



**Division of Employment and Training**

**Findings of the  
2010 Registered Nurse and 2011 Licensed Practical Nurse Surveys**

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## Executive Summary

This report summarizes the responses to the Wisconsin State 2010 Registered Nurse and 2011 Licensed Practical Nurse surveys administered by the Wisconsin Department of Safety and Professional Services as a requirement for license renewal. According to State Statute 106.30, the Department of Workforce Development (DWD) was to conduct a census of the nurses to assist policymakers in evaluating the supply of, demand for, and turnover among nurses, determining whether there are any regional shortages of nurses, shortages of nurses in any specialty areas, or impediments to entering the nursing profession in this state.

Several of the most notable observations are summarized below:

- Of the 77,553 licensed registered nurses completing the survey in Wisconsin, 74% (57,529) were providing direct patient care.<sup>1</sup> For the 14,165 licensed practical nurses completing the survey, 71% (10,004) were providing direct patient care.
- The nurses population is not as diverse as the population at large
  - Most nurses were female and they represent 93% of all registered nurses and 95% of all licensed practical nurses.
  - Overall, the average age of the registered nurses was 46.8 and for the licensed practical nurses was 49.9.
  - It may be appropriate for the state to consider integrating cultural competency as a skill set for the Registered Nurse and Licensed Practical Nurse populations while trying to diversify the workforce.
- Educational requirements for specializations often include an advanced degree from a college and/or university.
- The largest percentage of Wisconsin registered nurses worked at a hospital setting, 47%, whereas 49% of the licensed practical nurses worked in the nursing home/extended care setting.
- Generally speaking, the older nurses who work in rural areas have less education than those nurses who work in urban areas.
- Those nurses who are licensed in the state, but work outside the state are generally better trained, older and better paid.

The state is in some ways a microcosm of the nation as it has adopted many of the suggestions proposed by subject matter experts to ensure a qualified and skilled workforce. However, with the additional certifications and the need for advanced degrees, the shortage first mentioned in 1965 may continue in the state and the nation for the foreseeable future.

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<sup>1</sup> Direct Patient Care is care provided personally by the nurse to the patient, and which may involve any aspects for the health care of the patient, including treatments, counseling, self-care, patient education, or administration of medication.



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## Introduction

There has been considerable discussion on the need for nurses in the state and the nation. In 1965, the American Nurses Association (ANA) wrote its first position paper on the education of nurses and how at the time the manner of which nurses were trained was a factor in the shortage of nurses. At that time, up to 85% of nurses in the United States were educated in hospital-based diploma programs (Donley & Flaherty, 2002)<sup>2</sup>. According to Donley and Flaherty, hospital-based nursing education programs provided a cheap supply of student nurses to staff hospital wards. Student nurse programs were focused almost exclusively on meeting the staffing needs of hospitals. Nursing students were required to spend 24 to 30 hours a week meeting heavy demands on hospital wards instead of studying. Student nurses staffed the wards in exchange for diplomas after about 3 years of service. While an effective training process for the hospitals, this approach left several entities without a means to obtain a qualified, well-trained workforce. The issue was further exacerbated by changes in the funding of health services. In 1983 government policy applied additional pressure to the demand side of nursing when legislation changed the Medicare reimbursement formula from a fee for service system to a system based on diagnostic categories. Although patient length of stay decreased and beds were closed, the intensity of nursing care, technology, and paperwork increased as did the demand for skilled nurses.

The state of Wisconsin is concerned with both the supply of nurses and the means to continue to provide quality health care. The state mandated a survey of Registered Nurses and Licensed Practical Nurses to determine the characteristics of the nurses licensed in the state and barriers these individuals face to provide nursing care, and negatively influence the number of available nurses.<sup>3</sup>

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<sup>2</sup> Donley, R., & Flaherty, M.J. (2002). Re visiting the American Nurse Association's first position on education for nurses [Electronic version]. *Online Journal of Issues in Nursing*, 7(2). Retrieved April 3, 2006, from [https://www.nursingworld.org/ojin/topic18/tpc18\\_1.htm](https://www.nursingworld.org/ojin/topic18/tpc18_1.htm)

<sup>3</sup> Wis. Stats. s.106.30(3) Beginning in 2011, by September 30 of each odd-numbered year, the department shall compile, process, and evaluate the survey results and submit a report of its findings to the speaker of the assembly and the president of the senate under s. 13.172 (3) and to the governor, the secretary of health services, and the nurse resource center described in sub. (5).





# Chapter 1 State Wide Demographic Information for Registered Nurses and Licensed Practical Nurses receiving Licenses in Wisconsin

The age of Wisconsin’s Registered Nurses and Licensed Practical Nurses is a critical component in analyzing the state of the professions in light of the age distribution of the general population and the future need for nurses. Table 1.1 presents summary comparative statistics for the general population, the nurses’ average age and a summary of major racial or ethnicity identification.

Table 1.1  
Comparative Statistics for State of Wisconsin General Population (U.S. Census 2010) and the Nursing Populations

Wisconsin Population	5,686,986
Average age by population	Average Age
Wisconsin at-large population	38.5 years
RN population	47.8 years
LPN population	50.0 years
Wisconsin Race and Ethnicity	Percent
White	86.2
Black/African American	6.3
Hispanic	5.9
Other	7.8

The Registered Nurse Survey (2010) garnered 77,553. This level of response does not reflect the number of Registered Nurses available and willing to work in Wisconsin. A large portion of the respondents were either working outside of Wisconsin or did not provide usable information on the location of their place of work. Therefore, calculating the number of survey respondents to the population of Wisconsin is not appropriate as a measure of health service availability. When comparing the general population to the nursing populations it should be remembered that the nurse population includes those who are not in the workforce.

## Age

Table 1.2 presents a side-by-side comparison of the age distributions including a reverse cumulative percentage to highlight the percentage of nurses over a chosen age. The data reflect responses from 77,442 registered nurses and 14,147 Licensed Practical Nurses.<sup>4</sup>

<sup>4</sup> No question in the survey was answered by every potential respondent. Most of the values reported below reflect percentage, not actual number of responses.

Table 1.2  
Age Distribution for Registered Nurse (2010) and Licensed Practical Nurse (2011)

Age Range	Percent by Age	Cumulative Percent > stated age	Percent by Age	Cumulative Percent > stated age
less than 25	2.7	100.0	1.7	100.0
25-29	8.9	97.3	6.8	98.3
30-34	9.1	88.5	7.7	91.6
35-39	9.9	79.4	7.5	83.9
40-44	10.0	69.5	8.2	76.4
45-49	13.6	59.5	9.9	68.2
50-54	15.6	45.9	14.3	58.4
55-59	14.8	30.3	19.6	44.1
60-64	8.9	15.5	14.6	24.5
65-69	4.2	6.6	6.7	9.9
70-74	1.7	2.4	2.3	3.2
75 and older	0.7	0.7	0.9	0.9

Note: percentages may not add to 100 due to rounding

To make the best use of Table 1.2 note the cumulative age column starts with the oldest nurse respondents. As shown in Table 1.2, Registered Nurses between 55 to 59 years old represent 14.8% of the Registered Nurse populations. The cumulative percentage of Registered Nurses who are 55 or older is 30.3%. The single greatest age cohort is the 50 to 54 year old group, at 15.6%. The small percentage of registered nurses in the groups 44 years old and younger, suggests a significant potential shortage of registered nurses in the coming years unless the number of Registered Nurses increases significantly, either from other professions or from a dramatic increase in the number of entrants into the workforce.

Table 1.2 shows the Licensed Practical Nurse workforce is heavily weighted toward the older workers. The Licensed Practical Nurse workforce between 55 and 59 years of age is the largest single group of Licensed Practical Nurses (19.6%). When looking at Licensed Practical Nurses who are 55 years of age or older, they make up 44.1% of the total number of Licensed Practical Nurses. Younger age groups make up even less of Licensed Practical Nurse population than the entrants of Registered Nurses.

