



# WAGE DIFFERENCES AMONG INDUSTRIES FOR SELECT NURSING AND ANCILLARY HEALTH OCCUPATIONS IN KANSAS

*Technical Report*

*Prepared for LeadingAge Kansas*

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KHI/17-20

**SEPTEMBER 2017**



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Reference publication number KHI/17-20.

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## **Author**

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## **Acknowledgements**

Thank you to Kari Bruffett, Cheng-Chung Huang, M.P.H., Wen-Chieh Lin, Ph.D., and Charlie Hunt, M.P.H., for their contributions to this project.

**Updated November 2017**



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## Executive Summary

Health professional shortages have ebbed and flowed through time. The current health professional shortage is primarily due to an aging health care workforce exiting the job market and a shortage of younger workers to fill those roles, as well as the aging of the baby boomer generation. Given the finite number of workers and the number of positions that need to be filled, wages and related benefits may influence which health care-related industries attract workers. Much of the literature focuses on registered nurses, especially in hospitals, but this report examines occupations across industries, including hospitals, ambulatory care, nursing and residential care, and government positions.

The focus of this work is examining wages for registered nurses and other ancillary health positions across comparison industries (e.g., Nursing Care Facilities). Capitalized names for industries (e.g., Nursing Care Facilities) represent industry categories as identified by the Bureau of Labor Statistics North American Industry Classification System (NAICS).

This analysis examines differences in wages across a range of health care industries and calculates percent difference using wages in the Nursing Care Facilities industry as the reference group.

There are several key findings from this research.:

- Average hourly wages for registered nurses were lower in the Nursing and Residential Care Facilities industry (e.g., Nursing Care Facilities and Community Care Facilities for the Elderly) than in all other comparison industries.
- Registered nurses in the Hospitals industry earn an average hourly wage of \$28.19, which is \$2.96 (or 11.7 percent) higher than the average hourly wage of \$25.23 for registered nurses in the Nursing Care Facilities industry.
- Average hourly wages for nursing assistants were lower in the Nursing and Residential Care Facilities Industry (\$11.29) than in all other comparison industries (\$11.66 to \$12.67), except the State Hospitals industry (\$10.97) and the Psychiatric and Substance Abuse Hospitals industry (\$10.73).

- Average hourly wages for dietitians and nutritionists were higher in the Nursing and Residential Care Facilities industry (\$29.11) than in all other comparison industries (\$24.86 to \$28.33), except for the Home Health Care Services industry (\$31.45).
- Average hourly wages for licensed practical and vocational nurses were higher in the Nursing Care Facilities industry (\$19.49) than in all other comparison industries (\$17.49 to \$19.40), except for the Total Government industry (\$20.55).
- Average hourly wages for select occupational and physical therapy-related jobs in the Nursing Care Facilities industry were higher than in some other comparison industries and lower than in others.

While the wage data proved useful for this analysis, there are some limitations. Only single values are reported across industry and occupation categories, so significance tests could not be conducted. Further, some occupation categories do not have data available for all industries in this analysis. A percent difference is calculated from the reference group, the Nursing Care Facilities industry. However, any differences in wages should be considered critically with additional context from content experts to evaluate these values.

# Introduction

The purpose of this study is to examine differences in wages in nursing and ancillary health occupations across Kansas for the Nursing Care Facilities industry and select comparison industries to evaluate if there are differences in wages by industries across the occupations. Specifically of interest to this study is how workers employed in the Nursing Care Facilities industry differ from other industries in the state, using 2016 data collected by the Kansas Department of Labor (KDOL).

Nursing shortages in the United States have long been a subject of interest and concern. Historically, these shortages have been cyclical, ebbing and flowing across the decades. These shortages were often linked to lower wages and a lack of benefits.<sup>1</sup> However, more recent patterns in nursing shortages have been characterized differently: A primary contributor of these patterns is a growing aging workforce without adequate replacement due to declining enrollment in nursing programs.<sup>2</sup>

These more recent workforce shortage patterns are projected to leave a workforce of the same size in 2020 as it was in 1998, almost 20 percent below workforce requirements.<sup>3</sup> This combination of an aging workforce, a shortage of new nurses entering the field and more demands on the health care system with an aging population,<sup>4,5</sup> will only make the nursing shortage worse. It is important to note that while most literature indicates a shortage of nursing positions at the present time, some research does contradict this prediction. A 2014 analysis by the Bureau of Labor Statistics suggests that from 2014 to 2030, both Registered Nurses and Licensed Practical Nurses will be in surplus in the state of Kansas.<sup>6</sup> This issue is not examined in this report, but the reader is encouraged to keep in mind that some literature counters the predictions of shortages in the future.

In the face of the current predicted shortages, nursing-related jobs will continue to grow. Registered nurses, home health aides and nursing assistants are identified by the Bureau of Labor Statistics as occupations with the most health-related job growth which, if projected shortages are accurate, could leave a growing need for registered nurses, but no incoming workforce to replace them.<sup>7</sup>

Kansas has not been immune to this trend. In a report on registered nurse shortages from the Kansas Department of Health and Environment, shortages for registered nurses were predicted

in both 2010 and 2020 in Kansas. By 2010, Kansas was projected to have a shortage of 351 registered nurses per 100,000 population and it was expected that by 2010, almost 4,500 replacement registered nurse positions would be needed due to retirement. By 2020, this shortage was expected to increase to a shortage of 1,950 registered nurses per 100,000 population. Like the United States, the demographic shift in Kansas is leading to an aging workforce, an aging population needing care, and a smaller nurse workforce at younger ages to fill the gaps.<sup>8</sup>

Most research on wages for nursing emphasizes registered nurses in hospital settings, likely due to the large numbers employed in that setting, so the literature here largely reflects this research. Some research suggests that registered nurses in hospitals are more stable in their positions, which may influence findings from retention studies.<sup>9</sup>

Without a stock of new, younger nurses to replace the retiring workforce, incentives within nursing and other ancillary health occupations may not increase the nursing workforce. Due to this understaffing, variation in salaries across industries may influence retention, with workers potentially going to areas of higher wages. An analysis of wages from a 2005 report from the Bureau of Labor Statistics on for-profit and nonprofit hospitals and universities suggests that wages can differ for nursing positions across for-profit and nonprofit hospitals.<sup>10</sup> Further evidence suggests that wage differences influence retention for registered nurses in hospitals than other care facilities.<sup>11</sup> While much of the research focuses on registered nurses, other ancillary health occupations may also experience differences in wages that impact retention.

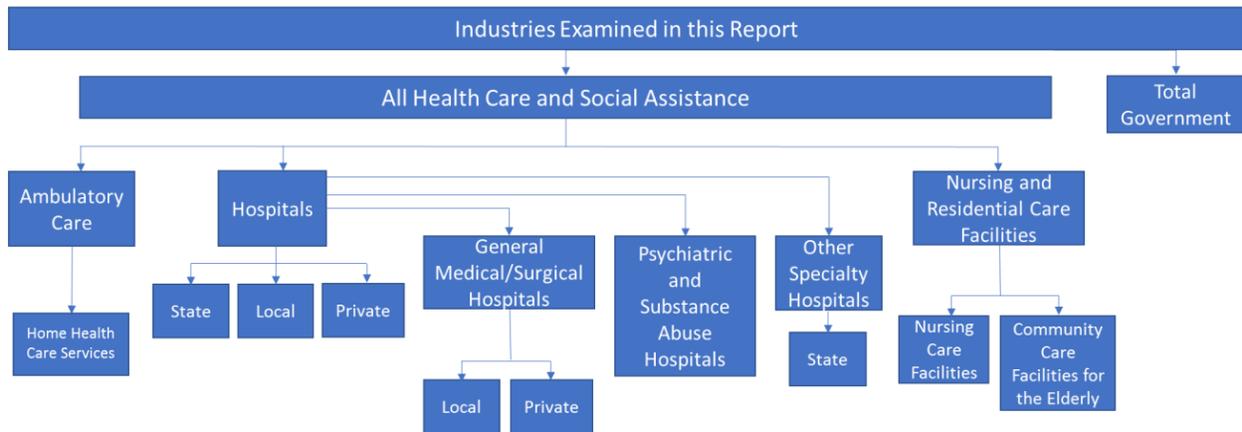
This report examines the differences in wages for nursing and ancillary health-related occupations across select health care industries to evaluate differences in wages across occupations.

