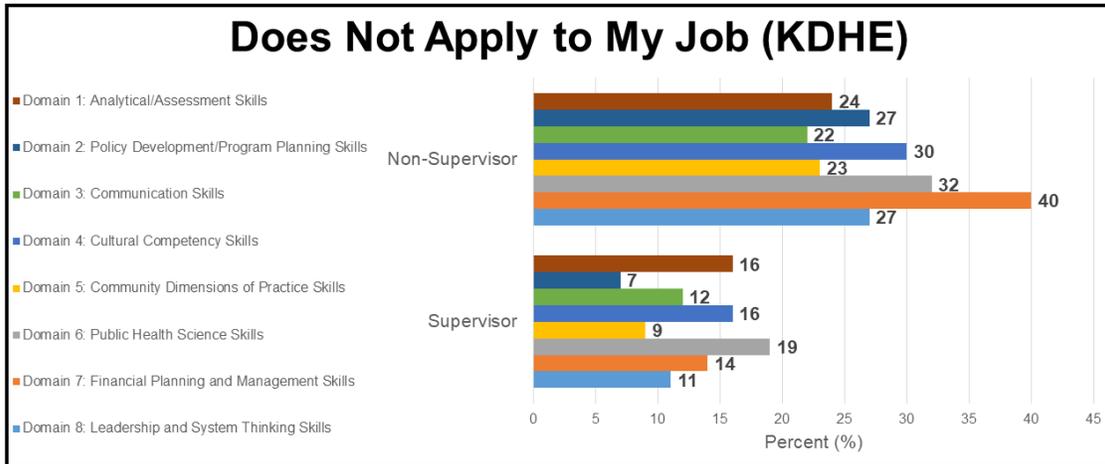
**Figure 3.9** KDHE Total Proficiency Percentage by Domain



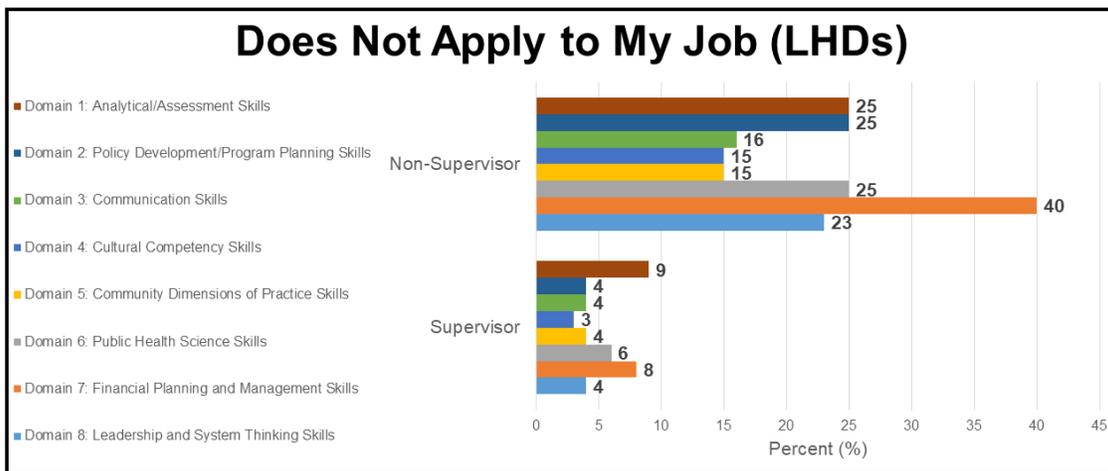
**Figure 3.10** LHDs Total Proficiency Percentage by Domain

**2017 Kansas Public Health Workforce Core Competencies “Does Not Apply to My Job” Response Percentage by Domain**

Responses of “Does not apply to my job” were not included in the total proficiency percentage analysis because they would misrepresent the results. Furthermore, analyzing these responses separately provided an additional way to assess the Kansas public health workforce. If an important public health domain receives a high “Does not apply to my job” response, the workforce can be educated that improvement in that domain’s core competencies can increase the overall competency of the workforce. The “Does not apply to my job” response results are shown below for the two workforce categories of KDHE and LHDs participants.