The age composition of the nurses suggest that it may be appropriate for health care providers to consider the required skill sets of both Licensed Practical Nurses and Registered Nurses as well as physical requirements of the job limiting the number of individuals potentially entering the nursing profession as a second career. When combined, these findings suggest that creating a training program to move Licensed Practical Nurses into Registered Nurses will not adequately address the pending shortage for either group.

### **Workforce Diversity**

One of the concerns expressed by health care providers is a lack of diversity within the nursing professions. The lack of diversity may be a detriment to good health care delivery as studies have shown that sub-populations are more reluctant to get needed

health care if the individual providing the care is outside their sub-population<sup>5</sup>. This is a particular concern for complex procedures or procedures that may violate social mores of the sub-population. Table 1.3 and Table 1.4 summarize survey findings for the Registered Nurse and Licensed Practical Nurse in their respective surveys.

Both the Registered Nurse and Licensed Practical Nurse population are predominantly female. As shown in Table 1.3, regardless of the license, over 9 out of 10 nurses are female. For Registered Nurses, males make up less than 7% of the population while less than 5% of the Licensed Practical Nurses are male.

Table 1.3  
Gender Distribution for Registered Nurses (2010) and Licensed Practical Nurses (2011)  
(Percent)

	Registered Nurses Percent	Licensed Practical Nurses Percent
Female	93.2	95.4
Male	6.8	4.6
Total	100.0	100.0

Note: percentages may not add to 100 due to rounding

This lack of diversity extends to ethnic identification. Ethnic identification and language capabilities have been identified as important aspects of quality health care delivery. Table 1.4 demonstrates that few members of the nursing community identify themselves as being from a minority group. When comparing the two populations there is greater diversity within the Licensed Practical Nurses than the Registered Nurses. For purposes of the summary, Hispanics can belong to multiple racial categories.

Table 1.4  
Percentage of Registered Nurses (2010) and Licensed Practical Nurse (2011) by Ethnic  
Identity

	Registered Nurses Percent	Licensed Practical Nurses Percent
Black/African American	2.1	6.0
Hispanic	1.2	1.7
Other	2.0	4.1
White	94.7	88.1

The second language capabilities of registered nurses and licensed practical nurses reflect the limited diversity in the nursing populations.<sup>6</sup> While the number of nurses speaking a language other than English is small, in the nursing population as a whole a

<sup>5</sup> As the U.S. population continues to become increasingly diverse, the health care system faces new challenges and opportunities in its efforts to better serve the needs of its changing population. Findings from several recent reports on the impact of racial and ethnic disparities call for strategies to bring about greater equity in health care services. taken from America's Health Insurance Plans website (<http://www.ahip.org/content/default.aspx?bc=38|10760>)

<sup>6</sup> The Registered Nurses were asked, "Other than English are you proficient in the use of another language?" The Licensed Practical Nurses were asked, "If they were able to read, understand and speak a language other than English."

wide range of languages are spoken. In each population, over 40 separate languages are spoken. Table 1.5 summarizes the second language capabilities of licensed Registered Nurses and Licensed Practical Nurses.

Table 1.5

Second Language Capabilities Registered Nurse (2010) and Licensed Practical Nurse (2011)

	Registered Nurses Percent	Licensed Practical Nurses Percent
No other language	94.8	95.2
Spanish	2.0	2.1
Other	1.6	1.3
Filipino/Tagalog	0.6	0.3
German	0.5	0.6
French	0.4	0.3
Hmong, Miao	0.2	0.2

## Education

Education and ongoing training are critical metrics for the ability of the present nurse populations to provide quality health care in a wide range of setting and situations. Table 1.6 reports the highest educational level attained for the Registered Nurses and Licensed Practical Nurses in Wisconsin. The largest portion of Registered Nurses have a bachelor's degree, 42.9%, while 48.2% have a diploma, and do not have a degree in nursing. The largest portion of Licensed Practical Nurses have an Licensed Practical Nurse diploma, 93.9%. Registered Nurses and Licensed Practical Nurses who do not possess a Bachelors or higher level of education would likely need to be "grandfathered in" should there be a push to require a Bachelors Degree. Failure to accommodate these individuals could exacerbate the number of available Registered Nurses.

Table 1.6

Distribution of Highest Education Level in Nursing by Registered Nurses (2010) and Licensed Practical Nurses (2011) by Percent

	Registered Nurses Percent	Licensed Practical Nurses Percent
LPN Diploma	Not Available	93.9
Nursing Diploma	12.0	3.0
Associate	36.2	3.1
Bachelor	42.9	0.1
Master	8.6	0.0
PhD	0.4	0.0

There are a number of Registered Nurses who reported they are certified as Advanced Practice Nurses. The requirement for this classification includes at least a Master's degree in Nursing unless they have been "grandfathered in." In the 2010 survey, 5,110

Registered Nurses identified themselves as being classified as being Advanced Practice Nurses.<sup>7</sup>

### **Chapter Summary**

The characteristics of the nurses in general point toward divergent trends. Registered Nurses have higher levels of education while the Licensed Practical Nurses are less educated and older. However, as a group, Licensed Practical Nurses are more racially diverse than the Registered Nurses.

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<sup>7</sup> For various technical reasons in the survey application, not all Advanced Practice Nurses were identified in the survey. There is reason to believe the sample captured does not reflect the population of advanced practice nurses, under representing two small groups, those who are certified in Midwifery and those grandfathered in without the present educational requirements.



## Chapter 2 Demographic Characteristics of the Registered Nurse and Licensed Practical Nurse Workforce

The first critical aspect of understanding the available supply of nurses is to review the demographic data in relation to the positions and functions filled by the two nursing groups. Not all nurses who undertake licensure work in the State of Wisconsin. A considerable portion of the nurses licensed see the license as an assurance they can seek work in Wisconsin and/or can continue to provide service in volunteer situations. The extent to which these individuals are in or can be enticed to return to the nurse workforce in Wisconsin is an area for additional analysis of the data.

### Registered Nurses

Based on the responses of Registered Nurses, over 95% of responding Registered Nurse licensed in Wisconsin were working or seeking work. The questionnaire asked the Registered Nurses to report their work history and if they were seeking work during the previous year (2009). Tables 2.1 and 2.2 characterize the work status of the Registered Nurses who responded.

Table 2.1  
Summary of Registered Nurses Work Status for 2009

	Number	Percent
Working	69,151	89.2
Retired	3,774	4.9
Seeking work in health care	1,226	1.6
Total	74,151	100.0

As Table 2.2 shows, the largest portion of the Registered Nurses who are licensed in Wisconsin, provide direct patient care (DPC) in Wisconsin, 75.9%. For those Registered Nurses providing DPC, 91.0% are working in Wisconsin. In comparison, 21.4% of Wisconsin licensed Registered Nurses work out-of-state, 7.5% providing DPC and 13.9% not providing DPC. It should be noted that while DPC is a focus of nursing care, not all future graduates from nursing programs should be expected to provide DPC. Opportunities outside of DPC and indeed nursing may reduce the future supply of nurses who provide DPC. Further research into the circumstances and motivations of Registered Nurses working outside of DPC, both within and outside of the state, would add value when evaluating policy considerations in the health care delivery industry.

Table 2.2  
Registered Nurses by Provision of DPC in Principal Place of Work

Providing DPC		Percent
	In Wisconsin	75.9
	Outside of Wisconsin	7.5
Not Providing DPC		
	In Wisconsin	2.7
	Outside of Wisconsin	13.9
TOTAL		100.0

Table 2.3 provides data on age of Wisconsin licensed Registered Nurses providing DPC within Wisconsin compared to all other working (Wisconsin) Registered Nurses. In each age category up to 44 years of age there is a larger percentage of the Registered Nurse providing DPC than in those providing DPC outside of Wisconsin. For those who are 45 years and older, the relationship flips and Registered Nurse working outside of Wisconsin in DPC represent a higher percentage of Registered Nurses than those working in Wisconsin.