## **Data**

Data for this analysis were obtained from the Kansas Department of Labor for the year 2016. The data is collected through a semi-annual, sample-based survey, conducted in cooperation with the Bureau of Labor Statistics (BLS). The survey asks employers to report occupational employment and wages, and is distributed across states twice a year to panels of approximately 200,000 establishments. The survey has a 73.5 percent response rate (69.6 percent based on weighted sampled employment).<sup>12</sup>

Working with LeadingAge Kansas, relevant occupations and industries were identified based on the available data, leaving 12 occupations and 16 industries for the final analysis (*Appendix A; Appendix B* provides the wage data by the occupations and industries identified in *Appendix A*). Two industry groups are examined in this report: The All Health Care and Social Assistance industry is the highest-level classification for health care industries, which includes select subgroups of interest. Total Government includes federal, state and local government excluding the U.S. Postal Service, and state and local-owned public schools and hospitals (*Figure 1*).

**Figure 1. Hierarchy of Health Industry Classifications Compared in this Analysis**



Note: Industries were selected for analysis based on data availability and input from LeadingAge Kansas. Based on Bureau of Labor Statistics North American Industry Classification System (NAICS) classification hierarchy.

Source: *Kansas Department of Labor Wage Data, 2016*.

In BLS classification, Nursing Care Facilities, including Skilled Nursing Facilities, are grouped with Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly, Residential Developmental Disability, Mental Health and Substance Abuse Facilities, and Other Residential Care Facilities into the classification of “Nursing and Residential Care Facilities.” In this report, individual results are presented for the classification of the Nursing and Residential Care Facilities industry, as well as for the individual industries of the Nursing Care Facilities industry and the Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly industry (abbreviated in the KDOL data and this report as “Community Care Facilities for the Elderly”).

## Methods and Analysis

The data were separated into two groups for analysis. The first group (Group 1) included registered nurses, dietitians and nutritionists, licensed practical and vocational nurses, nursing assistants, nurse practitioners, and home health aides (*Appendix C*). The second group (Group 2) consisted of physical and occupational therapy-related occupations (*Appendix D*).

In the analysis for both Group 1 and Group 2, occupations were examined across comparison industries using the Nursing Care Facilities industry as the reference group.<sup>1</sup> Group 1 is the primary group of interest but Group 2 examines wage differences for select ancillary health-related positions (as determined by LeadingAge and KHI) outside of nursing. Each occupation in the Nursing Care Facilities industry serves as the reference group for comparisons detailed below. The Nursing Care Facilities industry includes: Convalescent homes or convalescent hospitals (except psychiatric), group homes for the disabled with nursing care, homes for the aged with nursing care, homes for the elderly with nursing care, hospices, inpatient care, nursing homes, rest homes with nursing care, retirement homes with nursing care and skilled nursing facilities.<sup>13</sup>

The data were analyzed in two ways. First, a simple calculation of differences was conducted to determine which industries had higher average hourly wages by occupation between the reference group and other groups where the wage in the reference group (a) was subtracted from the comparison group (b):  $b - a$ . Using this approach, a positive number indicated that the comparison group had a higher wage than the reference group, while a negative number indicated the comparison group had a lower average hourly wage than the reference group.

Second, to provide some insight into the scale of the difference in wages across comparison industries for each occupation, the percent difference in wage was also calculated. Percent difference calculates how much wage differs between the comparison group (b) and the reference group (a). The percent difference in wage was calculated by first finding the difference as calculated by the reference group (a) subtracted from the comparison group (b). This value

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<sup>1</sup> In Group 1, two occupations (Nurse Practitioners and Home Health Aides) do not have data available for the Nursing Care Facilities industry. Nurse Practitioners were excluded from the report due to insufficient data and Home Health Aides use the Nursing and Residential Care Facilities industry as the occupational reference group.

was then divided by the reference group value (a). The equation for this is as follows:  $\frac{(b-a)}{a} * 100$ .

This allows for a common denominator to compare the difference in wages from the reference group and other comparison industries to one another. A positive number indicated that the comparison group had a higher wage than the reference group, while a negative number indicated the comparison group had a lower average hourly wage than the reference group.

All Health Care and Social Assistance and relevant subgroups are compared to Nursing Care Facilities first to highlight the difference between average hourly wage for those industries and Nursing Care Facilities. A similar comparison is made for Total Government and Nursing Care Facilities. When discussing these comparisons, the data is presented as the average hourly wage for the All Health Care and Social Assistance group (or other industry group) versus the average hourly wage for Nursing Care Facilities, and the percent difference in average hourly wages between groups (e.g., All Health Care and Social Assistance vs. Nursing Care Facilities; x.x percent higher/lower). The calculations of differences and percent difference in wages are presented in Appendix C and Appendix D for Group 1 and Group 2, respectively.

# Results

The results from the analysis are presented based on the groups described in the Methods Section, by occupation.

## Group 1

### Registered Nurses

Figure 2. Wage Differences for Registered Nurses Across Health Care Industries in Kansas

	Ambulatory Health Care Services		Hospitals	Hospitals							Nursing and Residential Care Facilities	Nursing and Residential Care Facilities		Total Government
	Ambulatory Health Care Services	Home Health Care Services		State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	Nursing Care Facilities		Community Care Facilities for the Elderly		
<b>Average Hourly Wage</b>	\$27.50	\$26.17	\$27.10	\$28.19	\$27.84	\$26.07	\$28.55	\$28.24	\$26.28	\$29.33	\$25.05	<b>\$25.23</b>	\$24.22	\$30.92
<b>Wage Difference</b>	\$2.27	\$0.94	\$1.87	\$2.96	\$2.61	\$0.84	\$3.32	\$3.01	\$1.05	\$4.10	-\$0.18	<b>Ref</b>	-\$1.01	\$5.69
<b>Percent difference</b>	9.0%	3.7%	7.4%	11.7%	10.3%	3.3%	13.2%	11.9%	4.2%	16.3%	-0.7%	<b>Ref</b>	-4.0%	22.6%

Note: "N/A" indicates that data were not available for analysis. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

Registered nurses in the All Health Care and Social Assistance industry had a higher wage than registered nurses in the Nursing Care Facilities industry (\$27.50 vs \$25.23; 9.0 percent higher) as shown in *Figure 2*. Registered nurses in the Community Care Facilities for the Elderly industry (which includes assisted living facilities) had a lower average hourly wage than registered nurses in the Nursing Care Facilities industry. The average hourly wage was higher in all other comparison industries (Hospitals, Ambulatory Health Care Services and Total Government) than in the Nursing Care Facilities industry.

## Nursing Assistants

Figure 3. Wage Differences for Nursing Assistants Across Select Health Care Industries in Kansas

	Ambulatory Health Care Services		Hospitals	Hospitals						Nursing and Residential Care Facilities	Nursing and Residential Care Facilities	Community Care Facilities for the Elderly	Total Government	
	Ambulatory Health Care Services	Home Health Care Services		State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals					
<b>Average Hourly Wage</b>	\$11.49	\$12.67	\$11.67	\$12.00	\$10.97	\$11.66	\$12.20	\$12.03	\$10.73	\$12.13	\$11.29	<b>\$11.24</b>	\$11.35	\$12.10
<b>Wage Difference</b>	\$0.25	\$1.43	\$0.43	\$0.76	-\$0.27	\$0.42	\$0.96	\$0.79	-\$0.51	\$0.89	\$0.05	<b>Ref</b>	\$0.11	\$0.86
<b>Percent difference</b>	2.2%	12.7%	3.8%	6.8%	-2.4%	3.7%	8.5%	7.0%	-4.5%	7.9%	0.4%	<b>Ref</b>	1.0%	7.7%

Note: "N/A" indicates that data were not available for analysis. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

For nursing assistants, the average hourly wage in the All Health Care and Social Assistance industry was higher than in the Nursing Care Facilities industry (\$11.49 vs. \$11.24; 2.2 percent higher). The average hourly wage for nursing assistants was higher in most other comparison industries than in the Nursing Care Facilities industry, except for the State Hospitals industry and the Psychiatric and Substance Abuse Hospitals industry (Figure 3).