**Figure 3.11** KDHE Does Not Apply to My Job Response Percentage by Domain



**Figure 3.12** LHDs Does Not Apply to My Job Response Percentage by Domain

## Chapter 4 - Discussion

The discussion chapter will first interpret and describe the major findings of the 2017 Kansas Public Health Workforce Assessment. Next, a comparison of the 2014 and 2017 Kansas workforce assessments will be presented. Third, the major findings from the 2017 assessment in Kansas will be compared with the 2017 national PH WINS assessment that was introduced in the literature review chapter of this report. Finally, recommendations will be provided with the goal of improving the proficiency of the Kansas public health workforce.

### 2017 Major Findings – Demographics

The demographic results show that the Kansas public health workforce in the KDHE and LHDs predominately consists of white females (KDHE: 80% White, 68% Female) (LHDs: 82% White, 91% Female) (Figures 3.1 and 3.3). The age of the LHDs workforce is spread evenly among the four age categories, while the KDHE workforce is younger with 32% of participants falling in the 18-35 age category (Figure 3.2). A portion of this result could be influenced by the number of interns working at the KDHE. The KDHE workforce shows a higher level of education than the LHDs workforce with only 31% having less than a bachelor's degree (Figure 3.4). However, the LHDs workforce has more experience in public health than the KDHE workforce with 51% being in the public health field for more than ten years (Figure 3.5). The LHDs workforce also plans to remain in their current positions longer than the KDHE workforce with 58% reporting that they have no plans to leave within 2-3 years (Figure 3.6).

When comparing the combined Kansas public health workforce demographic data with United States Census Bureau demographic data for the state of Kansas, the results are similar for race, but different for gender and education. The combined Kansas public health workforce results show that the public health workforce is 81% white (Table 3.3), 80% female (Table 3.1), and 59% have at least a bachelor's degree (Table 3.4). The census data shows that the population of Kansas is 75.7% white, 50.2% female, and 32.9% have at least a bachelor's degree.<sup>13</sup>

### 2017 Major Findings – Supervisors Core Competency Self-Assessment

The domain with the highest total proficiency percentage for Kansas public health supervisors is Domain 5: Community Dimensions of Practice Skills for both KDHE (82%) and LHDs (75%) (Table 4.1). This is encouraging because Domain 5 contains competencies such as developing and maintaining relationships, engaging community members, and using

community input for policies, programs and services. The domain with the lowest total proficiency percentage for Kansas public health supervisors is Domain 7: Financial Planning and Management Skills for KDHE (70%) and Domain 1: Analytical/Assessment Skills for LHDs (54%) (Table 4.2). Domain 7 is not one of the three domains with the highest “Does not apply to my job” response percentage for KDHE supervisors (Table 4.3). Therefore, most KDHE supervisors believe that Domain 7 applies to their job, indicating that improvement within this domain would be helpful. Domain 1 had the highest “Does not apply to my job” response percentage for LHDs supervisors, which could be a reason for the reported low proficiency percentage (Table 4.3). However, many of the competencies within this domain (interpret quantitative and qualitative data, assess community health and/or environmental health status, develop community health assessment and/or environmental impact assessment, make evidence-based decisions, etc.) are important for any level of public health professionals.

**Table 4.1** Top Three Domains with the Highest Total Proficiency Percentage for Supervisors

| Rank | KDHE                                                       | LHDs                                                       |
|------|------------------------------------------------------------|------------------------------------------------------------|
| 1    | Domain 5: Community Dimensions of Practice Skills (82%)    | Domain 5: Community Dimensions of Practice Skills (75%)    |
| 2    | Domain 2: Policy Development/Program Planning Skills (80%) | Domain 8: Leadership and System Thinking Skills (75%)      |
| 3    | Domain 3: Communication Skills (77%)                       | Domain 2: Policy Development/Program Planning Skills (72%) |