Table 2.3  
Percentage Distribution of Age of Registered Nurses Providing Direct Patient Care in Wisconsin and Other Locations

Age Range	DPC Providers in Wisconsin Percent	DPC Providers Outside Wisconsin Percent
less than 25	3.6	2.0
25-29	11.4	10.0
30-34	11.1	9.5
35-39	11.4	9.5
40-44	10.9	10.6
45-49	13.7	14.2
50-54	15.1	17.2
55-59	13.0	16.0
60-64	6.7	7.8
65-69	2.1	2.5
70-74	0.7	0.7
75 and older	0.2	0.1
Total	100.0	100.0

Table 2.4 presents the highest level of education in nursing obtained by Wisconsin licensed Registered Nurse separated into two groups reflecting the location where the DPC is delivered. Those Registered Nurses providing DPC outside of Wisconsin have, on average, higher educational attainment than those in Wisconsin. Registered Nurses providing DPC in Wisconsin with a master's degree or a doctorate in nursing constitute 7.1% of those providing DPC, while 12.4% of all Wisconsin licensed nurses providing DPC outside of Wisconsin have advanced degrees.



Table 2.4  
Percentage of Highest Nursing Degree Earned by Registered Nurses by Location

Highest Degree Earned	DPC Providers in Wisconsin Percent	DPC Providers Outside Wisconsin Percent
Nursing Diploma	9.5	10.0
Associate	40.2	36.0
Bachelor	43.1	41.6
Master	7.0	11.9
PhD	0.1	0.5
Total	100.0	100.0

Advanced practice nurses (APN), requiring higher education and/or certification requirements than other registered nurses, represent only 6.3% of DPC nurses in Wisconsin as compared to 11.8% working out of state among Wisconsin licensed Registered Nurses.

Registered Nurses licensed to work in Wisconsin and providing DPC outside of the State are older, have more education and are more likely to have Advanced Practice Nursing certification. These findings suggest the need to address career development when addressing future workforce development for nurses.

### **Registered Nurses Not Providing Direct Patient Care in Wisconsin**

The perception that all Registered Nurses provide DPC is known to be an overgeneralization; it is an open question whether those Registered Nurses who report they do not provide DPC differ from those who do. Because the survey identified the type of tasks Registered Nurses do, such a comparison will help policy makers and others make informed decisions when addressing the business needs for Registered Nurses.

A comparison of the age of Wisconsin licensed DPC providers in Wisconsin and those who do not provide DPC in Wisconsin highlights the importance of recognizing factors reducing the percentage of new entrant nurses likely to be employed in DPC. Table 2.5 summarizes the age distribution of DPC providers in Wisconsin compared to all other working Registered Nurses in the survey. Among DPC providers 3.6% of nurses are younger than 25 years of age, while for the remaining Registered Nurse population only 0.2%, or 1 in 500 other nurses are younger than 25. DPC providers in the age categories from 45 to 64 years of age represent 48.5% of the DPC providers, compared to 70.2% of non Wisconsin based DPC providers. This comparison suggests it may be difficult to attract working Registered Nurses to the provision of DPC in Wisconsin.

Table 2.5  
 Percentage Distribution of DPC Providers Compared to Non-DPC Providers Registered  
 Nurses by Age In Wisconsin

Age Range	DPC Providers Percent	Non-DPC Providers Percent
less than 25	3.6	0.2
25-29	11.4	2.1
30-34	11.0	4.4
35-39	11.4	7.6
40-44	10.9	9.2
45-49	13.7	16.4
50-54	15.1	20.4
55-59	13.0	21.6
60-64	6.7	11.8
65-69	2.1	4.4
70-74	0.7	1.4
75 and older	0.2	0.6
Total	100.0	100.0

This comparison suggests the relatively older age of nurses compared to the general population may not have as great an impact on the nurses who provide DPC. The median age of DPC providers is 45 years of age and Non-DPC nurses have a median age of 52. This suggests a large portion of nurses who presently provide DPC are likely to take other positions in their career as they gain experience and education. Table 2.6 offers some confirmation of career migration out of DPC by presenting the highest level of education achieved by DPC nurses and the remainder of the nursing population. A comparison of formal educational training for Wisconsin licensed DPC providers and Wisconsin Licensed non-DPC providers shows non-DPC providers with more formal educational background with 17.9% holding a master's degree or a doctoral degree in Nursing while only 7.1% of Wisconsin DPC providers have this level of formal education.

Table 2.6  
 Highest Level of Nursing Degree for DPC Providers Compared to Other Registered  
 Nurses in Wisconsin Workforce (Percent)

	DPC Providers Percent	Non-DPC Providers Percent
Nursing Diploma	9.5	12.2
Associate	40.2	25.1
Bachelor	43.1	44.8
Master	7.0	16.3
PhD	0.1	1.6
Total	100.0	100.0

When taken as a whole, these findings suggest that those Registered Nurses who work out of the state are doing different work than those who are in the state. Also, as Registered Nurses age they are less likely to provide DPC in Wisconsin. Consequently, this could affect not only the ability to successfully recruit those Registered Nurses who

are licensed in Wisconsin to return to DPC, but also what tasks these Registered Nurses would be interested in performing if recruitment is successful.

Table 2.7 shows 4.7% of the Registered Nurses working in DPC, plan on leaving DPC in the next two years and 17.8% plan to no longer provide DPC within four years.

Table 2.7  
Percentage of Anticipated Years of Providing DPC by Registered Nurses

Future Work Plans (Years)	DPC Providers in Wisconsin Percent
Less than 2	4.7
2 – 4	13.1
5 - 9	18.7
10 or more	63.5
Total	100.0

### Licensed Practical Nurses

Table 2.8  
Summary of Licensed Practical Nurses Work Status for 2010

	Number	Percent
Working	11,436	80.7
Retired	970	6.8
Seeking work in health care	836	5.9
Total	13,242	100.0

The majority of Licensed Practical Nurses (80.7%) are working. In addition, another 5.9% are seeking work in the health care industry and 6.8% are retired.

### Licensed Practical Nurses Providing Direct Patient Care

The Licensed Practical Nurse population shows a focus on DPC similar to that observed in the Registered Nurses but with smaller proportions of Licensed Practical Nurses working in other settings. Table 2.9 summarizes the principal location of work, either within Wisconsin or outside the state and if the Licensed Practical Nurse is providing DPC.

Table 2.9  
Licensed Practical Nurses Providing Direct Patient Care by Principal Type of Work

		LPN providing DPC
Providing DPC	In Wisconsin	82.4
	Outside of Wisconsin	4.6
Not Providing DPC	In Wisconsin	12.0
	Outside of Wisconsin	1.0
Total		100.0

For Licensed Practical Nurses, the percentage of workers providing DPC in Wisconsin (82.4%) is higher than for Registered Nurses (75.9%). In addition, the percentage of nurses working outside of the state is much lower, 4.6% in DPC and 1.0% in non-DPC positions. This is much lower than the 21.4% of Registered Nurses working out of the State (DPC and non-DPC combined). Given the small percentage of Licensed Practical Nurses working outside of the state, the analysis of the Licensed Practical Nurses characteristics will focus on those nurses working in Wisconsin but not providing DPC.

Table 2.10  
Percentage of Licensed Practical Nurse Direct Patient Care by Age

Age Range	DPC Percent	Non-DPC Percent
less than 25	2.2	0.7
25-29	8.3	2.7
30-34	9.2	5.2
35-39	8.6	5.5
40-44	9.0	7.5
45-49	10.3	11.3
50-54	14.4	19.1
55-59	18.9	25.7
60-64	12.9	16.1
65-69	4.5	4.5
70-74	1.3	1.5
75 and older	0.5	0.4
Total	100.0	100.0

Table 2.10 shows the distribution of age for DPC and non-DPC providers for Licensed Practical Nurses. Licensed Practical Nurses under the age of 25 providing DPC in Wisconsin represent 2.2% of the Licensed Practical Nurses in Wisconsin; compared to 0.7% of non-DPC Licensed Practical Nurses, or 3 in 500, are under 25 years of age. The percentage of DPC providers is higher for every age range than the non-DPC population in every age group under age 45. While this disparity is not as great as seen in the Registered Nurse population, the consistency of the difference in proportional age

distribution supports the likely migration of Licensed Practical Nurse out of DPC in Wisconsin. The median age for Licensed Practical Nurses who provide DPC is 50 as compared to 54 for those Licensed Practical Nurses who do not provide DPC.

