



Center *for*
Rural Health

University of North Dakota
School of Medicine & Health Sciences

North Dakota Nursing Needs Study: Year Five Facility Survey Results

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*Connecting resources and knowledge to strengthen
the health of people in rural communities.*

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Executive Summary

Background

The “Projected Supply, Demand and Shortages of Registered Nurses 2000-2020” (U.S. Department of Health and Human Services, 2002) report cited a six percent nationwide shortage of registered nurses in 2000 with this shortage increasing to 29 percent by 2020. North Dakota is currently experiencing a shortage of registered nurses (RNs) and licensed practical nurses (LPNs) with an increased shortage projected through the next 10 years (Moulton & Wakefield, 2003). Potential reasons for this shortage include a nationwide decline in the number of nursing graduates, aging of the nursing workforce, decline in relative salaries, an aging population, health care financing issues, and an uneven distribution of demand according to employment setting.

The Nursing Needs Study was recommended by the North Dakota Century Code Nurse Practices Act 43-12.1-08.2 in which the North Dakota Board of Nursing was directed to address issues of supply and demand including recruitment, retention and utilization of nurses. The North Dakota Board of Nursing then contracted with the Center for Rural Health at the University of North Dakota School of Medicine and Health Sciences to conduct the Nursing Needs Study.

Facility Survey Results

This report includes the results from the facility survey, which was sent to all hospitals, long-term care facilities, regional public health facilities, clinics and home health facilities in North Dakota. In the case of multiple services under the same name or administration (i.e., hospital/clinic and nursing home), only one survey was sent to the administrator and they were asked to collapse their information by county. A total of 176 organizations provided information on 317 facilities (representing 98 percent of counties in North Dakota), which provides a comprehensive picture of the nature of nursing employment and potential shortages throughout the state and to enable comparisons to be drawn between health care facilities, rural and urban areas and North Dakota and national data.

- **Recruitment Issues**

Hospitals, long-term care facilities, and clinics spent more than 10 weeks recruiting for vacant nurse positions in 2007. Urban facilities tended to take the shortest time to fill open positions. Open Advanced Practice Nurse (APNs) positions tended to take longer to fill when compared to LPNs and RNs.

- **Salary and Benefit Issues**

For the past three years, the average starting salaries were not consistent with education level in that associate RNs had a greater hourly wage than bachelor level RNs. Nurses in urban areas had the greatest starting salary. The lowest starting hourly wages are in the Southwest quadrant of state for LPNs, RNs, and APNs.

Average hourly wages indicated that associate degree RNs had a greater average wage than bachelor degree RNs and that urban nurses had greater average wages. The lowest average hourly wages are in the Southwest part of state for LPNs and RNs and in the Southeast for APNs (see Figure 10).

- **Staffing**

The statewide vacancy rate for LPNs was nine percent, which was an increase from the previous four years. The statewide RN vacancy rate was three percent, which was a decrease from previous years. Three counties had LPN vacancy rates and nine counties with RN vacancy rates that exceeded 15 percent.

The statewide turnover rate for LPNs was 31 percent, which is an increase from previous years. The statewide turnover rate for RNs was 19 percent, which was also an increase from previous years. Five counties had LPN turnover rates and fifteen counties had RN turnover rates that were greater than 30 percent.

- **Continuing Education**

Seventy-seven percent (77%) of facilities reported providing financial support for continuing education (CE) credits. In home health, public health, and clinics, RNs are most likely to be provided with financial support for CE. APNs are most likely to receive financial support for CE credits in long term care and hospitals.

Since the time CE was required for nurses, 68 percent of facilities reported “no change” in competency of nurses while 31 percent reported “increased competency”. Facilities most often provide financial support for travel expenses and tuition/registration costs.

- **Impact of Nursing Needs Study**

Fifty-four percent (54%) of facilities report viewing the results of the Nursing Needs study through articles, such as the Dakota Nurse Connection, North Dakota Nurses Association Prairie Rose, and The Informer. Thirty-two percent (32%) of facilities report not seeing the results of the Nursing Needs Study.

Fifty-seven percent (57%) of facilities report that they have not used the results of the Nursing Needs study in their facility. Twenty-three percent (23%) of facilities have distributed or discussed the results in their facility, while 18% have increased recruitment and/or retention activities.

North Dakota Nursing Needs Study Introduction

Health personnel shortages can negatively impact health care quality, through reduced health care access, increased stress on providers, and the use of under-qualified personnel. Also, shortages can contribute to higher costs by raising compensation levels to attract and retain personnel and by increasing the use of overtime pay and expensive temporary personnel. Workforce shortages, while a problem for the entire health care system, are likely to be most severe for rural/frontier regions and medically needy population groups such as the elderly. North Dakota has 41 designated medically underserved areas, and 81 percent of North Dakota's 53 counties are designated as partial or whole county health professional shortage areas. North Dakota also has the highest proportion of residents aged 85 and older, the age group with the greatest need for healthcare services. In North Dakota, this cohort is predicted to double in size by 2020.

Nurses are an integral part of the health care system providing nursing services to patients requiring assistance in recovering or maintaining their physical and/or mental health (North Dakota Healthcare Association, 2002). In the United States, nurses comprise the largest group of health care providers. The ability to provide accessible, high quality care depends on the availability of a nursing workforce with the requisite skills and knowledge. Over the past few years, research studies have identified clear relationships between nurse staffing and patient outcomes. For example, lower nurse staffing in hospitals has been linked to longer hospital stays for patients, as well as a number of complications such as pneumonia (e.g., Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). Directly challenging the health care system's ability to provide quality patient care is a growing national and international disparity in nursing workforce supply and demand. North Dakota is not immune to this problem.

The Nursing Needs Study was recommended, in 2001, by the North Dakota State Legislature (NDCC Nurse Practices Act 43-12.1-08.2) to address potential shortages in nursing supply. Specifically, the North Dakota Board of Nursing was directed to address issues of supply and demand for nurses, including issues of recruitment, retention, and utilization of nurses. To respond to this request, the North Dakota Board of Nursing contracted with the Center for Rural Health at the University of North Dakota School of Medicine and Health Sciences.

This study, initiated in 2002, was designed to obtain an accurate and complete picture of nurses in rural and urban areas of North Dakota, compare North Dakota's trends to national trends, and inform institutional and public policy. The study, currently in its fifth year, is approved to continue until 2012 by the Board of Nursing. This study will continue to provide valuable information about the nursing workforce through a 10-year period of time.