**Table 4.2** Top Three Domains with the Lowest Total Proficiency Percentage for Supervisors

| Rank | KDHE                                                     | LHDs                                                     |
|------|----------------------------------------------------------|----------------------------------------------------------|
| 1    | Domain 7: Financial Planning and Management Skills (70%) | Domain 1: Analytical/Assessment Skills (54%)             |
| 2    | Domain 6: Public Health Science Skills (71%)             | Domain 6: Public Health Science Skills (63%)             |
| 3    | Domain 4: Cultural Competency Skills (74%)               | Domain 7: Financial Planning and Management Skills (64%) |

**Table 4.3** Top Three Domains with the Highest Does Not Apply to My Job Percentage for Supervisors

| Rank | KDHE                                         | LHDs                                                    |
|------|----------------------------------------------|---------------------------------------------------------|
| 1    | Domain 6: Public Health Science Skills (19%) | Domain 1: Analytical/Assessment Skills (9%)             |
| 2    | Domain 1: Analytical/Assessment Skills (16%) | Domain 7: Financial Planning and Management Skills (8%) |
| 3    | Domain 4: Cultural Competency Skills (16%)   | Domain 6: Public Health Science Skills (6%)             |

### 2017 Major Findings – Non-Supervisors Core Competency Self-Assessment

The domain with the highest total proficiency percentage for Kansas public health non-supervisors is Domain 3: Communication Skills for KDHE (70%) and Domain 4: Cultural Competency Skills for LHDs (69%) (Table 4.4). Domain 3 contains competencies such as assessing the literacy of populations served and determining approaches for disseminating data and information. Domain 4 contains competencies such as describing the diversity within a community and addressing population diversity in programs, policies and services. These

domains and competencies are important for the KDHE and LHDs, respectively. The domain with the lowest total proficiency percentage for Kansas public health non-supervisors is Domain 7: Financial Planning and Management Skills for both KDHE (46%) and LHDs (42%) (Table 4.5). Domain 7 also has the highest “Does not apply to my job” response percentage for both KDHE and LHDs non-supervisors (Table 4.6). This makes sense because non-supervisory positions are usually not tasked with financial planning and management. However, it would be beneficial for all levels of public health professionals to be proficient in financial planning and management, especially for employees that are hoping to be promoted to supervisory positions. Proficiency in this domain would also be beneficial for the staff members of smaller LHDs that have to fill multiple roles and complete tasks related to financial planning and management.

**Table 4.4** Top Three Domains with the Highest Total Proficiency Percentage for Non-Supervisors

| Rank | KDHE                                                    | LHDs                                                    |
|------|---------------------------------------------------------|---------------------------------------------------------|
| 1    | Domain 3: Communication Skills (70%)                    | Domain 4: Cultural Competency Skills (69%)              |
| 2    | Domain 5: Community Dimensions of Practice Skills (69%) | Domain 5: Community Dimensions of Practice Skills (68%) |
| 3    | Domain 4: Cultural Competency Skills (67%)              | Domain 3: Communication Skills (67%)                    |

**Table 4.5** Top Three Domains with the Lowest Total Proficiency Percentage for Non-Supervisors

| Rank | KDHE                                                     | LHDs                                                     |
|------|----------------------------------------------------------|----------------------------------------------------------|
| 1    | Domain 7: Financial Planning and Management Skills (46%) | Domain 7: Financial Planning and Management Skills (42%) |
| 2    | Domain 8: Leadership and System Thinking Skills (55%)    | Domain 1: Analytical/Assessment Skills (52%)             |
| 3    | Domain 6: Public Health Science Skills (60%)             | Domain 6: Public Health Science Skills (55%)             |

**Table 4.6** Top Three Domains with the Highest Does Not Apply to My Job Percentage for Non-Supervisors

| Rank | KDHE                                                     | LHDs                                                     |
|------|----------------------------------------------------------|----------------------------------------------------------|
| 1    | Domain 7: Financial Planning and Management Skills (40%) | Domain 7: Financial Planning and Management Skills (40%) |
| 2    | Domain 6: Public Health Science Skills (32%)             | Domain 6: Public Health Science Skills (25%)             |
| 3    | Domain 4: Cultural Competency Skills (30%)               | Domain 1: Analytical/Assessment Skills (25%)             |

### Comparison of 2017 Total Proficiency Percentage between Kansas Public Health Workforce Supervisors and Non-Supervisors

A z-test was conducted to determine if there is a statistical difference in total proficiency percentage between supervisors and non-supervisors for both the KDHE and LHDs. The z-test results are shown below for Domain 7: Financial Planning and Management Skills. Domain 7 was chosen for the z-test because it has a low total proficiency percentage for both supervisors and non-supervisors at the KDHE and LHDs.