Table 2.11 offers a comparison of educational background of Wisconsin's DPC Licensed Practical Nurses to the Non-DPC Licensed Practical Nurse workforce. The general relationship of highest level of education outside of DPC seen in the Registered Nurse information does not exist in the Licensed Practical Nurse. In the DPC workforce 92.5% of nurses have a Practical Nursing diploma while 95.0% of the non-DPC workforce has a Practical Nursing diploma.

Table 2.11  
Comparison of Wisconsin Based DPC Providers Educational Background to Other Licensed Non-DPC Providers

	DPC Providers Percent	Non-DPC Providers Percent
Non-US Practical Nursing	0.9	1.0
Practical Nursing Diploma	92.5	95.0
Nursing Diploma	3.1	1.9
Associate	3.5	2.0
Bachelor	0.0	0.1
Master	0.0	0.0
PhD	0.0	0.0
Total	100.0	100.0

Table 2.12 provides a summary of future work plans for both the DPC providers in Wisconsin and non-DPC providers in the state. For DPC providers 15.3% are contemplating leaving the Licensed Practical Nurse workforce in less than two years, while the comparable number for non-DPC providers is 17.1%. A more substantial difference exists between DPC providers and non-DPC providers for plans to remain in their careers for five or more years. While 61.1% of DPC providers anticipate remaining in their careers five or more years, a larger percentage, 65.8%, of non-DPC anticipate remaining in their career for five or more years.

Table 2.12  
 Future Plans of Licensed Practical Nurses to Leave Nursing for Wisconsin and Out of  
 State Providers of DPC (Percent)

	In State DPC Providers Percent	Out of State DPC Providers Percent
< 2 years	15.3	17.1
2-4 years	23.6	17.1
5-9 years	20.8	23.0
10 or more years	40.3	42.8
Total	100.0	100.0

### Chapter Summary

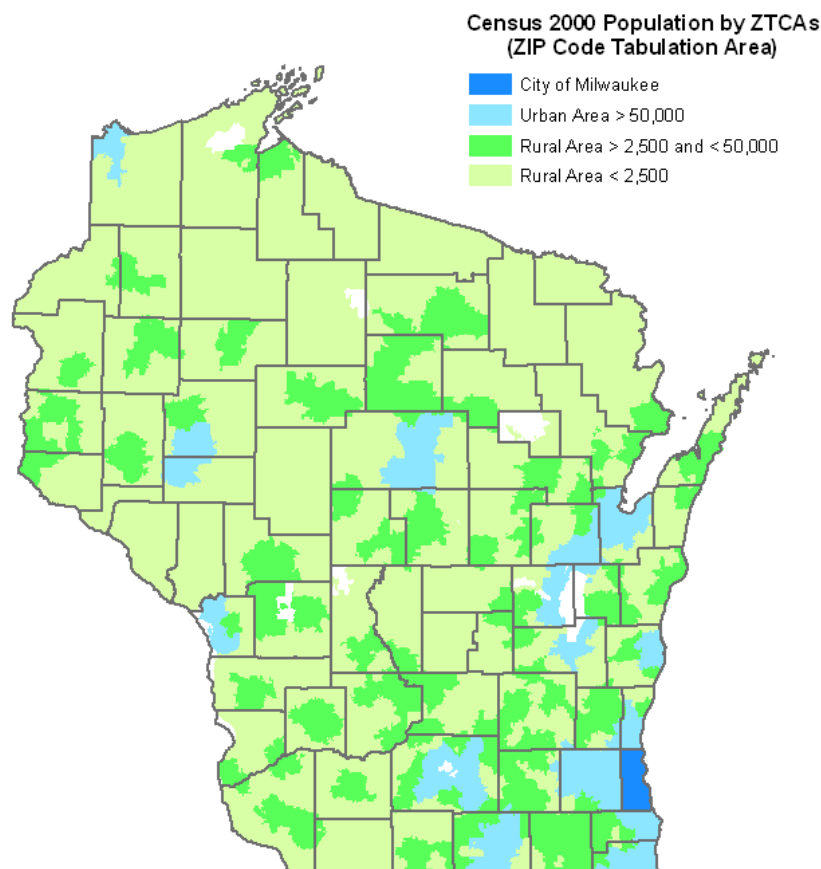
The Registered Nurses report they envision themselves providing direct care much longer than the Licensed Practical Nurses. Part of this could be due to age because as a group Registered Nurses are younger. The percentage of Licensed Practical Nurses looking for other opportunities in the Health Care industry is notably higher than the percentage of Registered Nurses.

There is a consistent pattern for Registered Nurses and Licensed Practical Nurses to migrate from DPC work in Wisconsin to either out of state provision or work outside of DPC. The underlying reasons for this migration are not clear and warrant further investigation. One of the reasons why Registered Nurses are more mobile than Licensed Practical Nurses is a difference in skill sets and financial resources. The Registered Nurse response suggests studies that focus on supply should recognize the potential for “leakage” as one in four nursing graduates are likely to move out of DPC at some point in their career.

## Chapter 3 Regional Distribution of Nurses

The population in Wisconsin is focused along Lake Michigan and the Southeast area of the state. Nursing care in the state needs to take into account the distribution of the population, as it can be argued that rural areas require health care professionals to possess different skill sets when compared to urban areas. The following map (Map 3.1) identifies the areas of the state based on population characteristics. The map displays a colored map showing the distribution of the four categories for the entire State of Wisconsin.

### Areas for Analysis of Registered Nurses and Licensed Practical Nurses\*



*\*Based on original work of Area Health Education Center (AHEC) System, used with permission.  
Final groupings by Labor Market Information, Wisconsin Department of Workforce Development, June 2011*

The information in this chapter is highly dependent on a classification of delivery areas developed by the Area Health Education Center (AHEC). The AHEC process classified each populated zip code area in Wisconsin based on 2000 U.S. Census data for population. Nine unique groupings were created. For the purposes of this report, these groupings are consolidated into four classifications. The first area can be generally described as the Greater Milwaukee area, the second, suburban areas or intermediate sized cities, the third area includes small cities and associated rural areas where no city in the county is greater than 10,000 in population and the remaining county areas have no city or village greater than 2,500 in population. An analysis of the geographic distribution of the two nursing professions provides insight into the delivery of health care services within Wisconsin. Using the AHEC assignment of communities at the zip code level it is possible to demonstrate differences in a number of factors characterizing Registered Nurse and Licensed Practical Nurse populations. A more detailed description is included in the Technical Notes section of the Appendix.

In the following analysis, the four AHEC groupings frame differences and similarities in age, work settings, income and plans for future nursing employment of Registered Nurses and Licensed Practical Nurses. Using this method, the health care delivery areas have been defined into four areas and are collectively referred to as Areas.

When reviewing health care by the location of the general population density, there are four distinct areas in the state. The following table reports the number of nurses who work in the respective areas.