Facility Survey Results

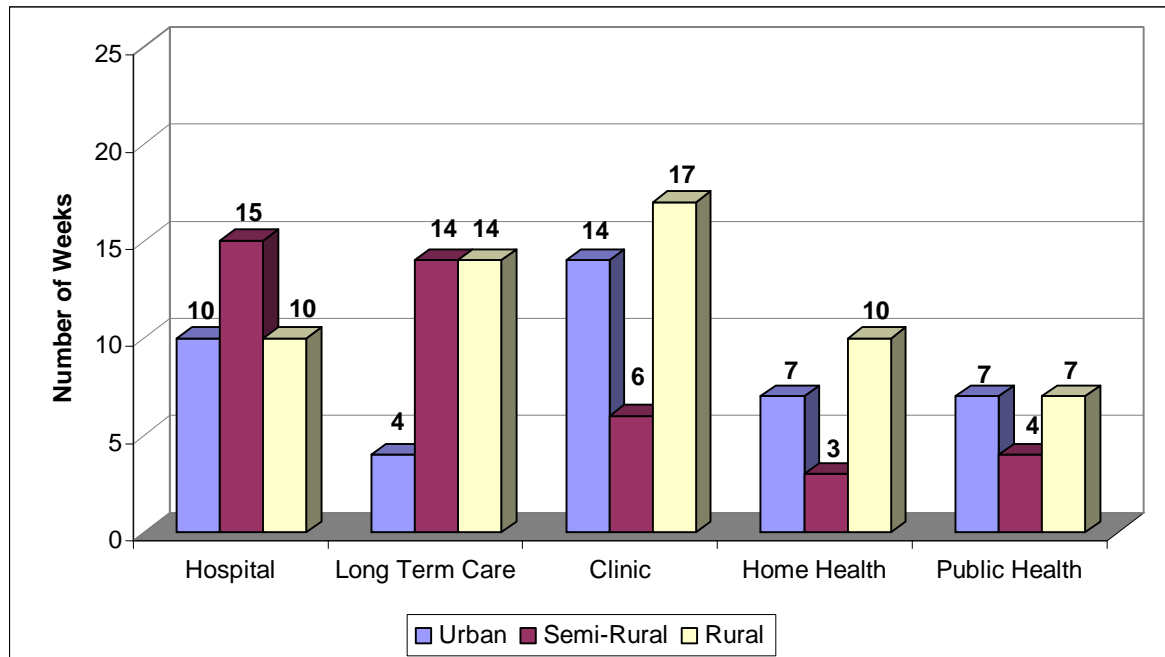
Surveys were sent to all North Dakota hospitals, long-term care facilities, regional public health facilities, home health facilities, and clinics in the fall of 2006. Of the 176 organization responses (317 different facilities), 16 percent represented urban facilities; 67 percent represented semi-rural facilities; and 16 percent of the responses came from rural facilities. Fifty-two of 53 counties in North Dakota were represented in the survey responses.

Data was analyzed by rurality using Urban Influence Codes¹ and level of nurses². These results are also compared with facility survey results from 2003, 2004, 2005, and 2006 providing a five-year composite picture.

RECRUITMENT ISSUES

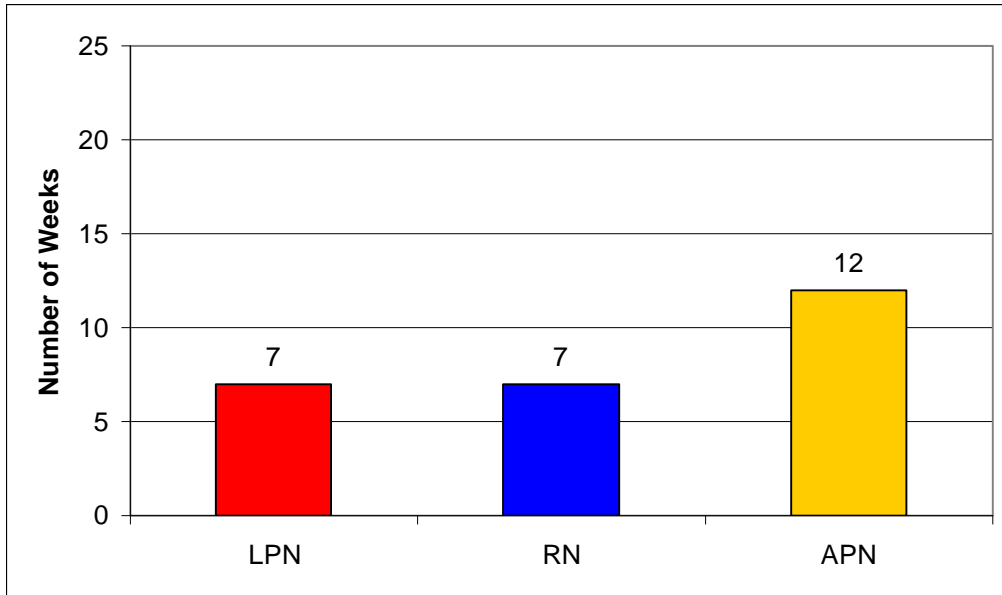
Facilities were asked how long (number of weeks) on average, it takes to fill a vacant nursing position. Public and home health facilities took the fewest weeks to fill a vacant position (see Figure 1).

Figure 1: Average Number of Weeks to Fill Vacancies



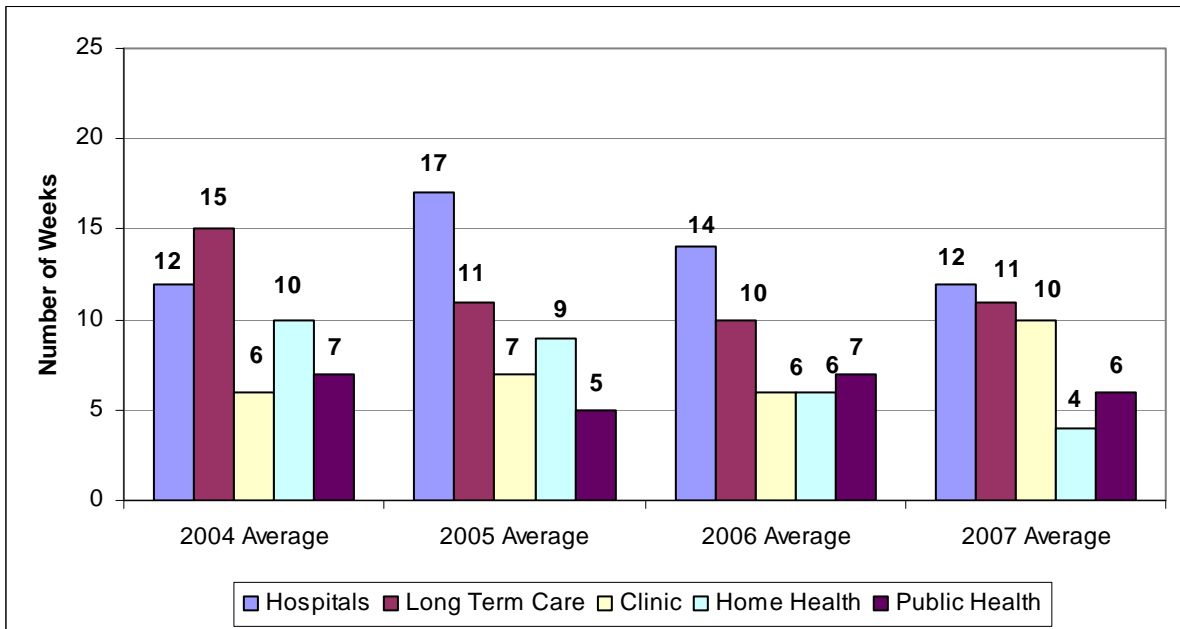
When divided by nurse level, Advanced Practice Nurses (APNs) had the greatest number of weeks to fill a nurse vacancy (see Figure 2).