## Licensed Practical and Vocational Nurses

Figure 4. Wage Differences for Licensed Practical and Vocational Nurses Across Select Health Care Industries in Kansas

All Health Care and Social Assistance	Ambulatory Health Care Services		Hospitals	Hospitals						Nursing and Residential Care Facilities	Nursing and Residential Care Facilities		Total Government	
	Ambulatory Health Care Services	Home Health Care Services		State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals		Nursing Care Facilities	Community Care Facilities for the Elderly		
									State - Other Specialty Hospitals					
Average Hourly Wage	\$19.10	\$18.88	\$19.40	\$18.64	\$18.43	\$17.96	\$18.95	\$18.59	\$18.71	\$17.49	\$19.38	<b>\$19.49</b>	\$19.17	\$20.55
Wage Difference	-\$0.39	-\$0.61	-\$0.09	-\$0.85	-\$1.06	-\$1.53	-\$0.54	-\$0.90	-\$0.78	-\$2.00	-\$0.11	Ref	-\$0.32	\$1.06
Percent difference	-2.0%	-3.1%	-0.5%	-4.4%	-5.4%	-7.9%	-2.8%	-4.6%	-4.0%	-10.3%	-0.6%	Ref	-1.6%	5.4%

Note: "N/A" indicates that data were not available for analysis. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

Licensed practical and vocational nurses in the All Health Care and Social Assistance industry had a lower average hourly wage than in the Nursing Care Facilities industry (\$19.10 vs. \$19.49; 2.0 percent lower). Licensed practical and vocational nurses in most other comparison industries had a lower average hourly wage than in Nursing Care Facilities, except for licensed practical and vocational nurses in Total Government (Figure 4).

## Dieticians and Nutritionists

Figure 5. Wage Differences for Dieticians and Nutritionists Across Health Care Industries in Kansas

	Ambulatory Health Care Services		Hospitals	Hospitals							Nursing and Residential Care Facilities	Nursing and Residential Care Facilities	Community Care Facilities for the Elderly	Total Government
	Ambulatory Health Care Services	Home Health Care Services		State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals					
<b>Average Hourly Wage</b>	\$26.39	\$28.83	\$31.45	\$25.02	*	\$26.31	\$24.86	\$24.99	*	*	\$29.24	<b>\$29.11</b>	\$30.46	\$25.53
<b>Wage Difference</b>	-\$2.72	-\$0.28	\$2.34	-\$4.09	N/A	-\$2.80	-\$4.25	-\$4.12	N/A	N/A	\$0.13	<b>Ref</b>	\$1.35	-\$3.58
<b>Percent difference</b>	-9.3%	-1.0%	8.0%	-14.1%	N/A	-9.6%	-14.6%	-14.2%	N/A	N/A	0.4%	<b>Ref</b>	4.6%	-12.3%

Note: "N/A" indicates that data were not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

For dieticians and nutritionists, average hourly wages in the All Health Care and Social Assistance industry were lower than in the Nursing Care Facilities industry (\$26.39 vs. \$29.11; 9.3 percent lower). Dieticians and nutritionists in most other comparison industries had a lower average hourly wage than in the Nursing Care Facilities industry, except for dieticians and nutritionists in the Home Health Care Services industry and Community Care Facilities for the Elderly industry (which includes assisted living facilities) (Figure 5).

## Home Health Aides

For home health aides (*Figure 6*), data was not available for the Nursing Care Facilities industry. Instead, the industry reference group is the Nursing and Residential Care Facilities industry, which is the categorization above the Nursing Care Facilities industry and the Community Care Facilities for the Elderly industry (which includes assisted living facilities).

**Figure 6. Wage Differences for Home Health Aides Across Select Health Care Industries in Kansas**

	All Health Care and Social Assistance	Ambulatory Health Care Services		Hospitals							Nursing and Residential Care Facilities		Total Government	
		Ambulatory Health Care Services	Home Health Care Services	Hospitals	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	Nursing and Residential Care Facilities	Community Care Facilities for the Elderly		
Average Hourly Wage	\$11.10	\$11.34	\$11.29	\$14.29	*	\$13.87	\$14.70	\$14.29	*	*	<b>\$10.88</b>	*	\$11.73	\$11.94
Wage Difference	\$0.22	\$0.46	\$0.41	\$3.41	N/A	\$2.99	\$3.82	\$3.41	N/A	N/A	Ref	N/A	\$0.85	\$1.06
Percent difference	2.0%	4.2%	3.8%	31.3%	N/A	27.5%	35.1%	31.3%	N/A	N/A	Ref	N/A	7.8%	9.7%

Note: "N/A" indicates that data were not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing and Residential Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

Home health aides in the All Health Care and Social Assistance industry had higher average hourly wages than in the Nursing and Residential Care Facilities industry (\$11.10 vs. \$10.88; 2.0 percent higher). Home health aides in all other comparison industries, including in the Community Care Facilities for the Elderly industry (which includes assisted living facilities), had a higher average hourly wage than home health aides in the Nursing and Residential Care Facilities industry (*Figure 6*).

## Group 2

### Occupational Therapists

Figure 7. Wage and Wage Differences for Occupational Therapists Across Select Industries

	All Health Care and Social Assistance	Ambulatory Health Care Services		Hospitals							Nursing and Residential Care Facilities	Nursing and Residential Care Facilities		Total Government
		Ambulatory Health Care Services	Home Health Care Services	Hospitals	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals		Nursing and Residential Care Facilities	Nursing Care Facilities	
Average Hourly Wage	\$40.06	\$42.32	\$44.07	\$37.22	*	\$40.07	\$36.83	\$37.41	*	*	\$40.63	<b>\$40.66</b>	*	\$37.33
Wage Difference	-\$0.60	\$1.66	\$3.41	-\$3.44	N/A	-\$0.59	-\$3.83	-\$3.25	N/A	N/A	-\$0.03	Ref	N/A	-\$3.33
Percent Difference	-1.5%	4.1%	8.4%	-8.5%	N/A	-1.5%	-9.4%	-8.0%	N/A	N/A	-0.1%	Ref	N/A	-8.2%

Note: "N/A" indicates that data was not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group; all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

Occupational therapists (Figure 7) in the All Health Care and Social Assistance industry had lower average hourly wages than in the Nursing Care Facilities industry (\$40.06 vs. \$40.66; 1.5 percent lower). Occupational therapists had a lower average hourly wage in most other comparison industries compared to occupational therapists in the Nursing Care Facilities industry, except for the Ambulatory Health Care Services industry and the Home Health Care Services industry.

## Physical Therapists

Figure 8. Wage and Wage Differences for Physical Therapists Across Select Industries

	Ambulatory Health Care Services			Hospitals							Nursing and Residential Care Facilities			Total Government
	Ambulatory Health Care Services	Home Health Care Services	Hospitals	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	State - Other Specialty Hospitals	Nursing and Residential Care Facilities	Nursing Care Facilities	Community Care Facilities for the Elderly	
<b>Average Hourly Wage</b>	\$39.14	\$39.69	\$41.45	\$38.21	*	\$39.56	\$37.96	\$38.22	*	*	\$41.97	<b>\$43.79</b>	\$35.68	\$37.31
<b>Wage Difference</b>	-\$4.65	-\$4.10	-\$2.34	-\$5.58	N/A	-\$4.23	-\$5.83	-\$5.57	N/A	N/A	-\$1.82	<b>Ref</b>	-\$8.11	-\$6.48
<b>Percent Difference</b>	-10.6%	-9.4%	-5.3%	-12.7%	N/A	-9.7%	-13.3%	-12.7%	N/A	N/A	-4.2%	<b>Ref</b>	-18.5%	-14.8%

Note: "N/A" indicates that data was not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group; all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

Physical therapists (Figure 8) in the All Health Care and Social Assistance industry had lower average hourly wages than in the Nursing Care Facilities industry (\$39.14 vs. \$43.79; 10.6 percent lower). Physical therapists had a lower average hourly wage in the Community Care Facilities for the Elderly industry (which includes assisted living facilities) and all other comparison industries than physical therapists in the Nursing Care Facilities industry.

## Occupational Therapy Assistants

Figure 9. Wage and Wage Differences for Occupational Therapy Assistants Across Select Industries

	All Health Care and Social Assistance	Ambulatory Health Care Services		Hospitals	Hospitals						Nursing and Residential Care Facilities	Nursing and Residential Care Facilities	Community Care Facilities for the Elderly	Total Government
		Ambulatory Health Care Services	Home Health Care Services		State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals				
Average Hourly Wage	\$28.56	\$29.19	\$31.78	\$25.22	*	\$26.84	\$24.87	\$25.22	*	*	\$30.12	<b>\$30.58</b>	*	N/A
Wage Difference	-\$2.02	-\$1.39	\$1.20	-\$5.36	N/A	-\$3.74	-\$5.71	-\$5.36	N/A	N/A	-\$0.46	Ref	N/A	N/A
Percent Difference	-6.6%	-4.5%	3.9%	-17.5%	N/A	-12.2%	-18.7%	-17.5%	N/A	N/A	-1.5%	Ref	N/A	N/A

Note: "N/A" indicates that data was not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

For occupational therapy assistants (Figure 9), the average hourly wage was lower in the All Health Care and Social Assistance industry than in the Nursing Care Facilities industry (\$28.56 vs. \$30.58; 6.6 percent lower). The average hourly wage for occupational therapy assistants was lower in most comparison industries compared to occupational therapy assistants in the Nursing Care Facilities industry, except for the Home Health Care Services industry.