Table 3.1  
Summary of Distribution of Registered Nurse and Licensed Practical Nurse Nurses by Area

	Milwaukee Greater Area		Other Urban Areas in WI		Rural Areas above 2,500		Rural Areas below 2,500	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
RNs								
DPC	11,655	19.0	25,598	41.7	11,078	18.0	3,066	5.0
Non-DPC	2,446	4.0	5,189	8.5	1,741	2.8	10,009	16.3
Total	14,101	23.0	30,787	50.1	12,819	20.9	3,699	6.0
LPNs								
DPC	1,484	15.7	4,260	45.2	2,512	26.7	1,105	11.7
Non-DPC	9	0.1	28	0.3	14	0.2	15	0.2
Total	1,493	15.8	4,288	45.5	2,526	26.8	1,120	11.9

Combined, the urban areas of the state account for 60.7% of the direct care Registered Nurses (19.0% in the City of Milwaukee and 41.7% in other urban areas) and 73.1% of the total Registered Nurses (23.0% in Milwaukee and 50.1% in other urban areas). The percentage of Licensed Practical Nurses providing direct care in urban areas is nearly identical at 60.9%, with 15.7% in Milwaukee and 45.2% in other urban areas. However, a much higher percentage of Licensed Practical Nurses provide DPC in rural areas, 26.7% and 11.7% for the two rural groupings compared to 18.0% and 5.0% for Registered Nurses, respectively.

Table 3.2 summarizes age characteristics of the Registered Nurse and Licensed Practical Nurse population in each of the four areas. In summary, the Licensed Practical



Nurses are evenly distributed among the areas, while the more rural the area the older the population of Registered Nurses.

Table 3.2  
Age Distribution by Area for Registered Nurses and Licensed Practical Nurses

	Milwaukee Greater Area Percent		Other Urban Areas in WI Percent		Rural Areas above 2,500 Percent		Rural Areas below 2,500 Percent	
	45	51	46	52	47	51	49	51
Median Age	45	51	46	52	47	51	49	51
Age Range	RN	LPN	RN	LPN	RN	LPN	RN	LPN
less than 25	1.0	0.1	1.4	1.0	0.5	0.7	0.2	0.3
25-29	2.8	0.9	5.3	3.7	1.6	2.2	0.3	0.9
30-34	2.5	1.3	5.1	4.1	2.0	2.4	0.4	0.9
35-39	2.4	1.5	5.5	3.6	2.3	2.4	0.6	0.8
40-44	2.2	1.6	5.5	4.0	2.3	2.1	0.6	1.2
45-49	3.0	1.9	7.1	4.5	3.1	2.9	0.9	1.2
50-54	3.6	2.5	7.9	6.6	3.4	4.0	1.1	1.9
55-59	3.2	3.0	7.0	9.4	3.1	5.2	1.0	2.1
60-64	1.6	2.2	3.7	6.3	1.6	3.3	0.6	1.4
65-69	0.5	0.8	1.2	2.2	0.6	1.0	0.2	0.5
70-74	0.2	0.2	0.4	0.5	0.2	0.4	0.1	0.2
75 and older	0.1	0.1	0.1	0.3	0.1	0.1	0.0	0.0
Total for Area	23.1	16.1	50.2	46.2	20.8	26.7	6.0	11.4

Table 3.3 highlights the differences in the percentage of the Registered Nurse population working in differing work settings. The seven work setting categories are compilations of 31 work settings included in the 2010 Registered Nurse survey. The summary work settings were designated by subject matter experts. While the distribution of settings is reasonably consistent across the community types for most work settings, the differences in hospital settings and nursing homes and extended care facilities are striking. The greater density of Registered Nurse working in the City of Milwaukee in hospital settings, (63.5%) nearly doubles the percentage of nurses in the most rural areas working in hospital settings (32.7%). Ambulatory care, a grouping containing clinic and other physician offices, is consistent in each of the community settings, ranging from allow of 13.7% to 17.9%.

Table 3.3  
Distribution of Registered Nurse Work Settings by Area

	Milwaukee Greater Area Percent	Other Urban Areas in WI Percent	Rural Areas above 2,500 Percent	Rural Areas below 2,500 Percent
Academic Education	0.7	0.8	0.7	0.6
Ambulatory Care	13.7	17.9	14.4	14.7
Home Health	3.8	3.7	4.8	5.8
Hospital	63.5	54.4	50.0	32.7
Nursing Home/Extended Care	6.7	9.7	16.3	30.3
Public/Community Health	2.9	3.8	5.2	7.8
Other	8.6	9.7	8.5	8.0
Total	100.0	100.0	100.0	100.0

Table 3.4 contains analogous information for the Licensed Practical Nurse profession, with the exception that no data on academic education employment was collected. The data primarily demonstrates a shift in the Licensed Practical Nurse profession to service in the nursing home and extended care work setting in all geographic settings, though again the rural areas have a greater percentage of Licensed Practical Nurses working in these settings. In the most rural areas 64.7%, nearly two out of three, Licensed Practical Nurse work in nursing homes or extended care facilities while in suburban areas and cities outside of Milwaukee only 37.5% of Licensed Practical Nurse work in nursing home or extended care facilities.

Table 3.4  
Distribution of Licensed Practical Nurse Work Settings by Area

	Milwaukee Greater Area Percent	Other Urban Areas in WI Percent	Rural Areas above 2,500 Percent	Rural Areas below 2,500 Percent
Ambulatory Care	11.6	27.9	19.7	13.5
Home Health	6.9	6.1	4.6	5.8
Hospital	10.9	10.2	8.1	5.0
Nursing Home/Extended Care	57.3	37.5	51.0	64.7
Public/Community Health	5.2	4.5	2.6	3.0
Other	8.1	13.7	13.9	7.9
Total	100.0	100.0	100.0	100.0

Table 3.5 presents a cumulative percent summary of Registered Nurses income by area. The table shows 45.7% of all Registered Nurses working in the most rural areas have an annual income of less than \$45,000 while only 36.3% of urban nurses earn less than \$45,000.

Table 3.5  
Registered Nurse Income Distribution by Area  
(Cumulative percent)

Income	Milwaukee Greater Area Percent	Other Urban Areas in WI Percent	Rural Areas above 2,500 Percent	Rural Areas below 2,500 Percent
\$10,000 or less	4.9	5.2	5.5	6.9
\$10,001 to \$15,000	6.7	7.2	7.8	9.7
\$15,001 to \$20,000	9.4	9.7	10.4	14.0
\$20,001 to \$25,000	12.5	12.8	14.2	18.0
\$25,001 to \$30,000	16.7	17.1	18.5	23.9
\$30,001 to \$35,000	21.1	22.3	23.7	29.6
\$35,001 to \$40,000	28.6	29.7	32.3	36.9
\$40,001 to \$45,000	36.3	38.1	41.8	45.7
\$45,001 to \$50,000	47.8	49.5	53.9	57.6
\$50,001 to \$55,000	57.8	59.3	64.6	67.3
\$55,001 to \$60,000	69.0	70.3	75.3	77.1
\$60,001 to \$65,000	77.0	79.0	82.5	83.4
\$70,001 to \$75,000	82.9	84.4	87.0	86.7
\$75,001 to \$80,000	88.1	88.7	90.8	90.1
\$80,001 to \$85,000	91.7	91.4	92.9	92.3
\$85,001 to \$90,000	94.3	93.7	94.4	94.0
\$90,001 to \$95,000	95.7	94.9	95.2	94.9
\$95,001 to \$100,000	97.0	96.0	95.9	95.6
Total	100.0	100.0	100.0	100.0

**Note: Income is self-reported and does not reflect information from other sources, notably the Bureau of Labor Statistics who uses a sample methodology and collects the information from employers.**

Table 3.6 presents similar data for the Licensed Practical Nurse profession. In the Licensed Practical Nurse profession the differences in annual earnings is dramatically less across the areas categories compared to Registered Nurses. Using the same cumulative income category as in the Registered Nurse comparison, 88.3% of Licensed Practical Nurse in the most rural area earns less than \$45,000 compared to 89.1% of Licensed Practical Nurse working in Milwaukee. A simple explanation of the lack of difference in earnings is the underlying distribution of work settings across the service area population groupings.