Figure 2: Average Number of Weeks to Fill Vacancies by Nurse Level



Overall as compared to 2005 and 2006, public health, home health, and hospitals facilities saw a decrease in the number of weeks to fill nurse vacancies. Long-term care and clinics have experienced an increase in the last year (see Figure 3).

Figure 3: Average Number of Weeks to Fill Vacancies According to Year



SALARY AND BENEFITS ISSUES

Starting Wage

Starting wages are the average hourly wage paid to nurses when they were first hired as new graduates. In nearly all cases, urban nurses had a higher average starting pay than semi-rural and rural nurses. The highest average starting pay was for APNs, while the lowest average starting pay was reported for semi-rural, public health diploma LPNs at \$11.35 (see Table 1).

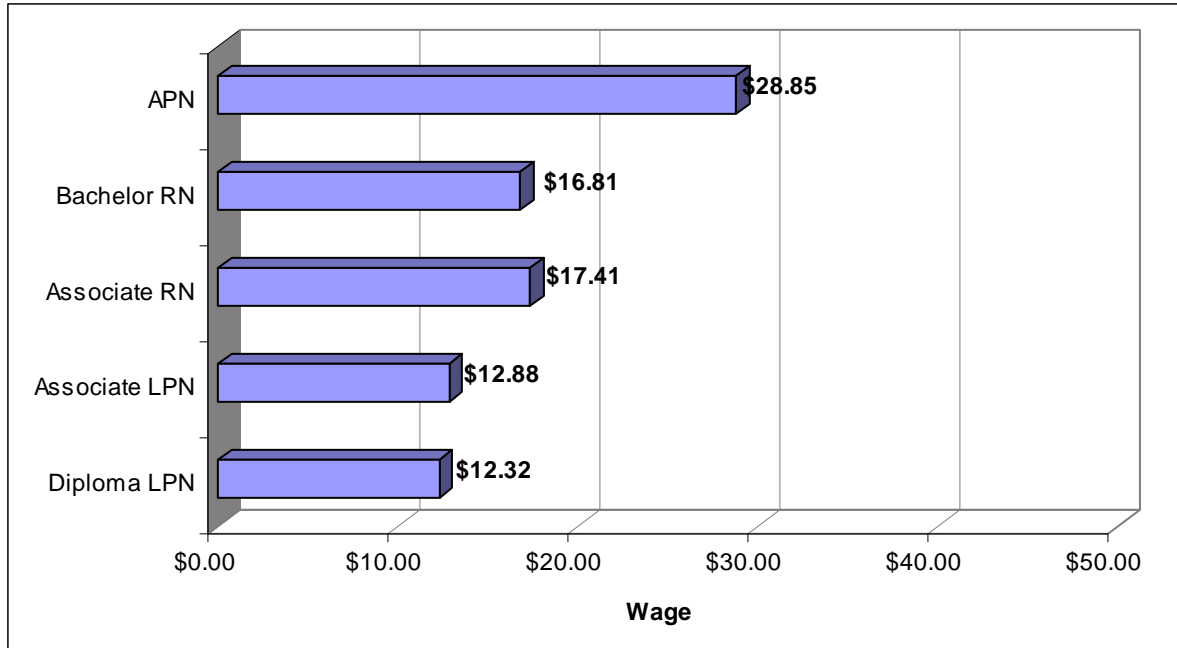
Table 1: Average Starting Hourly Wage for Each Nurse Category

		Diploma LPN	Associate LPN	Associate RN	Bachelor RN	APN
HOSPITAL	URBAN	\$13.23 (5)	\$13.13 (6)	\$20.31 (6)	\$20.31 (6)	\$37.31 (5)
	SEMI-RURAL	\$12.54 (17)	\$12.99 (17)	\$17.28 (13)	\$17.31 (17)	\$50.00 (1)
	RURAL	\$11.99 (6)	\$12.57 (6)	\$15.84 (1)	\$16.85 (6)	\$31.00 (2)
LONG-TERM CARE	URBAN	\$13.86 (12)	\$14.35 (9)	\$19.26 (8)	\$19.02 (7)	---
	SEMI-RURAL	\$12.70 (26)	\$13.33 (32)	\$16.67(26)	\$17.12 (29)	22.56 (3)
	RURAL	\$12.48 (4)	\$12.87 (3)	---	\$16.48 (4)	\$32.00 (1)
CLINIC	URBAN	\$11.84 (5)	\$11.84 (5)	\$18.31 (4)	\$18.31 (4)	\$26.94 (5)
	SEMI-RURAL	\$11.36 (26)	\$12.00 (23)	\$15.55 (13)	\$15.11 (18)	\$27.57 (13)
	RURAL	\$11.59 (6)	\$11.82 (5)	---	\$15.63 (3)	\$27.81 (3)
HOME HEALTH	URBAN	\$13.08 (6)	\$13.29 (5)	\$19.50 (8)	\$19.45 (9)	---
	SEMI-RURAL	\$12.32 (6)	\$12.48 (9)	\$18.29 (5)	\$17.56 (14)	---
	RURAL	\$12.00 (1)	\$12.40 (1)	---	\$16.89 (1)	---
PUBLIC HEALTH	URBAN	---	\$13.34 (2)	\$19.44 (1)	\$17.89 (4)	\$26.25 (2)
	SEMI-RURAL	\$10.94 (5)	\$14.00 (2)	---	\$14.74 (22)	\$12.61 (1)
	RURAL	---	---	\$16.25 (2)	\$14.29 (7)	\$ 13.86 (1)

Note. The number of responses is included in parenthesis.

Overall, the average starting hourly wage is greater for associate degree level LPNs compared to diploma LPNs while pay is greater for associate level RNs compared to bachelor level RNs (see Figure 4).