## Occupational Therapy Aides

Figure 10. Wage and Wage Differences for Occupational Therapy Aides Across Select Industries

	All Health Care and Social Assistance	Ambulatory Health Care Services		Hospitals							Nursing and Residential Care Facilities			Total Government
		Ambulatory Health Care Services	Home Health Care Services	Hospitals	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	State - Other Specialty Hospitals	Nursing and Residential Care Facilities	Nursing Care Facilities	
Average Hourly Wage	\$18.53	N/A	N/A	\$16.01	*	*	*	*	*	*	\$19.91	<b>\$19.97</b>	*	N/A
Wage Difference	-\$1.44	N/A	N/A	-\$3.96	N/A	N/A	N/A	N/A	N/A	N/A	-\$0.06	<b>Ref</b>	N/A	N/A
Percent Difference	-7.2%	N/A	N/A	-19.8%	N/A	N/A	N/A	N/A	N/A	N/A	-0.3%	<b>Ref</b>	N/A	N/A

Note: "N/A" indicates that data was not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group; all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

In the All Health Care and Social Assistance industry, occupational therapy aides (*Figure 10*) had a lower average wage than occupational therapy aides in the Nursing Care Facilities industry (\$18.53 vs. \$19.97; 7.2 percent lower). The average hourly wage for occupational therapy aides was lower in all other comparison industries than for occupational therapy aides in the Nursing Care Facilities industry.

## Physical Therapist Assistants

Figure 11. Wage and Wage Differences for Physical Therapists Assistants Across Select Industries

	Ambulatory Health Care Services			Hospitals							Nursing and Residential Care Facilities		Total Government	
	Ambulatory Health Care Services	Home Health Care Services	Hospitals	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	Nursing and Residential Care Facilities	Nursing Care Facilities	Community Care Facilities for the Elderly		
<b>Average Hourly Wage</b>	\$26.10	\$26.92	\$29.39	\$24.77	*	\$25.84	\$24.32	\$24.80	*	*	\$26.22	<b>\$26.26</b>	*	N/A
<b>Wage Difference</b>	-\$0.16	\$0.66	\$3.13	-\$1.49	N/A	-\$0.42	-\$1.94	-\$1.46	N/A	N/A	-\$0.04	<b>Ref</b>	N/A	N/A
<b>Percent Difference</b>	-0.6%	2.5%	11.9%	-5.7%	N/A	-1.6%	-7.4%	-5.6%	N/A	N/A	-0.2%	<b>Ref</b>	N/A	N/A

Note: "N/A" indicates that data was not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

The average hourly wage of physical therapist assistants (*Figure 11*) in the All Health Care and Social Assistance industry was lower than in the Nursing Care Facilities industry (\$26.10 vs. \$26.26; 0.6 percent lower). Physical therapist assistants had a lower average hourly wage across most other comparison industries compared to the Nursing Care Facilities industry, except for the Ambulatory Health Care Services industry and the Home Health Care Services industry.

## Physical Therapist Aides

Figure 12. Wage and Wage Differences for Physical Therapist Aides Across Select Industries

	All Health Care and Social Assistance	Ambulatory Health Care Services		Hospitals							Nursing and Residential Care Facilities		Total Government	
		Ambulatory Health Care Services	Home Health Care Services	Hospitals	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	Nursing and Residential Care Facilities	Community Care Facilities for the Elderly		
Average Hourly Wage	\$12.13	\$10.07	*	\$13.20	*	\$11.98	\$13.62	\$13.12	*	*	\$15.70	<b>\$16.21</b>	\$13.80	N/A
Wage Difference	-\$4.08	-\$6.14	N/A	-\$3.01	N/A	-\$4.23	-\$2.59	-\$3.09	N/A	N/A	-\$0.51	<b>Ref</b>	-\$2.41	N/A
Percent Difference	-25.2%	-37.9%	N/A	-18.6%	N/A	-26.1%	-16.0%	-19.1%	N/A	N/A	-3.1%	<b>Ref</b>	-14.9%	N/A

Note: "N/A" indicates that data was not available for analysis. "\*" indicate that data are suppressed. Bolded values are to identify the reference group, and all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

Physical therapist aides (Figure 12) in the All Health Care and Social Assistance industry had a lower average hourly wage than in the Nursing Care Facilities industry (\$16.21 vs. \$12.13; 25.2 percent lower). Physical therapist aides in the Community Care Facilities for the Elderly industry (which includes assisted living facilities) and all other comparison industries had a lower average hourly wage than physical therapist aides in the Nursing Care Facilities industry.

## Limitations

Due to the limited data, no tests of significance were calculated. The reader should evaluate the results presented with caution. Additionally, the impact of suppression and missing data should also be noted. The Kansas Department of Labor indicates that estimates cannot be produced for every occupation due to confidentiality and quality criteria.<sup>14</sup> For the current analysis, the data were presented in the tables (Appendix B) as it was made available to KHI to allow the reader to understand the distribution of missing and suppressed data. If additional data were made available, the conclusions could change.

## Recommendations for Further Study

KHI has identified three main areas of interest for further study related to differences in wages and related information among nursing-related industries. First, an examination of the health care landscape for selected industries and occupations to evaluate staffing numbers, projected needs, and other issues; second, a deeper examination of the variations in wages identified in this report; and third, an examination of how wage differences and other factors impact recruitment, retention and turnover.

Specifically, the first question of interest is:

- 1) What differences are there in the composition of staff by health care setting?

For variations in wage, questions of interest are:

- 1) How do wage differences between health care settings vary by geographic areas (e.g., rural and urban designation or by other regional designations such as public health preparedness region)?
- 2) Are observed wage differences correlated with the race, ethnicity or immigration status of employees by health care setting?

For recruitment and retention, the question of interest is:

- 1) What policies or programs could be implemented to improve recruitment and retention of qualified staff?

## ***Rationale***

### ***Composition of health care professionals by industry***

Little research has been done on the composition of the health care labor force in Kansas. An examination of the composition of health care professionals allows for a better understanding of the needs of each industry and how the workforce is distributed. These issues may impact decisions about recruitment, compensation, and other issues for consideration. KDOL and other groups have published some information related to the workforce. During the exploration of additional data, no information about workforce composition was found in provided reports.

### ***Variations in wage and retention by geographic area***

Geographic variations have been reported in many health care-related measures, supplies and demands. Future study could help assess the degree of wage variations by geographic area and how wage variations are associated with staff retention.

### ***Variations in wage and retention by staff demographics***

Historically, efforts to bolster the health care workforce involved recruitment of an immigrant racial/ethnic minority workforce, including both at the physician and nursing level. Future study could examine how race, ethnicity and immigration status is associated with workforce composition and variations in wage and retention rates, especially in rural regions of the state.

### ***Policies and programs for improving recruitment and retention***

Findings from the Nursing Wage Report show variations in wage that could pose challenges in recruitment and retention for certain industries. Factors that contribute to wage variations and retention are multidimensional, and wages may be just one component of many that influence the health care workforce in Kansas. Understanding policies and programs that are successful in improving recruitment and retention will help determine options for addressing the Kansas health care workforce.

Each of the topics above is discussed in detail below. First, a possible approach to answer each question will be discussed; this will be followed by a discussion of data availability (if any); and finally, the feasibility of the analysis will be discussed based on data, time and resources.

## ***Composition of Staff by Setting***

The demand for various types of health care professionals differs by industry. Information on the composition of staff by industry will help understand how workforce is distributed and how this distribution across settings and industries may impact factors such as wage competitiveness.

Of value from this project would be the development of occupational profiles within industries; that is, a profile that says a “typical nursing facility has x percent of nursing assistants; x percent of home health aides, ...”. Additionally, a cross-industry comparison could also be made with a focus on a single occupation across a variety of settings to understand staffing differences and potential impacts on wage variations.

This project is highly feasible; using Kansas Labor Information Center (KLIC) data or Kansas Department of Labor Market Data, the number of estimated employees in an occupation by industry can be identified for different aggregation levels including state, regions and counties. One potential limitation is that smaller geographic areas (such as counties) may be impacted by suppression effects if counts are too low, though regional analyses should be able to minimize suppression.