Table 3.6  
Licensed Practical Nurse Income Distribution by Area  
(Cumulative percent)

	Milwaukee Greater Area Percent	Other Urban Areas in WI Percent	Rural Areas above 2,500 Percent	Rural Areas below 2,500 Percent
\$10,000 or less	7.3	7.6	8.8	7.2
\$10,001 to \$15,000	12.2	13.7	16.0	12.4
\$15,001 to \$20,000	18.7	21.8	21.9	19.1
\$20,001 to \$25,000	30.8	33.9	36.6	30.4
\$25,001 to \$30,000	46.3	50.0	52.0	45.2
\$30,001 to \$35,000	64.1	66.9	71.1	62.2
\$35,001 to \$40,000	78.5	82.6	84.3	76.9
\$40,001 to \$45,000	89.1	91.5	92.0	87.3
\$45,001 to \$50,000	94.4	96.6	95.8	93.4
\$50,001 to \$55,000	97.1	98.3	98.0	96.8
\$55,001 to \$60,000	98.5	99.2	98.9	98.2
\$60,001 to \$65,000	99.2	99.6	99.8	99.1
\$65,001 to \$70,000	99.6	99.8	99.9	99.6
More than \$70,000	100.0	100.0	100.0	100.0

**Note: Income is self-reported and does not reflect information from other sources, notably the Bureau of Labor Statistics who uses a sample methodology and collects the information from employers.**

Information on future expectations of remaining in nursing positions was gathered for both Registered Nurse and Licensed Practical Nurse populations. The Registered Nurse population was asked how much longer they planned to work providing DPC in Wisconsin. Table 3.7 summarizes the responses by area.

Table 3.7  
Registered Nurses' Expectation of Remaining in DPC by Area

	Milwaukee Greater Area Percent	Other Urban Areas in WI Percent	Rural Areas above 2,500 Percent	Rural Areas below 2,500 Percent
Less than 2 years	5.2	4.8	4.5	5.6
2 - 4 years	14.5	13.0	13.0	14.1
5 - 9 years	19.7	18.7	18.1	19.4
10 or more years	60.7	63.6	64.4	61.0
Total	100.0	100.0	100.0	100.0

Respondents in the City of Milwaukee and the most rural areas indicated the greatest likelihood of leaving DPC in the next two years, 5.2% and 5.6% respectively. These differences are not sufficient to anticipate differential attrition rates among the geographic areas.

Table 3.8  
Future Work Expectations of Licensed Practical Nurse by Area by Percent

Additional years of Work	Milwaukee Greater Area Percent	Other Urban Areas in WI Percent	Rural Areas above 2,500 Percent	Rural Areas below 2,500 Percent
< 2 years	14.9	15.0	16.7	15.6
2-4 years	27.5	23.2	20.1	21.0
5-9 years	21.5	21.4	20.7	20.4
10 or more years	36.1	40.4	42.4	43.1
Total	100.0	100.0	100.0	100.0

Comparing the future work expectations for Licensed Practical Nurses by Area reveals that as a group less they are less likely to remain working in the field of nursing than Registered Nurses. These differences do not appear to be geographically based, though rural classifications show a higher anticipated likelihood of departures in the next two years. Most striking is the much lower number of Licensed Practical Nurses anticipating working for ten or more years when compared to the Registered Nurses. This could indicate a belief that the Licensed Practical Nurses as a profession is becoming obsolete. Interestingly, the more urban the area, the greater the likelihood of Licensed Practical Nurses stating they will not be working in this occupation.

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The findings also show that younger Registered Nurses are generally in urban areas. This suggests that the service delivery model for rural areas may be different from urban areas. If true, these differences could indicate that each area of the state has different health care needs depending on the population served. In light of these differences between geographies areas of the state more likely to experience, an onset of a nursing shortage can be identified. For example, home health care and outreach services may better serve rural populations however, these services may require a general skill set that enables the nurse to work with the population at large, while more intensive health care services, which require more specific skills, are focused in urban areas.

Policy proposals for managing adequacy of nursing supply should address the two professions separately, recognizing the dynamics in each profession and the larger evolution of health care delivery in urban and rural areas. The shortage of nurses is a chronic issue and as such, larger systemic issues need to be considered when developing possible solutions. The information on age distributions for the Registered Nurses versus the Licensed Practical Nurses highlights the differences in age distribution variations in urban versus rural areas for registered nurses and the lack of meaningful variations across urban and rural areas for Licensed Practical Nurses. While plans of the members of the two professions indicate Licensed Practical Nurses expect to leave DPC considerably sooner than Registered Nurses, there are no indications of the need to address regional differences. Age differences among Registered Nurses suggest the need to address future supply of Registered Nurses working in DPC in a manner recognizing differences in age distribution between urban and rural areas. The age distribution also suggests that efforts to “upgrade” skill sets of Licensed Practical Nurses so they can become Registered Nurses is likely to have only limited success

when addressing the shortage of Registered Nurses. State Statute 106.30 anticipated the need for more detailed evaluation of the underlying factors in the availability of nurses and provided funds for the Wisconsin Center for Nursing to coordinate the public discussion. The Center has access to the full data set from this survey to guide the public discussion.

## Chapter 4 Analysis of Work Setting and Specialization Considerations

Table 4.1 summarizes the cumulative percentage of Registered Nurses with reported incomes up to the indicated values from their principal place of work. For instance, 10.7% of Registered Nurses working reported in the Home Health care category earned less than \$15,000 during the year 2009 compared to 3.3% for Registered Nurses working in hospital settings. The larger cumulative percentage of home health care workers at each of the income levels demonstrates that registered nurses in home health care consistently earn less than registered nurses working in hospital settings.

Table 4.1  
Cumulative Percentage of Income of Registered Nurses by Work Setting

	Academic Education Percent	Ambulatory Care Percent	Home Health Percent	Hospital Percent	Nursing Home Extended Care Percent	Public Health Percent	Other Percent
\$10,000 or less	5.6	3.0	7.4	1.8	6.1	9.4	5.8
\$10,001 to \$15,000	8.8	4.7	10.7	3.3	9.7	11.9	8.4
\$15,001 to \$20,000	12.3	6.9	16.0	5.4	14.4	15.3	11.7
\$20,001 to \$25,000	15.2	10.2	20.8	8.3	19.3	20.1	15.0
\$25,001 to \$30,000	19.6	15.2	26.5	12.3	24.8	25.0	20.1
\$30,001 to \$35,000	22.2	21.2	32.6	16.7	30.8	31.8	26.5
\$35,001 to \$40,000	25.5	30.4	40.5	24.3	39.2	38.7	34.7
\$40,001 to \$45,000	29.3	40.0	48.6	33.1	47.6	47.3	44.5
\$45,001 to \$50,000	39.2	53.0	59.2	45.3	58.9	57.7	55.6
\$50,001 to \$55,000	49.4	62.9	68.5	55.7	69.4	70.2	65.9
\$55,001 to \$60,000	60.0	73.3	79.0	67.7	80.8	80.9	75.5
\$60,001 to \$65,000	65.8	80.6	87.0	76.8	89.5	87.4	82.5
\$70,001 to \$75,000	74.9	85.6	90.8	82.9	93.1	91.5	86.8
\$75,001 to \$80,000	85.4	90.0	94.0	88.2	95.7	95.0	90.8
\$80,001 to \$85,000	88.9	93.4	95.8	91.2	97.3	96.6	93.6
\$85,001 to \$90,000	92.7	96.1	97.2	93.9	98.3	97.6	95.3
\$90,001 to \$95,000	95.6	97.2	97.8	95.3	98.9	98.6	96.3
\$95,001 to \$100,000	96.5	98.3	98.9	96.6	99.5	99.2	97.2
Over \$100,000	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Note: Income is self-reported and does not reflect information from other sources, notably the Bureau of Labor Statistics who uses a sample methodology and collects the information from employers.**

A similar summary of income by work setting for Licensed Practical Nurses is presented in Table 4.2

Table 4.2  
Cumulative Percentage of Income of Licensed Practical Nurses by Work Setting