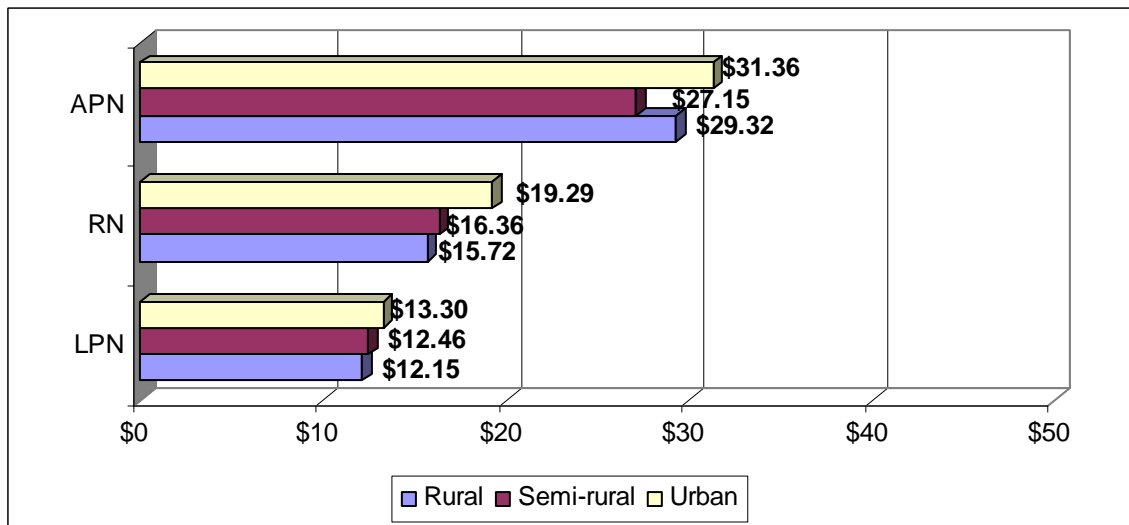
Figure 4: Average Starting Hourly Wage by Education Level



Note. Average starting wage for each category is a weighted mean.

When divided by rurality, nurses in urban areas had greater average starting hourly wages than nurses in semi-rural and rural areas. Urban RNs starting hourly wage is \$3.57 (18.5%) more than rural RNs. Urban APNs starting hourly wage is \$4.21 (13.4%) more than Semi-rural APNs.

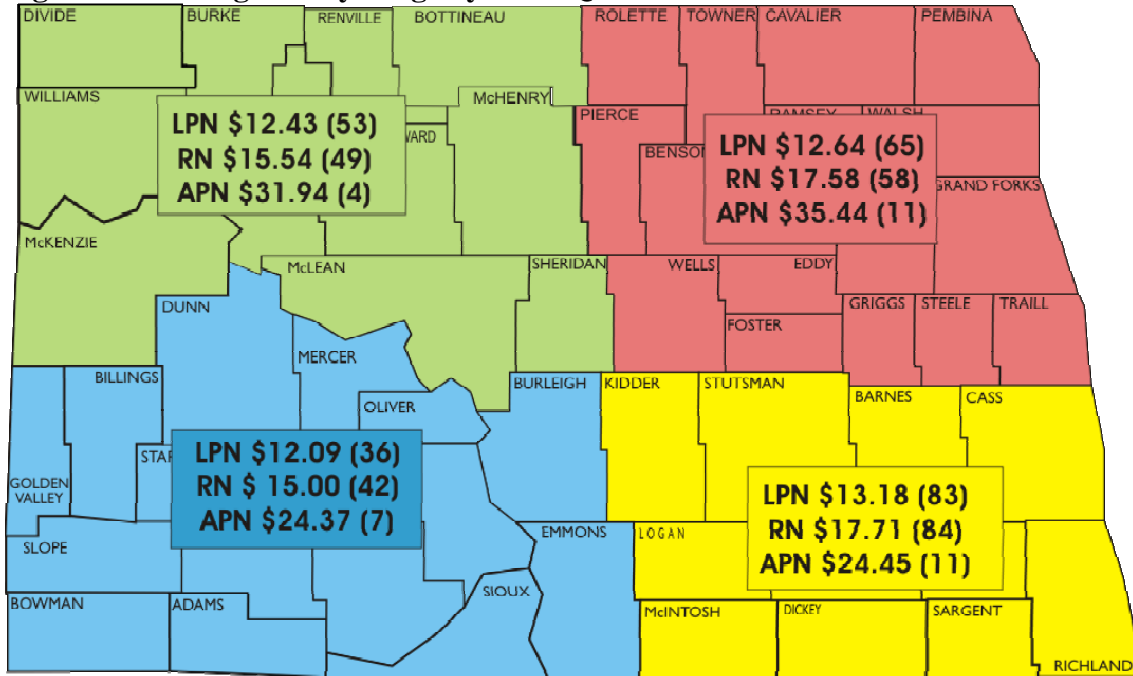
Figure 5: Starting Hourly Wage by Rurality



Note. Average starting wage for each category is a weighted mean.

When divided by quadrant the lowest starting hourly wages are in the Southwest part of state for LPNs, RNs, and APNs (see Figure 6).

Figure 6: Starting Hourly Wage by State Quadrant

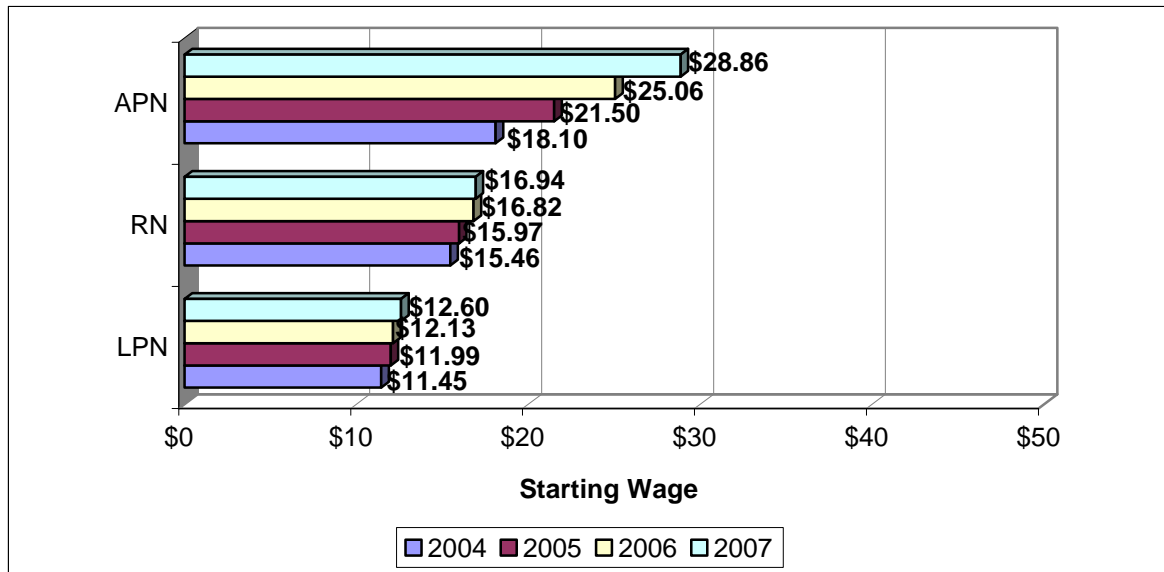


Note. The number of responses is included in parenthesis. Average starting wage for each category is a weighted mean.