Using the number of workers in a setting (possibly further refined by geographic region), a staffing composition ratio of different positions could be created. This ratio would be created to evaluate the staffing composition ratios for the reference group (e.g., registered nurses) against other comparison occupations. Another ratio could also be calculated for registered nurses in a reference industry (e.g. nursing care facilities) and other health care industries of interest. The purpose of these ratios is to understand how current staffing is distributed across industries, which could be used to provide further context about industry needs and their relationship to demand and compensation. Additional primary data collection could include a case study on staffing ratios, staffing hours, and retention and turnover.

A similar profile could also be developed for the hospital setting and other competing industries using primarily public data. Additionally, primary data collection (development of surveys and questionnaires to distribute to facilities across Kansas to address questions of interest) could be done to further supplement the proposed work.

## ***Variation by Geographic Region***

Of interest here is how geographic region affects wage differences among occupations and industries. Specifically, rural/urban designations or other regional distinctions through peer group counties could be used to evaluate wage differences. The rural and urban categories of the peer group counties potentially could be evaluated by each sub-group or combined into a larger rural group and urban group for comparison. Regional designations could be based on existing categories such as public health preparedness regions, district office geographic regions, workforce areas or, per the Kansas Department of Labor, customized regions for aggregation.

This project is highly feasible; using Kansas Labor Information Center (KLIC) data or Kansas Department of Labor Market Data, wages could be aggregated across multiple regional areas. One potential limitation is that smaller geographic areas, especially in rural areas, could be heavily affected by suppression effects due to low counts.

This data can be explored through entry-level wage, experienced wage, mean wage and median wage for either hourly wage or annual salary. Additional primary research and data collection may be required to supplement this work depending on additional questions of interest.

## ***Racial/Ethnic Minorities and Immigrant Populations***

Some potential questions for further exploration are: 1) Are there differences in the racial and ethnic composition of each industry's workforce?, 2) Are differences in the racial and ethnic composition of each industry's workforce correlated with wage variation among industries?, 3) Are differences in the percentage of immigrants in each industry's workforce correlated with wage variation among industries?, and 4) Do regional differences contribute to differences in the racial, ethnic or immigrant composition of the health care workforce?

This study is the least feasible because data are not available for race/ethnicity linked to occupation and wages directly from the Wage Survey. The state of Kansas does not collect data on race/ethnicity or immigrant status, instead they provide Census/ACS data to the Bureau of Labor Statistics. So, any data specifically related to these industries that need to be collected would require alternative approaches including primary data collection and analysis. This would

include survey instrument development, target identification, piloting, and analysis of the final results.

Alternatively, while Kansas-specific racial/ethnic or immigration data is not available in the Wage Survey, wage data from other available sources could be used for context, including the Bureau of Labor Statistics' reports on the percentage of certain minority populations and the immigrant labor workforce for the United States. The limitation of this approach would be that the translation of national-level data to Kansas may not be representative of the Kansas experience.

## ***Recruitment and Retention***

### ***Improvement in Recruitment and Retention***

Another potential area of research is related to incentives and other considerations afforded to the nursing and general health care workforce. In Kansas, there is a state loan repayment program for health care providers, but it does not cover nursing occupations (with the exception of psychiatric nurse specialists, certified nurse practitioners and certified nurse midwives). Other programs also exist, such as the NURSE Corps Loan repayment program for registered nurses and other qualified nursing occupations in Critical Shortage Facilities in high-need areas.

This analysis is feasible as a literature review of past programs and best practices. This review would be developed to identify what programs and approaches have been successful for retention in the nursing workforce across time and potential promising practices for the future. This review could act as a framework for future strategic planning, marketing and outreach as part of the development of a nursing workforce in Kansas.

This work could then lead to future work including primary data collection and analysis to better understand retention and recruitment efforts and outcomes in the state of Kansas.



## Appendix A: Select Industries and Occupations Examined

Figure A-1. Select Occupations and Industries Compared in this Analysis

Occupations	Industries
Dietitians and Nutritionists	<b>ALL HEALTH CARE AND SOCIAL ASSISTANCE</b>
Registered Nurses	<b>AMBULATORY HEALTH CARE SERVICES</b>
Licensed Practical and Licensed Vocational Nurses	Home Health Care Services
Home Health Aides	<b>HOSPITALS</b>
Nursing Assistants	State Hospitals
Occupational Therapists	Local Hospitals
Physical Therapists	Private Hospitals
Occupational Therapy Assistants	<b>General Medical/Surgical Hospitals</b>
Occupational Therapy Aides	Local -General Medical/Surgical Hospitals
Physical Therapist Assistants	Private -General Medical/Surgical Hospitals
Physical Therapist Aides	<b>Psychiatric and Substance Abuse Hospitals</b>
	<b>Other Specialty Hospitals</b>
	State - Other Specialty Hospitals
	<b>NURSING AND RESIDENTIAL CARE FACILITIES</b>
	Nursing Care Facilities
	Community Care Facilities for the Elderly
	<b>TOTAL GOVERNMENT</b> (federal, state and local government, excluding state and local government-owned schools and hospitals and the U.S. Postal Service)

Note: Occupations based on Bureau of Labor Statistics Standard Codes. Industries based on Bureau of Labor Statistics NAICS Codes. All Health Care and Social Assistance includes all groups and subgroups, except for Total Government. Main groups are identified in bold and capitalized while subgroups are indented. The main group for State - Other Specialty Hospitals is listed here for reference but is not included in the analysis due to lack of data.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.



# Appendix B: Average Hourly Wages

Figure B-1. Average Hourly Wages by Select Industries and Occupations in Kansas

	Ambulatory Health Care Services		Hospitals										Nursing and Residential Care Facilities		Total Government
	All Health Care and Social Assistance	Home Health Care Services	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	General Medical/Surgical Hospitals			Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	Nursing and Residential Care Facilities	Nursing Care Facilities for the Elderly	Community Care Facilities for the Elderly	
							General Medical/Surgical Hospitals	Local-General Medical/Surgical Hospitals	Private-General Medical/Surgical Hospitals						
Dietitians and Nutritionists	\$26.39	\$28.83	\$31.45	\$25.02	*	\$26.31	\$24.86	\$24.99	\$26.31	\$24.80	*	\$29.24	\$29.11	\$30.46	\$25.53
Registered Nurses	\$27.50	\$26.17	\$27.10	\$28.19	\$27.84	\$26.07	\$28.55	\$28.24	\$26.07	\$28.61	\$26.28	\$29.33	\$25.23	\$24.22	\$30.92
Nurse Practitioners	\$43.89	\$44.01	\$62.43	\$45.73	\$44.53	\$44.57	\$46.00	\$45.83	\$44.57	\$46.11	\$44.36	N/A	N/A	N/A	\$36.53
Licensed Practical and Licensed Vocational Nurses	\$19.10	\$18.88	\$19.40	\$18.64	\$18.43	\$17.96	\$18.95	\$18.59	\$17.96	\$18.89	\$18.71	\$17.49	\$19.38	\$19.49	\$20.55
Home Health Aides	\$11.10	\$11.34	\$11.29	\$14.29	*	\$13.87	\$14.70	\$14.29	\$13.87	\$14.70	*	\$10.88	*	\$11.73	\$11.94
Nursing Assistants	\$11.49	\$12.67	\$11.67	\$12.00	\$10.97	\$11.66	\$12.20	\$12.03	\$11.66	\$12.20	\$10.73	\$12.13	\$11.29	\$11.24	\$12.10
Occupational Therapists	\$40.06	\$42.32	\$44.07	\$37.22	*	\$40.07	\$36.83	\$37.41	\$40.07	\$37.02	*	\$40.63	\$40.66	*	\$37.33
Physical Therapists	\$39.14	\$39.69	\$41.45	\$38.21	*	\$39.56	\$37.96	\$38.22	\$39.56	\$37.96	*	\$41.97	\$43.79	\$35.68	\$37.31
Occupational Therapy Assistants	\$28.56	\$29.19	\$31.78	\$25.22	*	\$26.84	\$24.87	\$25.22	\$26.84	\$24.87	*	\$30.12	\$30.58	*	N/A
Occupational Therapy Aides	\$18.53	N/A	N/A	\$16.01	*	*	*	*	*	*	*	\$19.91	\$19.97	*	N/A
Physical Therapist Assistants	\$26.10	\$26.92	\$29.39	\$24.77	*	\$25.84	\$24.32	\$24.80	\$25.84	\$24.36	*	\$26.22	\$26.26	*	N/A
Physical Therapist Aides	\$12.13	\$10.07	*	\$13.20	*	\$11.98	\$13.62	\$13.12	\$11.98	\$13.56	*	\$15.70	\$16.21	\$13.80	N/A

Note: "N/A" indicates that data was not available for analysis. "\*" indicates that data are suppressed. Bolded values are to identify the reference group: all other groups are compared to this reference group. "Ref" is the reference group for comparisons. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government. Nurse Practitioner data are provided here for reference but are not included in the analysis due to missing data for nursing care industries.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.