### **KDHE Domain 7 Total Proficiency Percentage Z-Test**

Significance Level and Critical Value: 0.05 and 1.96

Supervisor Sample Size: 181

Supervisor Total Proficiency Percentage: 70%

Non-Supervisor Sample Size: 531

Non-Supervisor Total Proficiency Percentage: 46%

Proportion of Proficient Supervisors:  $0.70 * 181 = 126.7$

Proportion of Proficient Non-Supervisors:  $0.46 * 531 = 244.26$

Pooled Sample Proportion:  $\frac{126.7+244.26}{181+531} = 0.521$

Standard Error:  $\sqrt{(0.521 * (1 - 0.521)) * \left(\frac{1}{181} + \frac{1}{531}\right)} = 0.043$

Z-Test:  $Z = \frac{0.70-0.46}{0.043} = 5.58 > 1.96$

### **LHDs Domain 7 Total Proficiency Percentage Z-Test**

Significance Level and Critical Value: 0.05 and 1.96

Supervisor Sample Size: 255

Supervisor Total Proficiency Percentage: 64%

Non-Supervisor Sample Size: 611

Non-Supervisor Total Proficiency Percentage: 42%

Proportion of Proficient Supervisors:  $0.64 * 255 = 163.2$

Proportion of Proficient Non-Supervisors:  $0.42 * 611 = 256.62$

Pooled Sample Proportion:  $\frac{163.2+256.62}{255+611} = 0.485$

Standard Error:  $\sqrt{(0.485 * (1 - 0.485)) * \left(\frac{1}{255} + \frac{1}{611}\right)} = 0.0373$

Z-Test:  $Z = \frac{0.64-0.42}{0.0373} = 5.90 > 1.96$

Since the two test statistics are greater than the critical value of 1.96, there is a statistical difference in total proficiency percentage between supervisors and non-supervisors, for both the KDHE and LHDs at the 0.05 significance level.

### **Comparison of 2014 and 2017 Kansas Public Health Workforce Assessments**

It is difficult to directly compare the results of the 2014 assessment with the results of the 2017 assessment because the participant responses were separated and presented differently for each assessment. For the 2014 assessment, the responses were separated into the following four workforce tiers:

Tier A: Administrative and facilities support staff

Tier 1: Staff who carry out day-to-day tasks

Tier 2: Supervisory and/or program management level staff

Tier 3: Senior management and leaders of a public health organization

These tiers can be somewhat confusing and a mixture of supervisory and non-supervisory staff could be observed within a single tier if the participant was unsure which tier they belonged to. The 2017 assessment separated the responses into two workforce categories (supervisors and non-supervisors), as mentioned previously. Even with this difficulty, the demographic results and some of the major findings of each assessment can still be compared.

In 2014, 57% of the KDHE workforce was 46 years of age or older and 54% of the LHDs workforce was 46 years of age or older. In 2017, 57% of the KDHE workforce was 46 years of age or younger and 49% of the LHDs workforce was 46 years of age or younger (Figure 3.2). Therefore, it appears that a significant percentage of the Kansas public health workforce has retired, resulting in a loss of professional work experience. Hence, training, educating, and retaining the younger workforce will be very important for improving the proficiency of the public health workforce in Kansas. For 2014, the domain with the lowest total proficiency percentage for both the KDHE and LHDs was Domain 6: Public Health Science Skills. The 2017 assessment shows that Domain 6 remains one of the lowest for total proficiency percentage (second lowest for the KDHE and LHDs supervisors and third lowest for the KDHE and LHDs non-supervisors), but other domains have claimed the lowest total proficiency percentages. The 2014 and 2017 assessment results show similarities in that a significant number of participants reported a low proficiency or reported that the competencies within Domain 7: Financial Planning and Management Skills do not apply to their job.