Across the last four years, starting wages have increased for LPNs and RNs, with APNs having the greatest increase (see Figure 7).

Figure 7: Comparison of Starting Wage by Year (2004 - 2006)



Note. Average starting wage for each category is a weighted mean.



Average Wage

Average wages reflects the average hourly wage paid for all nurses. The highest average wage was noted at a semi-rural hospital at \$50.00 per hour for an APN. Lowest average pay was reported for semi-rural public health diploma LPNs at \$12.14 per hour (see Table 2).

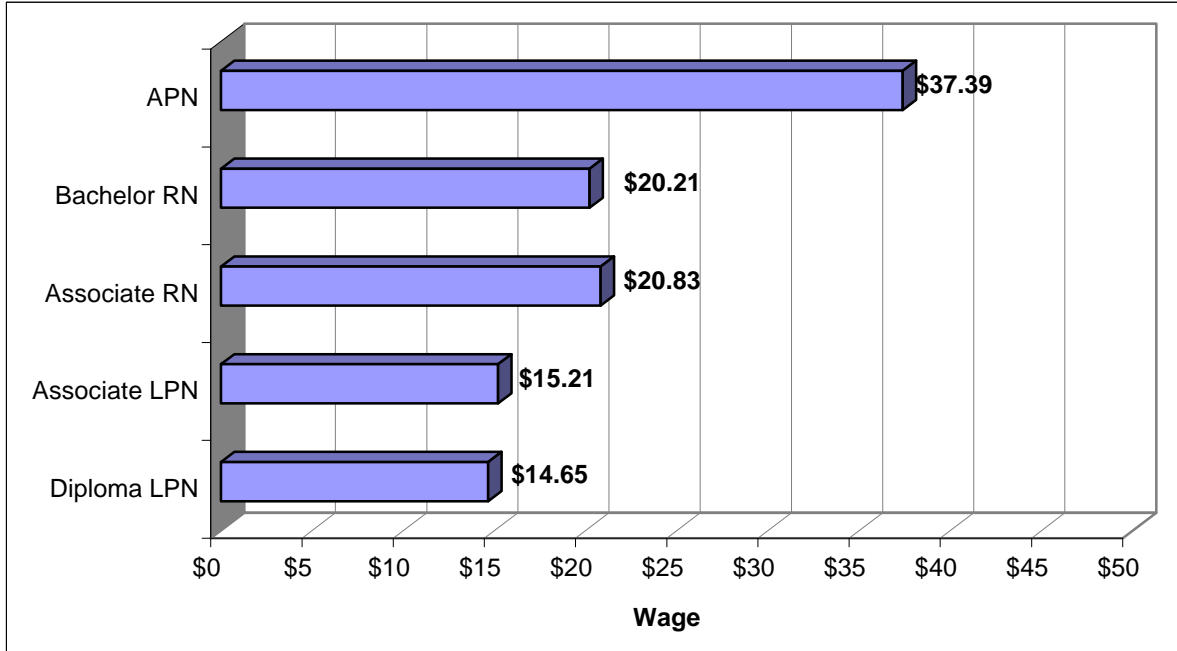
Table 2- Average Hourly Wage for Each Nurse Category

		Diploma LPN	Associate LPN	Associate RN	Bachelor RN	APN
HOSPITAL	URBAN	\$15.15 (4)	\$14.92 (5)	\$23.62 (5)	\$23.82 (5)	\$47.13 (4)
	SEMI-RURAL	\$15.34 (15)	\$15.17 (16)	\$21.11 (13)	\$21.33 (17)	\$50.00 (1)
	RURAL	\$14.70 (6)	\$14.74 (6)	\$17.50 (1)	\$19.98 (6)	\$35.00 (2)
LONG-TERM CARE	URBAN	\$16.82 (8)	\$16.76 (7)	\$22.64 (6)	\$21.94 (7)	---
	SEMI-RURAL	\$14.99 (18)	\$15.65 (27)	\$19.47 (23)	\$20.90 (24)	\$27.09 (1)
	RURAL	\$13.63 (3)	\$15.33 (2)	---	\$19.80 (3)	\$40.00 (1)
CLINIC	URBAN	\$14.52 (3)	\$14.42 (3)	\$24.18 (3)	\$22.51 (3)	\$34.33 (4)
	SEMI-RURAL	\$13.56 (20)	\$14.41 (18)	\$19.34 (13)	\$18.78 (18)	\$35.08 (12)
	RURAL	\$12.99 (5)	\$13.86 (4)	---	\$18.87 (3)	\$39.73 (4)
HOME HEALTH	URBAN	\$15.96 (4)	\$15.96 (4)	\$22.63 (7)	\$23.49 (8)	---
	SEMI-RURAL	\$16.25 (4)	\$16.16 (7)	\$24.30 (4)	\$22.86 (13)	---
	RURAL	---	---	---	\$23.08 (1)	---
PUBLIC HEALTH	URBAN	\$14.77 (1)	\$14.77 (1)	\$24.19 (1)	\$20.82 (4)	\$28.95 (1)
	SEMI-RURAL	\$12.14 (5)	\$13.52 (3)	\$15.40 (1)	\$16.69 (24)	---
	RURAL	---	---	\$16.50 (1)	\$16.82 (7)	---

Note. The number of responses is included in parenthesis.

Overall, the average hourly wage is greater for associate degree LPNs compared to diploma LPNs and for associate degree level RNs compared to bachelor degree education level RNs (see Figure 8).

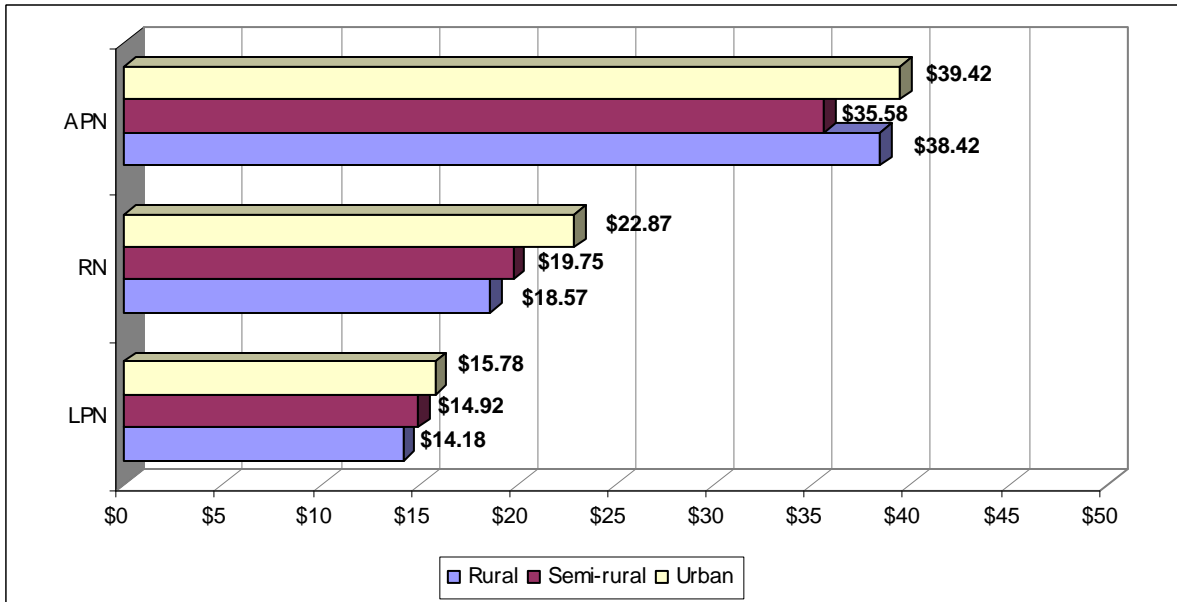
Figure 8: Average Hourly Wage by Nursing level