# Appendix C: Group 1

Figure C-1. Difference in Average Hourly Wages in Kansas between Nursing Care Facilities and Comparison Industries in Kansas

	Ambulatory Health Care Services		Hospitals										Nursing and Residential Care Facilities		Total Government	
	All Health Care and Social Assistance	Ambulatory Health Care Services	State Hospitals					Local Hospitals					Nursing and Residential Care Facilities	Community Care Facilities for the Elderly		
			Home Health Care Services	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	General Medical/Surgical Hospitals	Local - General Medical/Surgical Hospitals	Private - General Medical/Surgical Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals				Other Specialty Hospitals
Dietitians and Nutritionists	-\$2.72	-\$0.28	\$2.34	-\$4.09	N/A	-\$2.80	-\$4.25	-\$4.12	-\$2.80	-\$4.31	N/A	N/A	\$0.13	Ref	\$1.35	-\$3.58
Registered Nurses	\$2.27	\$0.94	\$1.87	\$2.96	\$2.61	\$0.84	\$3.32	\$3.01	\$0.84	\$3.38	\$1.05	\$4.10	-\$0.18	Ref	-\$1.01	\$5.69
Licensed Practical and Licensed Vocational Nurses	-\$0.39	-\$0.61	-\$0.09	-\$0.85	-\$1.06	-\$1.53	-\$0.54	-\$0.90	-\$1.53	-\$0.60	-\$0.78	-\$2.00	-\$0.11	Ref	-\$0.32	\$1.06
Nursing Assistants	\$0.25	\$1.43	\$0.43	\$0.76	-\$0.27	\$0.42	\$0.96	\$0.79	\$0.42	\$0.96	-\$0.51	\$0.89	\$0.05	Ref	\$0.11	\$0.86

Note: "N/A" indicates that data were not available for analysis. Bolded "Ref" values are to identify the reference group; all other groups are compared to this reference group. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government. Home Health Aides are not included here as they have a different reference category.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

Figure C-2: Percent difference in Average Hourly Wages between Nursing Care Facilities and Comparison Industries in Kansas

	Ambulatory Health Care Services		Hospitals										Nursing and Residential Care Facilities		Total Government	
	Ambulatory Health Care Services	Home Health Care Services	Hospitals	State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	General Medical/Surgical Hospitals	Local-General Medical/Surgical Hospitals	Private-General Medical/Surgical Hospitals	General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	Other Specialty Hospitals	Nursing and Residential Care Facilities		Community Care Facilities for the Elderly
All Health Care and Social Assistance	-9.3%	-1.0%	8.0%	-14.1%	N/A	-9.6%	-14.6%	-14.2%	-9.6%	-14.8%	N/A	N/A	0.4%	Ref	4.6%	-12.3%
Dietitians and Nutritionists	9.0%	3.7%	7.4%	11.7%	10.3%	3.3%	11.9%	3.3%	3.3%	13.4%	4.2%	16.3%	-0.7%	Ref	-4.0%	22.6%
Registered Nurses	-2.0%	-3.1%	-0.5%	-4.4%	-5.4%	-7.9%	-2.8%	-4.6%	-7.9%	-3.1%	-4.0%	-10.3%	-0.6%	Ref	-1.6%	5.4%
Licensed Practical and Licensed Vocational Nurses	2.2%	12.7%	3.8%	6.8%	-2.4%	3.7%	8.5%	7.0%	3.7%	8.5%	-4.5%	7.9%	0.4%	Ref	1.0%	7.7%
Nursing Assistants																

Note: "N/A" indicates that data were not available for analysis. Bolded "Ref" values are to identify the reference group; all other groups are compared to this reference group. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government. Home Health Aides are not included here as they have a different reference category.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

# Appendix D: Group 2

Figure D-1. Difference in Average Hourly Wages in Kansas between Nursing Care Facilities and Comparison Industries in Kansas

	Ambulatory Health Care Services		Hospitals										Nursing and Residential Care Facilities		Total Government		
	All Health Care and Social Assistance	Ambulatory Health Care Services	Home Health Care Services	Hospitals	General Medical/Surgical Hospitals					Psychiatric and Substance Abuse Hospitals		Other Specialty Hospitals				Nursing Care Facilities	Community Care Facilities for the Elderly
					State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Local-General Medical/Surgical Hospitals	Private-General Medical/Surgical Hospitals	State-Other Specialty Hospitals	Nursing and Residential Care Facilities	Ref	N/A			
Occupational Therapists	-\$0.60	\$1.66	\$3.41	-\$3.44	N/A	-\$0.59	-\$3.83	-\$3.25	-\$0.59	-\$3.64	N/A	N/A	N/A	N/A	Ref	N/A	-\$3.33
Physical Therapists	-\$4.65	-\$4.10	-\$2.34	-\$5.58	N/A	-\$4.23	-\$5.83	-\$5.57	-\$4.23	-\$5.83	N/A	N/A	N/A	Ref	-\$8.11	-\$6.48	
Occupational Therapy Assistants	-\$2.02	-\$1.39	\$1.20	-\$5.36	N/A	-\$3.74	-\$5.71	-\$5.36	-\$3.74	-\$5.71	N/A	N/A	N/A	Ref	N/A	N/A	
Occupational Therapy Aides	-\$1.44	N/A	N/A	-\$3.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ref	N/A	N/A	
Physical Therapist Assistants	-\$0.16	\$0.66	\$3.13	-\$1.49	N/A	-\$0.42	-\$1.94	-\$1.46	-\$0.42	-\$1.90	N/A	N/A	N/A	Ref	N/A	N/A	
Physical Therapist Aides	-\$4.08	-\$6.14	N/A	-\$3.01	N/A	-\$4.23	-\$2.59	-\$3.09	-\$4.23	-\$2.65	N/A	N/A	N/A	Ref	-\$2.41	N/A	

Note: "N/A" indicates that data were not available for analysis. Bolded "Ref" values are to identify the reference group; all other groups are compared to this reference group. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

**Figure D-2. Percent difference in Average Hourly Wages between Nursing Care Facilities and Comparison Industries in Kansas**

All Health Care and Social Assistance	Ambulatory Health Care Services	Home Health Care Services	Hospitals										Nursing and Residential Care Facilities	Community Care Facilities for the Elderly	Total Government		
			State Hospitals	Local Hospitals	Private Hospitals	General Medical/Surgical Hospitals	Local-General Medical/Surgical Hospitals	Private-General Medical/Surgical Hospitals	Psychiatric and Substance Abuse Hospitals	State-Other Specialty Hospitals	Nursing and Residential Care Facilities	Community Care Facilities for the Elderly					
Occupational Therapists	-1.5%	4.1%	8.4%	-8.5%	N/A	-1.5%	-9.4%	-13.3%	-8.0%	-1.5%	-9.0%	N/A	N/A	-0.1%	Ref	N/A	-8.2%
Physical Therapists	-10.6%	-9.4%	-5.3%	-12.7%	N/A	-9.7%	-13.3%	-12.7%	-9.7%	-13.3%	N/A	N/A	N/A	-4.2%	Ref	-18.5%	-14.8%
Occupational Therapy Assistants	-6.6%	-4.5%	3.9%	-17.5%	N/A	-12.2%	-18.7%	-17.5%	-12.2%	-18.7%	N/A	N/A	N/A	-1.5%	Ref	N/A	N/A
Occupational Therapy Aides	-7.2%	N/A	N/A	-19.8%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.3%	Ref	N/A	N/A
Physical Therapist Assistants	-0.6%	2.5%	11.9%	-5.7%	N/A	-1.6%	-7.4%	-5.6%	-1.6%	-7.2%	N/A	N/A	N/A	-0.2%	Ref	N/A	N/A
Physical Therapist Aides	-25.2%	-37.9%	N/A	-18.6%	N/A	-26.1%	-16.0%	-19.1%	-26.1%	-16.3%	N/A	N/A	N/A	-3.1%	Ref	-14.9%	N/A

Note: "N/A" indicates that data were not available for analysis. Bolded "Ref" values are to identify the reference group; all other groups are compared to this reference group. A positive number indicates that the average hourly wage for an industry was higher than the reference group (Nursing Care Facilities), and a negative number indicates that the average hourly wage for an industry was lower than the reference group. All Health Care and Social Assistance is the main industry category which acts as the mean of the average hourly wages for each occupation across comparison industries, except for Total Government.