	Ambulatory Care Percent	Home Health Percent	Hospital Percent	Nursing Home Extended Care Percent	Public Health Percent	Other Percent
\$10,000 or less	1.7	9.3	2.4	3.2	4.0	2.4
\$10,001 to \$15,000	3.5	17.5	5.7	8.2	10.0	5.7
\$15,001 to \$20,000	8.7	26.1	12.9	14.6	22.5	10.5
\$20,001 to \$25,000	22.7	37.2	25.5	24.5	35.0	25.1
\$25,001 to \$30,000	42.8	50.9	39.6	36.9	55.3	45.1
\$30,001 to \$35,000	64.9	64.6	55.9	54.3	69.6	63.6
\$35,001 to \$40,000	82.0	74.8	71.9	70.3	80.2	80.2
\$40,001 to \$45,000	93.2	82.8	83.1	83.3	87.8	88.7
\$45,001 to \$50,000	97.4	90.3	91.5	91.0	93.6	93.4
\$50,001 to \$55,000	99.0	94.0	95.1	95.7	96.4	96.9
\$55,001 to \$60,000	99.4	95.4	96.9	97.9	98.8	98.3
\$60,001 to \$65,000	99.7	97.4	98.8	98.9	99.4	99.0
\$65,001 to \$70,000	99.9	98.5	99.4	99.5	99.7	99.6
More than \$70,000	100.0	100.0	100.0	100.0	100.0	100.0

**Note: Income is self-reported and does not reflect information from other sources, notably the Bureau of Labor Statistics who uses a sample methodology and collects the information from employers.**

As Table 4.2 shows, 9.3% of Licensed Practical Nurse working in Home Health earn less than \$10,000 per year from their principal place of work. No other category has a larger percentage of its workers earning less than \$10,000. Ambulatory care and hospital settings have the smallest percentage of Licensed Practical Nurse earning less than \$10,000.<sup>8</sup> Given the differences in the distribution of Licensed Practical Nurse populations for wage categories, income levels differences observed in geographic analyses should consider the influence of the distribution of types of institutions on wage differentials.

### Advance Practice Nurses

The analysis of survey returns from Advanced Practice Nurses in the 2010 Registered Nurse Survey provides the opportunity to look at the issues raised by specialization within the registered nurse profession. Wisconsin Chapter N 8 of the Board of Nursing offers both a definition of advanced practice nurse (APN) and the certification of a specific subset of advanced practice nurses, the advanced practice nurse prescriber (APNP). The definitions require the advanced practice nurse: 1) have a current license to practice in Wisconsin or another state covered by a licensure compact; 2) hold a certification as a nurse-midwife, certified nurse anesthetist, or a clinical nurse specialist and; 3) hold a master's degree in nursing or a related health field. Advance Practice Nurses receiving certification in any of the fields listed prior to July 1, 1998 are not

<sup>8</sup> The data reported may provide insight into the income range for the profession as a whole and the implications of career advancement when considering policy alternatives. Small populations at the extremes of distributions should not be assumed to be accurate without confirming information.



required to hold a master’s degree. An APNP must meet the criteria for an APN plus have at least 45 contract hours in clinical pharmacology/therapeutics and have passed a jurisprudence examination for APNPs.

The survey asks all respondents with a Master’s degree, “are you an educationally-prepared APN.” Of the respondents, 6.8% or 5,110 nurses indicated they were educationally prepared APNs. These respondents represent a pool of existing and potential APN. The survey also asked if the respondent was currently working in a role requiring APN certification. Of the survey population, 4.9% or 3,802 responded “yes.” In the analysis that follows the responses of the 3,700 nurses indicating both being educationally-prepared and currently working as APN roles are analyzed. The analysis differentiates between those working in Wisconsin (2,699) and those APNs who are working out of the state (1,001).

Table 4.3  
Advanced Practiced Nurse Cumulative Age Distribution Working In Versus Working Out of Wisconsin

Age Ranges	APN	
	working in state Percent	APN working out of state Percent
less than 25	0.1	0.1
25-29	5.2	3.7
30-34	17.4	12.9
35-39	31.0	21.8
40-44	43.7	32.4
45-49	59.1	49.2
50-54	78.8	71.0
55-59	93.1	89.9
60-64	98.3	96.6
65-69	99.5	99.2
70-74	99.9	99.5
75 and older	100.0	100.0

As Table 4.3 shows, the distribution of APN nurses’ age working in Wisconsin is less than that of those working outside of Wisconsin. This relationship is at odds with the relationships found in every other analysis of favorable traits for adequate supply of nurses in this report.

Table 4.4 indicates a furtherance of the pattern with APN working in Wisconsin having achieved a higher level of degree in educational settings.<sup>9</sup>

<sup>9</sup> The responses to this question call into question if those respondents indicating associate or nursing diploma as their highest degree did not understand the terms used in either the educational background question or the meaning of the APN designation.

Table 4.4  
Comparison of Advanced Practice Nurse Highest Degree in Nursing by Cumulative Percent

Highest Degree	In Wisconsin Cumulative Percent	Out of State Cumulative Percent
Associate	0.2	0.7
Nursing Diploma	0.6	1.2
Bachelor	0.9	2.2
Master	97.7	92.4
PhD	100.0	100.0

Table 4.5 does not show any clear relationship between income of APN's working within Wisconsin and those working outside. APNs working in Wisconsin have fewer people in both the lower and in the higher end of the income distribution.

Table 4.5  
Annual Income of Advanced Practice Nurses Registered in Wisconsin (Cumulative Percent)

	Working in Wisconsin Percent	Working outside of Wisconsin Percent
\$10,000 or less	1.0	2.0
\$10,001 to \$15,000	1.7	2.5
\$15,001 to \$20,000	2.5	4.0
\$20,001 to \$25,000	3.4	6.1
\$25,001 to \$30,000	4.7	7.1
\$30,001 to \$35,000	6.2	9.1
\$35,001 to \$40,000	8.3	10.8
\$40,001 to \$45,000	10.5	12.8
\$45,001 to \$50,000	14.2	16.5
\$50,001 to \$55,000	17.1	19.2
\$55,001 to \$60,000	20.1	23.9
\$60,001 to \$65,000	25.2	29.2
\$70,001 to \$75,000	34.6	33.6
\$75,001 to \$80,000	46.2	42.5
\$80,001 to \$85,000	58.1	52.4
\$85,001 to \$90,000	67.9	61.5
\$90,001 to \$95,000	73.6	66.9
\$95,001 to \$100,00	78.6	73.2
Over \$100,000	100.0	100.0

Table 4.6 provides a summary of the primary work setting of the APN respondents. The APN are primarily employed in ambulatory care settings (38.5%) and in hospitals (34.9%).

Table 4.6  
Work Setting for Principal Place of Work by Percent

	Work Setting Percent
Academic Education	2.8
Ambulatory Care	38.5
Home Health	0.9
Hospital	34.9
Nursing Home/Extended Care	2.2
Public/Community Health	3.4
Other	17.3

Based on data maintained by the Department of Safety and Professional Services (the former department of Regulation and Licensing) as of the time of the survey, March 15, 2010 there were 1,085 active APNP and 1,199 inactive APNP. In the Registered Nurse survey 2,252 respondents claimed to be “certified as an advanced practice nurse from any national professional nursing certification organization” as an advanced practice nurse prescriber. For the purposes of this analysis, it is assumed virtually all of the inactive APNP answered the survey question indicating they are an APNP.

Table 4.7  
Age Distribution by Percent of Advanced Practice Nurse Prescribers

Age Range	Percent	Cumulative Percent
less than 25	0.1	0.1
25-29	5.4	5.5
30-34	12.1	17.6
35-39	12.6	30.1
40-44	12.0	42.2
45-49	15.3	57.4
50-54	20.1	77.6
55-59	14.3	91.9
60-64	5.9	97.8
65-69	1.7	99.5
70-74	0.4	99.9
75 and older	0.1	100.0

Table 4.7 shows the age distribution of the APNP respondents. While it is reasonable to assume this specialized group of Registered Nurse would be older, it is 20.1% of the APNP are between age 50 and 54. Of all APNP 42.6% are 50 years old or older.

As shown in Table 4.8 the APNP respondents work primarily in ambulatory care, 42.7% and hospital settings, 26.5%.