Note. Average starting wage for each category is a weighted mean.

When divided by rurality, nurses in urban areas had greater average hourly wages than nurses in semi-rural and rural areas (see Figure 9).

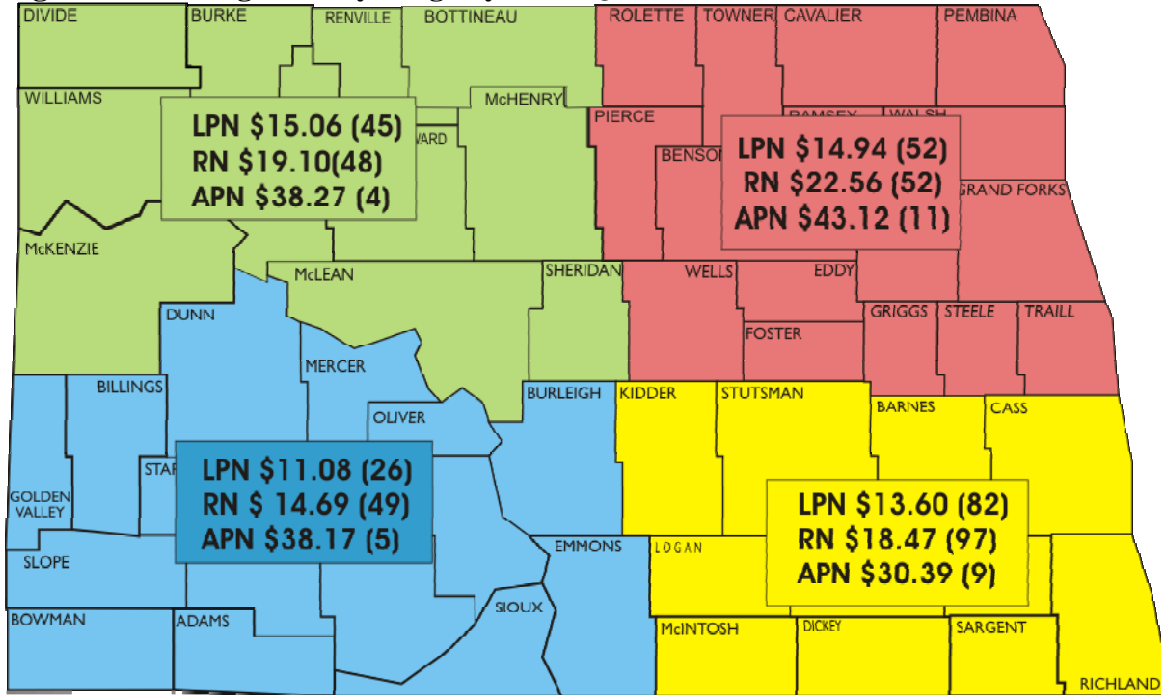
Figure 9: Average Hourly Wage by Rurality



Note. Average starting wage for each category is a weighted mean.

When divided by quadrant the lowest hourly wages are in the Southwest part of state for LPNs and RNs and in the Southeast for APNs (see Figure 10).

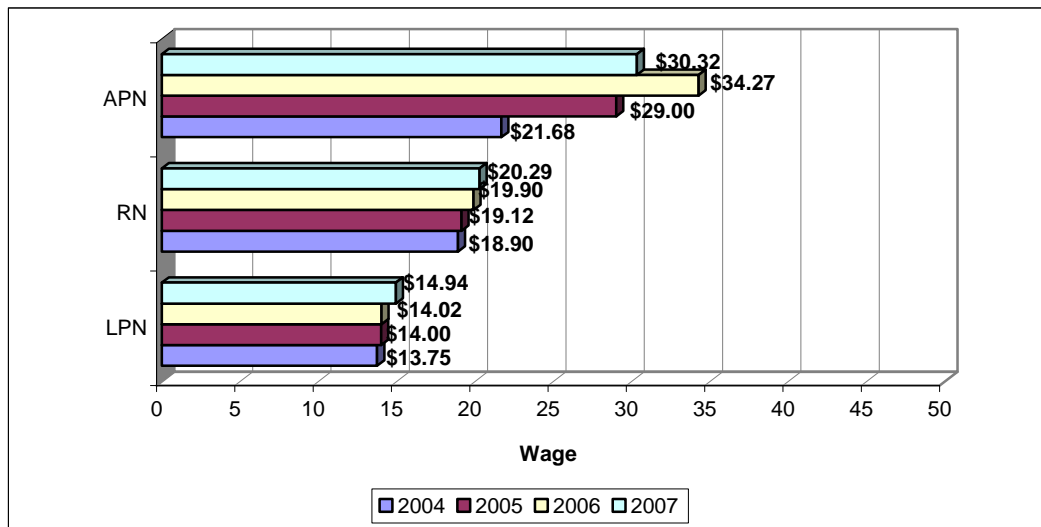
Figure 10: Average Hourly Wage by State Quadrant



Note. The number of responses is included in parenthesis. Average starting wage for each category is a weighted mean.

Across the last four years, average wages have increased for LPNs and RNs. APNs have seen a decrease in average wage since 2006 (see Figure 11).

Figure 11: Comparison of Average Wage by Year (2004 - 2007)



STAFFING ISSUES

Vacancy Rates

Vacancy rates for each facility type, and each nurse category, are defined as the average number of vacant FTE (full-time equivalent) positions divided by the average number of budgeted positions for the same year (HSM, 2003). According to economists, a full workforce in most industries exists when vacancy rates do not exceed five to six percent (Prescott, 2000). A shortage is considered to be present at a sustained vacancy rate above this level.