Source: KHI analysis of Kansas Department of Labor Wage Data, 2016.

## Appendix E: Report Endnotes

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# Appendix F: Glossary

## Overview

This document provides the reader with additional information to contextualize the findings in the report *Wage Differences Among Industries for Select Nursing and Ancillary Health Occupations in Kansas* provided to LeadingAge Kansas. In the report, wages were analyzed across industries by occupations to understand differences across industries within occupation types. The data for the analyses in the report were based on the Bureau of Labor Statistics' Standard Occupational Classification (SOC) system and the North American Industrial Classification System (NAICS).

The NAICS industry code definitions are presented for each of the industries and relevant sub-categories represented in the report *Wage Differences Among Industries for Select Nursing and Ancillary Health Occupations in Kansas*. The classifications for the NAICS are complex in nature and do not always match colloquial terms within health care industries. To provide the reader with sufficient information, the *definitions* (classification descriptions) and *index items* (example industries) are presented where they are available from the Bureau of Labor Statistics. If information is not provided, then examples of associated industries are presented if information allows.

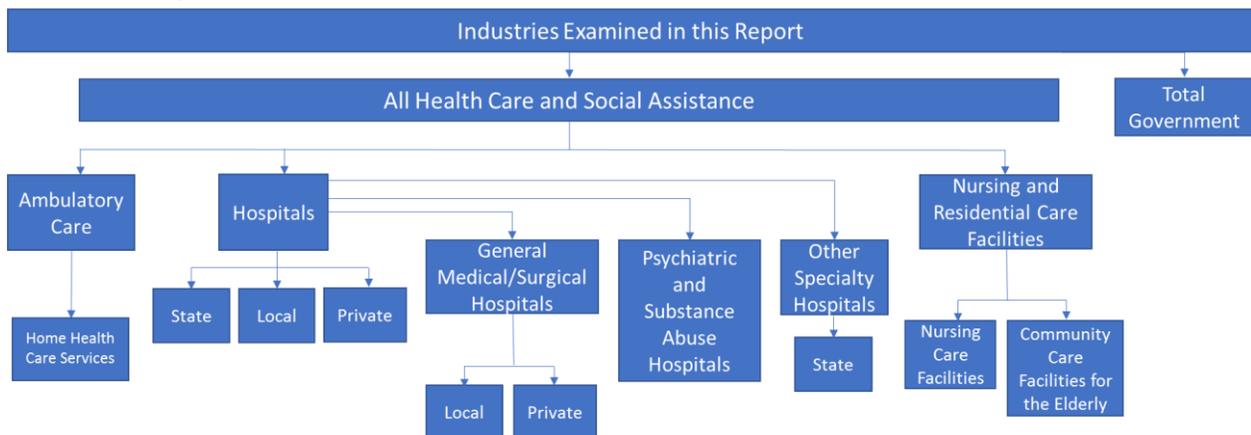
The definitions for occupations of interest for the report are based on the 2010 SOC System through the Bureau of Labor Statistics. Definitions are presented as defined by the Bureau of Labor Statistics.

The industries' definitions are provided first, followed by the occupations' definitions.

## Industries

Presented below are the industries examined in the report *Wage Differences Among Industries for Select Nursing and Ancillary Health Occupations in Kansas*. These industries are identified through the NAICS code system. Two industries were identified for the report: All Health Care and Social Assistance and Total Government (Federal, State and Local Government, excluding the U.S. Postal Service and state and local schools and hospitals). All Health Care and Social Assistance includes Ambulatory Care, Hospitals and Nursing and Residential Care Facilities. While All Health Care and Social Assistance and Total Government are not connected directly through the NAICS hierarchy, they can both be considered connected as major health services industries.

**Figure 1. Hierarchy of Industries Examined in the Report Wage Differences Among Industries for Select Nursing and Ancillary Health Occupations in Kansas**



Note: Industries were selected for analysis based on data availability and input from LeadingAge Kansas. Based on Bureau of Labor Statistics North American Industry Classification System (NAICS) classification hierarchy.

Source: Kansas Department of Labor Wage Data, 2016.

# **Definitions of Industries as Defined by the Bureau of Labor Statistics North American Industrial Classification System**

## **All Health Care and Social Assistance**

### **Description**

“The Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. The services provided by establishments in this sector are delivered by trained professionals. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry. Excluded from this sector are aerobic classes in Amusement, Gambling, and Recreation Industries and nonmedical diet and weight reducing centers, Personal and Laundry Services. Although these can be viewed as health services, these services are not typically delivered by health practitioners.”<sup>1</sup>

All Health Care and Social Assistance includes: Ambulatory Care, Hospitals, and Nursing and Residential Care Facilities.

## ***Ambulatory Care***

### **Description**

“Industries in the Ambulatory Health Care Services subsector provide health care services directly or indirectly to ambulatory patients and do not usually provide inpatient services. Health practitioners in this subsector provide outpatient services, with the facilities and equipment not usually being the most significant part of the production process.”<sup>2</sup>

Ambulatory care includes services such as Home Health Care Services, as detailed below.

## ○ Home Health Care Services

### **Description**

“This industry comprises establishments primarily engaged in providing skilled nursing services in the home, along with a range of the following: personal care services; homemaker and companion services; physical therapy; medical social services; medications; medical equipment and supplies; counseling; 24-hour home care; occupation and vocational therapy; dietary and nutritional services; speech therapy; audiology; and high-tech care, such as intravenous therapy.”

### **Index Items**

- 1) Home care of elderly, medical
- 2) Home health agencies
- 3) Home health care agencies
- 4) Home infusion therapy services
- 5) Home nursing services (except private practices)
- 6) Hospice care services, in-home
- 7) Nurse associations, visiting
- 8) Nursing agencies, primarily providing home nursing services
- 9) Visiting nurse associations<sup>3</sup>

## *Hospitals*

### **Description**

“Industries in the Hospitals subsector provide medical, diagnostic, and treatment services that include physician, nursing, and other health services to inpatients and the specialized accommodation services required by inpatients. Hospitals may also provide outpatient services as a secondary activity. Establishments in the Hospitals subsector provide inpatient health services, many of which can only be provided using the specialized facilities and equipment that form a significant and integral part of the production process.”<sup>4</sup>

Hospital subsectors include General Medical/Surgical Hospitals, Psychiatric/Substance Abuse Hospitals, and Other Specialty Hospitals, as detailed below.

## ○ *General Medical/Surgical Hospitals*

### **Description**

“This industry comprises establishments known and licensed as general medical and surgical hospitals primarily engaged in providing diagnostic and medical treatment (both surgical and nonsurgical) to inpatients with any of a wide variety of medical conditions. These establishments maintain inpatient beds and provide patients with food services that meet their nutritional requirements. These hospitals have an organized staff of physicians and other medical staff to provide patient care services. These establishments usually provide other services, such as outpatient services, anatomical pathology services, diagnostic X-ray services, clinical laboratory services, operating room services for a variety of procedures, and pharmacy services.”

### **Index Items**

- 1) Children's hospitals, general
- 2) General medical and surgical hospitals
- 3) Hospitals, general medical and surgical
- 4) Hospitals, general pediatric
- 5) Osteopathic hospitals<sup>5</sup>

## ○ *Psychiatric and Substance Abuse Hospitals*

### **Description**

“This industry comprises establishments known and licensed as psychiatric and substance abuse hospitals primarily engaged in providing diagnostic, medical treatment, and monitoring services for inpatients who suffer from mental illness or substance abuse disorders. The treatment often requires an extended stay in the hospital. These establishments maintain inpatient beds and provide patients with food services that meet their nutritional requirements. They have an organized staff of physicians and other medical staff to provide patient care services. Psychiatric, psychological, and social work services are available at the facility. These hospitals usually provide other services, such as outpatient services, clinical laboratory services, diagnostic X-ray services, and electroencephalograph services.”