Table 4.8  
Work Settings for APNP Respondents by Percent

Workplace Setting	Percent
Academic Education	3.4
Ambulatory Care	42.7
Home Health	0.7
Hospital	26.5
Nursing Home/Extended Care	3.3
Public/Community Health	4.2
Other	19.1

### Chapter Summary

There has been a growth in the need for Registered Nurses with specialized skills. To continue to use specialized nurses there is a need for the age distribution of nurses with these skill sets to be more balanced. However, given an aging population of both nurses trained in specialties and the population that will require health care, the need for specialized training is substantial. The use of specialized nurses who need advanced college degrees to qualify for certification may not meet the stated need of a quality health care system in a timely fashion. The need for specialization and the time required by nurses to achieve this specialization may be a part of a systemic bottleneck that perpetuates the nursing shortage. Such analysis and policy development exceeds the limits of the data collected for this report. The data gathered has been shared with the Wisconsin Center for Nursing. The center will continue to study the information and develop strategies to address the shortages of nurses.

## **Chapter 5 Future Process Improvements**

DWD worked with subject matter experts and other state agencies to create the research instruments used to meet the tasks identified in SS 106.30. As is the case with most research processes, shortcomings in the research instruments and data collection processes have been identified and efforts to address these shortcomings are under way. For example, the current surveys are lengthy and may be burdensome for some nurses.

The questions used to obtain information concerning specializations, work settings, the ability to interact with other cultures and public health are currently being reviewed by the research team at DWD.

Part of the research process is to develop an awareness of the limitations of the data collected while casting a wider net to capture more information. Preserving the confidentiality of the respondents, respecting the time given by the respondents and capturing data more useful to the policy analysis remain critical enhancements for future survey design. DWD will continue to modify the research tool to obtain better information facilitating lawmakers, policy makers and others in making informed decisions addressing future potential shortage of nurses.

The data has also been shared with the Wisconsin Center of Nursing (WCN) who will continue detailed analysis of the data, while protecting the identity of the respondents.



# Appendix





# Technical Notes

## AHEC Designation

Rural-urban codes used in the report are taken from work by Wisconsin AHEC. The codes identify zip code tabulation areas (ZCTAs) based on census data for the size and population density of the zip code area. This classification system was designed to address problems arising from the application of the OMB metropolitan designations to entire counties, including large areas of these counties that have lower population density and are largely rural in character. The AHEC codes also do not incorporate patterns of commuting to work from rural areas to metropolitan areas as the Rural-Urban Commuting Area (RUCA) codes do.

### Group #1

Assign all Milwaukee County places to the Milwaukee County category

### Group #2

Assign Metro county designation to Brown, Calumet, Chippewa, Dane, Douglas, Eau Claire, Fond du Lac, Kenosha, La Crosse, Marathon, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Waukesha, and Winnebago Counties.

Assign code Urban to all ZCTAs with 5% or more of their population within urbanized areas.

### Group #3

For all other ZCTAs in the remaining Counties, assign designations according to the population living in urban clusters in the county. If the largest urban area population is greater than 2500 then Group #3.

### Group #4

All remaining non commercial ZCTAs.

## **Survey Methodology**

The registered nurse survey was conducted as an element in the biannual license renewal requirement from January 6, 2010 through March 1, 2010. Two forms of the survey were used, an on-line internet version and a mail-in paper version. The data summarized includes all paper responses received prior to March 17, 2010. The two versions are substantially the same, though the paper survey contained missing responses while the on-line version required responses to all questions. The dataset includes 77,553 responses, of which 3,111 are from the paper survey.

The licensed practical nurse survey was conducted as an element in the biannual license renewal requirement from March 2011 through May 2011. Two forms of the survey were available to participants: an on-line internet version and a mail-in paper version. The data summarized includes all paper responses received prior to May 17, 2011. The two versions are substantially the same, though the paper survey contained missing responses while the on-line version required responses to all questions. The dataset includes 14,165 responses, of which 1,811 are from the paper survey.

Funding for the survey development, implementation and summary was provided through a portion of the licensing renewal fees paid by the nurses. The survey was administered by the Wisconsin Department of Safety and Professional Services (formerly called the Department of Regulation and Licensing).

## **Research Instruments and At-Glance Summaries**

Copies of the research instruments are available from WORKnet  
([www.worknet.wisconsin.gov](http://www.worknet.wisconsin.gov))

After collecting the data for the Registered Nurses and again for the Licensed Practical Nurses the data was summarized as a series of tables reporting important characteristics of each population.

These summary's are available from WORKnet under the publications section of the website.

For additional survey information,  
email Nelse Grundvig at: [anelse.grundvig@dwd.wisconsin.gov](mailto:anelse.grundvig@dwd.wisconsin.gov)

Send mail requests to: Nelse Grundvig  
Attn: Nurses Survey  
Labor Market Information Section  
Department of Workforce Development  
201 E. Washington Ave  
P.O. Box 7944  
Madison, WI 53707

## **State Statute 106.30 Nursing workforce survey and grant.**

(1) DEFINITION. In this section, "nurse" means a registered nurse licensed under s. 441.06 or permitted under s. 441.08, a licensed practical nurse licensed or permitted under s. 441.10, an advanced practice nurse prescriber certified under s. 441.16 (2), or a nurse-midwife licensed under s. 441.15.

(2) SURVEY FORM. Each odd-numbered year, the department of workforce development shall develop and submit to the department of safety and professional services a survey form to gather data under s. 441.01 (7) (a) 1. to assist the department of workforce development in evaluating the supply of, demand for, and turnover among nurses in this state and in determining whether there are any regional shortages of nurses, shortages of nurses in any specialty areas, or impediments to entering the nursing profession in this state.

(3) SURVEY RESULTS. Beginning in 2011, by September 30 of each odd-numbered year, the department shall compile, process, and evaluate the survey results and submit a report of its findings to the speaker of the assembly and the president of the senate under s. 13.172 (3) and to the governor, the secretary of health services, and the nurse resource center described in sub. (5).

(4) COSTS OF SURVEY. The department may use no more than 12 percent of the amount received under s. 20.445 (1) (km) for costs incurred by the department under subs. (2) and (3).

### 106.30(5) (5) Nursing Workforce Grants.

(a) From the appropriation account under s. 20.445 (1) (km), the department of workforce development shall award grants equal to the amount appropriated under s. 20.445 (1) (km) minus the amount expended under sub. (4) to a nonprofit statewide nursing center that is comprised of and led by nurses and that has demonstrated coordination with constituent groups within the nursing community, including professional nursing organizations; organizations representing nurse educators, staff nurses, and nurse managers or executives; labor organizations representing nurses; the department of safety and professional services; the department of health services; and legislators who are concerned with issues affecting the nursing profession.

(b) A statewide nursing center that receives a grant under par. (a) shall use the grant moneys to develop strategies to ensure that there is a nursing workforce that is adequate to meet the current and future health care needs of this state. The statewide nursing center may use those moneys to fund activities that are aimed at ensuring such a nursing workforce, including monitoring trends in the applicant pool for nursing education programs; evaluating the effectiveness of nursing education programs in increasing access to those programs and in enhancing career mobility for nurses, especially for populations that are underrepresented in the nursing profession; and facilitating partnerships between the nursing community and other health care providers, the department of safety and professional services, the business community, the legislature, and educators to promote diversity within the nursing profession, enhance career mobility and leadership development for nurses, and achieve consensus regarding policies aimed at ensuring an adequate nursing workforce in this state.

## **Contributors**

DWD would like to acknowledge the help and support of several who made this report possible. While a list of individuals would not be practical, the staff from the Department of Safety and Public Services, Department of Administration, Department of Health Services and the Wisconsin Center for Nursing played critical roles at various points in the process.

The study also benefited from subject matter experts who are part of an informal group identified as the Health Care Data Collaborative with Tim Size as the coordinator and chair.

It should also be noted that several staff within DWD made valuable contributions to the report.

Thank you.