The highest vacancy rates were for RNs especially in hospitals and home health facilities (see Table 3)

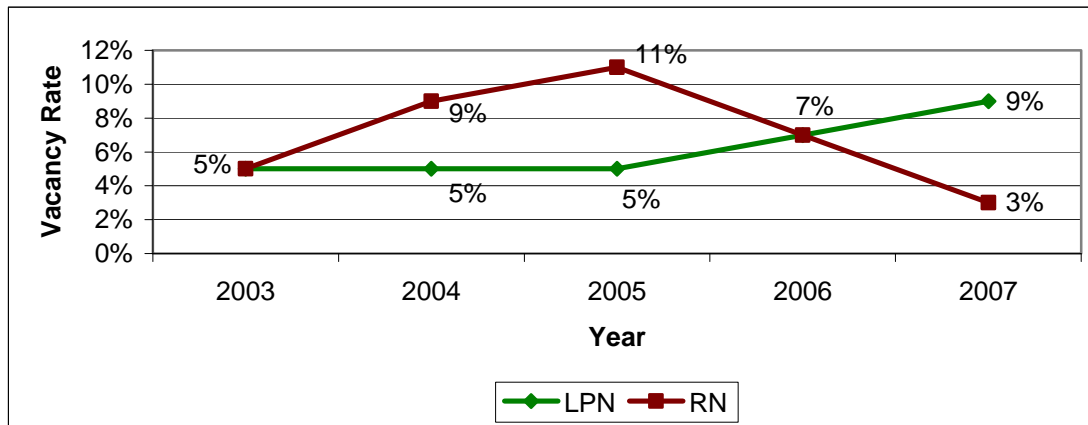
Table 3 – Vacancy Rate by Facility Type

	LPN	RN
HOSPITAL	15% (8)	3% (53)
LONG-TERM CARE	6% (41)	3% (69)
CLINIC	8% (34)	3% (40)
HOME HEALTH	13% (13)	--
PUBLIC HEALTH	0% (9)	1% (55)

Note. Parenthesis indicates the frequency of complete survey responses necessary for calculation of vacancy rates). In the case of RNs, the frequency of responses is aggregated across direct care RNs, managerial RN and special RN positions.

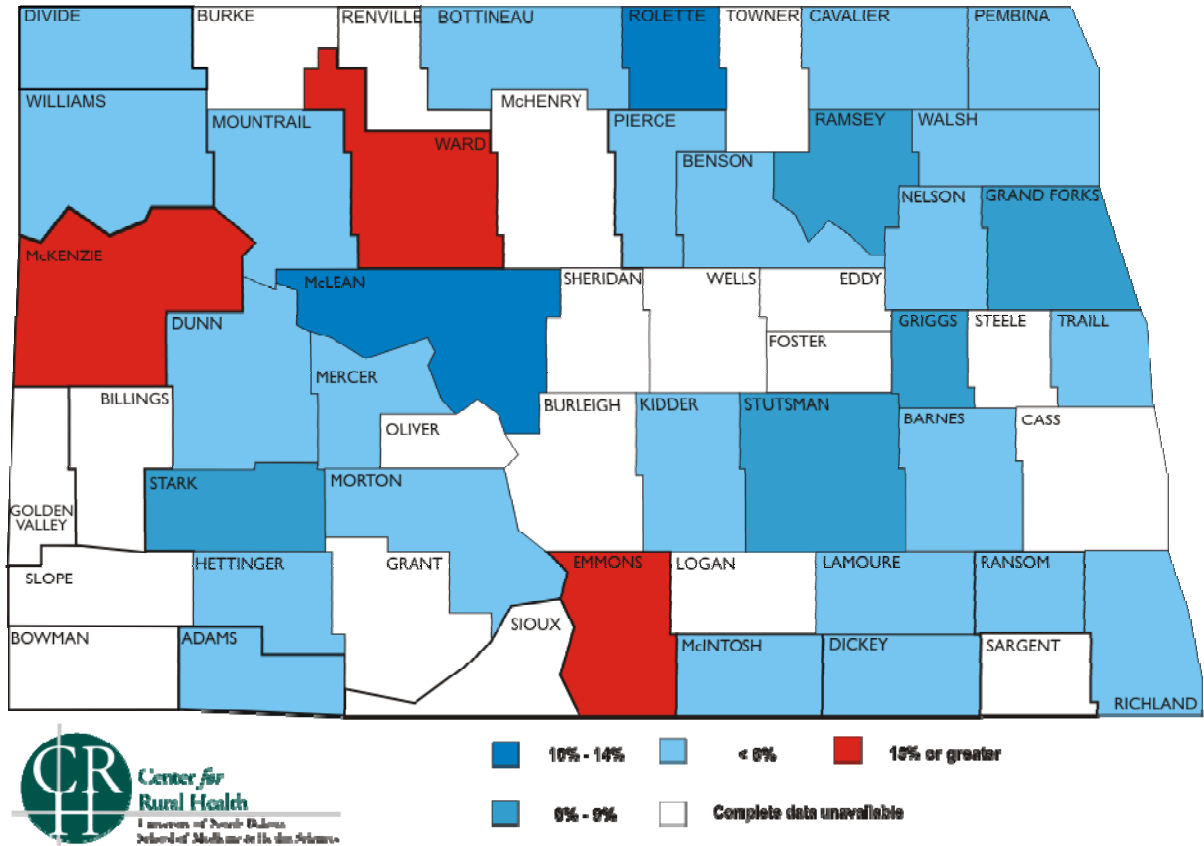
The 2007 statewide vacancy rate for LPNs was nine percent, which is an increase from the 2003, 2004, and 2005 vacancy rates of five percent and the 2006 vacancy rate of seven percent. The RN statewide vacancy rate of three percent was a decrease from previous years (see Figure 12). Nationally, RN vacancy rates in hospitals are about 8 percent, while LPN vacancy rates are near 7 percent (AHA, 2006). In 2002, nurse vacancy rates in hospitals average about 15 percent (AHA, 2002). Similarly, in 2002, the American Organization of Nurse Executives (AONE) study (HSM Group, 2002) reported the average nation-wide vacancy rate for RNs in hospitals as 10 percent.

Figure 12: Statewide Vacancy Rates by Year (2003-2007)



When divided by county, 10 counties had LPN vacancy rates above six percent. This includes three counties, which have vacancy rates greater than 15 percent. In comparison to 2006, 11 counties had vacancy rates above six percent including five counties with LPN vacancy rates above 15 percent (see Figure 13).