### **Index Items**

- 1) Alcoholism rehabilitation hospitals
- 2) Children's hospitals, psychiatric or substance abuse
- 3) Detoxification hospitals
- 4) Drug addiction rehabilitation hospitals
- 5) Hospitals for alcoholics
- 6) Hospitals, addiction
- 7) Hospitals, mental (except intellectual and developmental disability)
- 8) Hospitals, psychiatric (except convalescent)
- 9) Hospitals, psychiatric pediatric
- 10) Hospitals, substance abuse
- 11) Mental (except intellectual and developmental disability) hospitals
- 12) Mental health hospitals
- 13) Psychiatric hospitals (except convalescent)
- 14) Rehabilitation hospitals, alcoholism and drug addiction<sup>6</sup>

### ○ *Other Specialty Hospitals*

#### **Description**

“This industry consists of establishments known and licensed as specialty hospitals primarily engaged in providing diagnostic and medical treatment to inpatients with a specific type of disease or medical condition (except psychiatric or substance abuse). Hospitals providing long-term care for the chronically ill and hospitals providing rehabilitation, restorative, and adjustive services to physically challenged or disabled people are included in this industry. These establishments maintain inpatient beds and provide patients with food services that meet their nutritional requirements. They have an organized staff of physicians and other medical staff to provide patient care services. These hospitals may provide other services, such as outpatient services, diagnostic X-ray services, clinical laboratory services, operating room services, physical therapy services, educational and vocational services, and psychological and social work services.”

## Index Items

- 1) Cancer hospitals
- 2) Children's hospitals, specialty (except psychiatric, substance abuse)
- 3) Chronic disease hospitals
- 4) Extended-care hospitals (except mental, substance abuse)
- 5) Eye, ear, nose, and throat hospitals
- 6) Hospitals, specialty (except psychiatric, substance abuse)
- 7) Leprosy hospitals
- 8) Maternity hospitals
- 9) Neurological hospitals
- 10) Obstetrical hospital
- 11) Orthopedic hospitals
- 12) Physical rehabilitation hospitals
- 13) Rehabilitation hospitals (except alcoholism, drug addiction)
- 14) Tuberculosis and other respiratory illness hospitals<sup>7</sup>

## *Nursing and Residential Care Facilities*

### **Description**

“Industries in the Nursing and Residential Care Facilities subsector provide residential care combined with either nursing, supervisory, or other types of care as required by the residents. In this subsector, the facilities are a significant part of the production process and the care provided is a mix of health and social services with the health services being largely some level of nursing services.”<sup>8</sup>

Subcategories of industries in the Nursing and Residential Care Facilities include Nursing Care Facilities and Community Care Facilities for the Elderly detailed below.

### ○ *Nursing Care Facilities*

#### **Description**

“This industry comprises establishments primarily engaged in providing inpatient nursing and rehabilitative services. The care is generally provided for an extended period of time to

individuals requiring nursing care. These establishments have a permanent core staff of registered or licensed practical nurses who, along with other staff, provide nursing and continuous personal care services.”

### **Index Items**

- 1) Convalescent homes or convalescent hospitals (except psychiatric)
- 2) Group homes for the disabled with nursing care
- 3) Homes for the aged with nursing care
- 4) Homes for the elderly with nursing care
- 5) Hospices, inpatient care
- 6) Nursing homes
- 7) Rest homes with nursing care
- 8) Retirement homes with nursing care
- 9) Skilled nursing facilities<sup>9</sup>

### ○ *Community Care Facilities for the Elderly (which includes assisted living facilities)*

#### **Description**

“This industry comprises establishments primarily engaged in providing residential and personal care services for (1) the elderly and other persons who are unable to fully care for themselves and/or (2) the elderly and other persons who do not desire to live independently. The care typically includes room, board, supervision, and assistance in daily living, such as housekeeping services. In some instances, these establishments provide skilled nursing care for residents in separate on-site facilities.”<sup>10</sup>

#### **Includes:**

- Continuing Care Retirement Communities
- Assisted Living Facilities for the Elderly

## **Total Government (Federal, State and Local Government, excluding state and local schools and hospitals and the U.S. Postal Service)**

The Bureau of Labor Statistics does not provide a detailed description for this industry. Through its title and the titles of its subcategories, this category encapsulates government at the federal (executive) level, state level, and local government level.<sup>11</sup>

## ***Occupations***

Presented below are the definitions of occupations based on the Bureau of Labor Statistics' Standard Occupational Classification (SOC) Code definitions.

### ○ ***Registered Nurses***

"Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required. Includes Clinical Nurse Specialists. Excludes Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners."<sup>12</sup>

### ○ ***Nurse Practitioners***

"Diagnose and treat acute, episodic, or chronic illness, independently or as part of a health care team. May focus on health promotion and disease prevention. May order, perform, or interpret diagnostic tests such as lab work and x rays. May prescribe medication. Must be registered nurses who have specialized graduate education."<sup>13</sup>

### ○ ***Nursing Assistants***

"Provide basic patient care under direction of nursing staff. Perform duties such as feed, bathe, dress, groom, or move patients, or change linens. May transfer or transport patients. Includes nursing care attendants, nursing aides, and nursing attendants. Excludes Home Health Aides, Orderlies, Personal Care Aides, and Psychiatric Aides."<sup>14</sup>

### ○ ***Licensed Practical and Vocational Nurses***

"Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required."<sup>15</sup>

### ○ ***Dieticians and Nutritionists***

"Plan and conduct food service or nutritional programs to assist in the promotion of health and control of disease. May supervise activities of a department providing quantity food services, counsel individuals, or conduct nutritional research."<sup>16</sup>

### ○ *Home Health Aides*

“Provide routine individualized health care such as changing bandages and dressing wounds, and applying topical medications to the elderly, convalescents, or persons with disabilities at the patient's home or in a care facility. Monitor or report changes in health status. May also provide personal care such as bathing, dressing, and grooming of patient.”<sup>17</sup>

### ○ *Occupational Therapists*

“Assess, plan, organize, and participate in rehabilitative programs that help build or restore vocational, homemaking, and daily living skills, as well as general independence, to persons with disabilities or developmental delays.”<sup>18</sup>

### ○ *Occupational Therapy Assistants*

“Assist occupational therapists in providing occupational therapy treatments and procedures. May, in accordance with state laws, assist in development of treatment plans, carry out routine functions, direct activity programs, and document the progress of treatments. Generally requires formal training.”<sup>19</sup>

### ○ *Occupational Therapy Aides*

“Under close supervision of an occupational therapist or occupational therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing patient and treatment room.”<sup>20</sup>

### ○ *Physical Therapists*

“Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and improve or correct disabling conditions resulting from disease or injury.”<sup>21</sup>

### ○ *Physical Therapist Assistants*

“Assist physical therapists in providing physical therapy treatments and procedures. May, in accordance with state laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. Generally requires formal training.”<sup>22</sup>

○ *Physical Therapist Aides*

“Under close supervision of a physical therapist or physical therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing the patient and the treatment area.”<sup>23</sup>

## Appendix G: Glossary Endnotes

1. Bureau of Labor Statistics. NAICS 2012 Search, Health Care and Social Assistance: 62. [https://www.bls.gov/cew/bls\\_naics/v2/bls\\_naics\\_app.htm#tab=search&naics=2012&keyword=62&searchType=titles&fromHier=true](https://www.bls.gov/cew/bls_naics/v2/bls_naics_app.htm#tab=search&naics=2012&keyword=62&searchType=titles&fromHier=true)
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6. Bureau of Labor Statistics. NAICS 2012 Search, Psychiatric and Substance Abuse Hospitals: 622210. [https://www.bls.gov/cew/bls\\_naics/v2/bls\\_naics\\_app.htm#tab=search&naics=2012&keyword=622110&searchType=titles&filter=6\\_filter&sort=text\\_asc&resultIndex=0](https://www.bls.gov/cew/bls_naics/v2/bls_naics_app.htm#tab=search&naics=2012&keyword=622110&searchType=titles&filter=6_filter&sort=text_asc&resultIndex=0)
7. Bureau of Labor Statistics. NAICS 2012 Search, Specialty (except Psychiatric and Substance Abuse) Hospitals: 622310. [https://www.bls.gov/cew/bls\\_naics/v2/bls\\_naics\\_app.htm#tab=search&naics=2012&keyword=622310&searchType=titles&filter=6\\_filter&sort=text\\_asc&resultIndex=0](https://www.bls.gov/cew/bls_naics/v2/bls_naics_app.htm#tab=search&naics=2012&keyword=622310&searchType=titles&filter=6_filter&sort=text_asc&resultIndex=0)
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