### **Comparison of 2017 Kansas and 2017 National Public Health Workforce Assessments**

The demographic results of the 2017 national PH WINS assessment are similar to the results of the 2017 Kansas assessment. The national assessment showed that the national public health workforce is 79% female and 21% male.<sup>6</sup> The combined Kansas public health workforce gender results were 80% female and 20% male (Table 3.1). The national public health workforce is well educated with 62% having at least a bachelor's degree.<sup>6</sup> The Kansas public health workforce is also well educated with 59% having at least a bachelor's degree (Table 3.4). One demographic result where the national assessment differs from the Kansas assessment is plans to leave current position. For the national assessment, almost half (47%) of the workforce reported plans to leave their position in the next five years.<sup>6</sup> The result for the

Kansas assessment was 20% (Table 3.6). However, the Kansas result was only considering the next 2-3 years. Comparing the race results, the Kansas workforce is not as diverse as the national workforce. The Kansas workforce is 81% white, 3% black or African American, and 7% Spanish (Table 3.3). The national workforce is 59% white, 15% black or African American, and 13% Hispanic or Latino.<sup>6</sup>

The national PH WINS assessed self-reported proficiency of skills similar to the core competencies of the Kansas assessment. The top training need identified in the national assessment was budgeting and financial management.<sup>6</sup> This result was also observed in the Kansas assessment with Domain 7: Financial Planning and Management Skills.

### **Conclusion and Recommendations**

One of the recommendations from the 2014 assessment was to attract a younger and more diverse workforce by using social media to increase awareness and create interest about the field of public health among high school and college students. From the 2017 assessment results, it appears that this recruitment strategy worked since the workforce is younger. An important recommendation now is to explore and develop strategies to retain the younger workforce.

Another recommendation from the 2014 assessment was to have the Kansas public health workforce complete an online training focusing on the ten essential public health services in an effort to increase proficiency for Domain 6: Public Health Science Skills. From the 2017 assessment results, it appears that this recommendation was not very successful since Domain 6 remains one of the lowest for total proficiency percentage.

A major recommendation to improve the proficiency of the Kansas public health workforce is to provide education and training to address the domains and competencies with the lowest reported proficiency and highest reported non-applicability. Training development should be completed separately for supervisors and non-supervisors, if the domains and competencies to be addressed are different. However, all staff members should be encouraged to attend any pertinent training. For the KDHE and LHDs supervisors, strategies should be developed to provide education and training for financial planning and management, public health science, and analytical/assessment skills. For the KDHE non-supervisors, education and training should be provided for financial planning and management, leadership and system thinking, and public health science skills. For LHDs non-supervisors, education and training should be provided for financial planning and management, public health science, and analytical/assessment skills. The recommended education and training should be monitored to

ensure that it is adequately implemented. To assist with strategy implementation, Kansas is currently pursuing the establishment of a formal public health workforce development plan. This plan will be modeled after the plan prepared by the Montana Public Health Workforce Development Group.<sup>14</sup>

Additional recommendations for future Kansas public health workforce assessment surveys include keeping the two workforce categories of supervisors and non-supervisors for response separation and adding spatial components so even more specific recommendations can be developed. Keeping the same two workforce categories for future assessment surveys would reduce confusion and allow for easier comparison of results with previous assessments.

For the 2014 Kansas assessment, there was a spatial analysis of LHDs total proficiency percentages and “Does not apply to my job” response percentages using the regional LHDs map of Kansas. The data necessary for a similar spatial analysis of the 2017 assessment was not provided. It is possible that the education and training needs are different for each LHDs region. In addition, since the KDHE has several satellite locations, it is possible that the education and training needs are different for the Health and Environmental laboratories and each District Office. Using spatial analysis could determine if these differences exist. For this, a question would need to be added to the survey to allow the KDHE participants to report where they are located, similar to how the LHDs participants report where they are located.

# Chapter 5 - Competencies

## Student Attainment of MPH Foundational Competencies

**Table 5.1** Summary of MPH Foundational Competencies

| Number and Competency |                                                                                                                                     | Description                                                                                                                                |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 3                     | Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate | Was used to organize and analyze the 2017 data                                                                                             |
| 4                     | Interpret results of data analysis for public health research, policy or practice                                                   | Was used to interpret the 2017 data analysis results and to interpret comparisons of results                                               |
| 7                     | Assess population needs, assets and capacities that affect communities' health                                                      | Was used to assess and determine the Kansas public health workforce needs                                                                  |
| 18                    | Select communication strategies for different audiences and sectors                                                                 | Was used in determining how to best communicate the results through presentation in a report and a summary                                 |
| 19                    | Communicate audience-appropriate public health content, both in writing and through oral presentation                               | The audience was considered while writing the report and summary. The same consideration took place while creating the presentation slides |

**Competency No. 3: Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate.** This competency was utilized during the organization and analysis of the 2017 workforce assessment survey data. The analyses were completed using Microsoft Excel. The graphs and tables were also created using Excel.

**Competency No. 4: Interpret results of data analysis for public health research, policy or practice.** This competency was used while reviewing the results of the data analyses. Since I was inexperienced with interpreting workforce assessment results at the start of this project, the literature review was very helpful.

**Competency No. 7: Assess population needs, assets and capacities that affect communities' health.** From the interpretation of the results, the Kansas public health workforce education and training needs were assessed and determined. For reporting the education and training needs, it was decided to use a combination of three domains with the lowest total proficiency percentage and highest "Does not apply to my job" response percentage.

**Competency No. 18: Select communication strategies for different audiences and sectors.** Several different audiences might be interested in viewing the results of this project. Therefore, a communication strategy of creating a short, one page summary of the report was

selected. The summary presents the major findings in a visually pleasing format and encourages interested parties to review the assessment report for more information and results.

**Competency No. 19: Communicate audience-appropriate public health content, both in writing and through oral presentation.** The report was written in a way that different audiences and sectors should be able to understand the purpose and results of the project. The slides for the oral presentation were developed in the same way.

## Student Attainment of MPH Emphasis Area Competencies

**Table 5.2** Summary of MPH Emphasis Area Competencies

| MPH Emphasis Area: Infectious Diseases/Zoonoses |                                       |                                                                                                                    |
|-------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Number and Competency                           |                                       | Description                                                                                                        |
| 1                                               | Pathogens/pathogenic mechanisms       | DMP 710 – One Health, DMP 705 – Vet Immunology, DMP 814 – Vet Bacteriology                                         |
| 2                                               | Host response to pathogens/immunology | DMP 705 – Vet Immunology                                                                                           |
| 3                                               | Environmental/ecological influences   | DMP 710 – One Health, MPH 802 – Environmental Health                                                               |
| 4                                               | Disease surveillance                  | MPH 754 – Intro to Epidemiology, DMP 844 – Global Health, DMP 888 – Globalization, Cooperation, and the Food Trade |
| 5                                               | Disease vectors                       | DMP 710 – One Health, DMP 705 – Vet Immunology, DMP 814 – Vet Bacteriology                                         |

Since my project did not involve infectious diseases, the MPH Emphasis Area Competencies were attained by completing the courses listed in the description column of Table 5.2. In several courses, multiple MPH Emphasis Area Competencies were discussed and attained.

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## **Appendix 1**

Kansas Public Health Workforce Assessment Report 2014-2015 (a reference attached as a PDF)

## **Appendix 2**

2017 Kansas Public Health Workforce Assessment Survey (a reference attached as a PDF)

## **Appendix 3**

2017 Kansas Public Health Workforce Assessment Survey Summary (one of my products attached as a PDF)

## **Appendix 4**

Charts and Tables Comparison Document (one of my products attached as a PDF and a Word document)