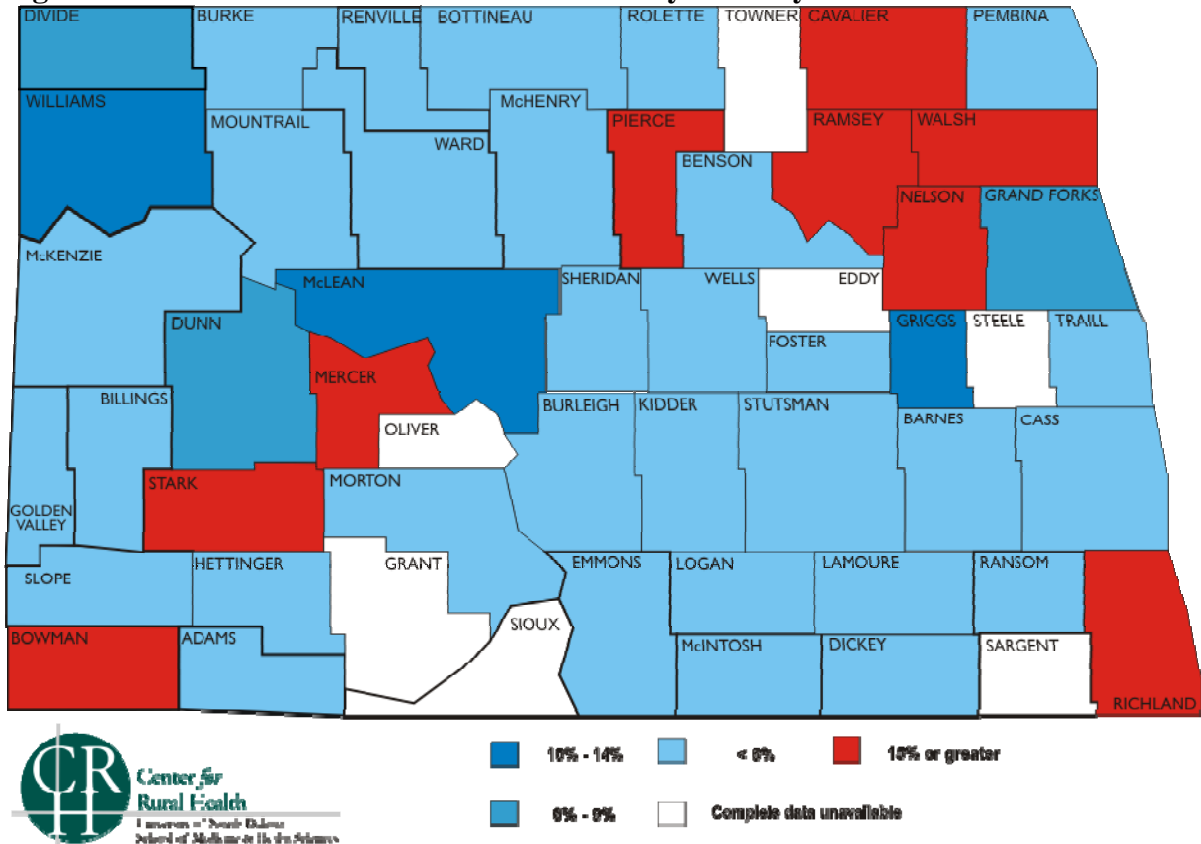
Figure 13: North Dakota LPN Health Care Facility Vacancy Rates



Note. Vacancy rates include all responding health care facilities within each county (hospital, long-term care, clinic, home health and public health). Also, there is a difference in the numbers of incomplete responses across years. For example, there were 18 counties in 2005 and 23 in 2006 with incomplete data.

The statewide vacancy rate for RNs was three percent in 2007 in comparison to seven percent for 2006, 11 percent for 2005, nine percent for 2004, and five percent in 2003. Fifteen counties had vacancy rates in 2007 above six percent including nine counties with vacancy rates above 15 percent. In contrast, in 2006, eleven counties had vacancy rates in 2006 above six percent including six counties with vacancy rates above 15 percent (see Figure 14).

Figure 14: North Dakota RN Health Care Facility Vacancy Rates



Note. Vacancy rates include all responding health care facilities within each county (hospital, long-term care, clinic, home health and public health). There were similar numbers of counties with incomplete data in 2005 and 2006.

Turnover Rates

Turnover rate is defined as the number of resignations or terminations divided by the average number of direct and indirect care full-time equivalent (FTE) positions for the same year (HSM, 2002). The American Organization of Nurse Executives (HSM, 2002) reports an average nationwide turnover rate of 21 percent for RNs in hospitals with a range of 10 to 30 percent. Turnover rates reflect fluctuation in staffing at a facility.

The greatest turnover rates were found for LPNs in home health and long term care facilities (see Table 4).

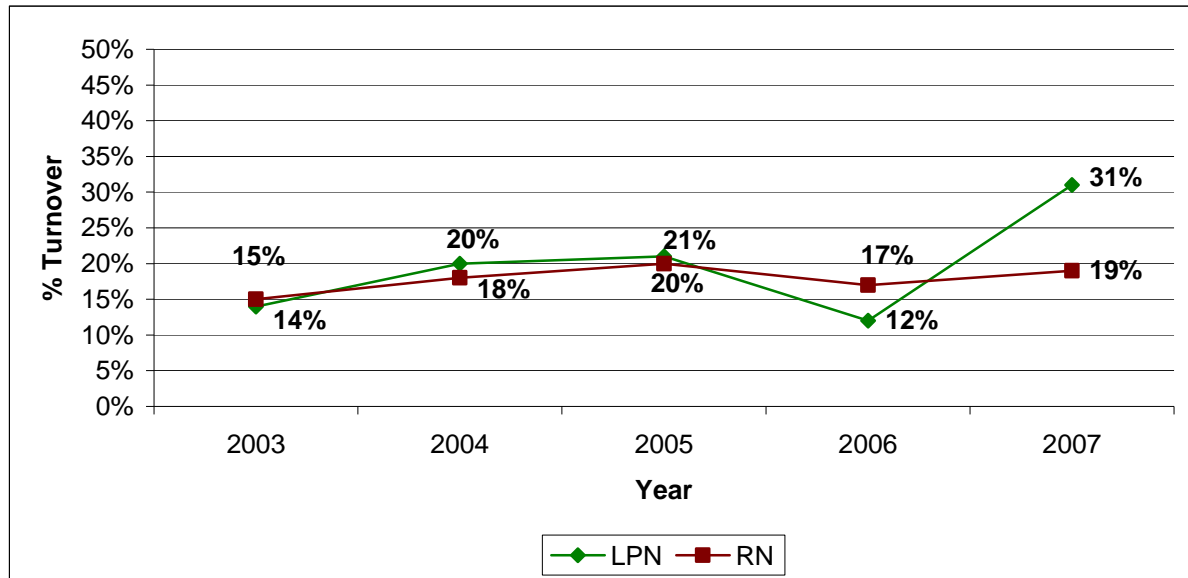
Table 4: Turnover Rate by Facility Type

	LPN	RN
HOSPITAL	20% (19)	25% (36)
LONG-TERM CARE	49% (37)	28% (56)
CLINIC	20% (23)	22% (22)
HOME HEALTH	68% (7)	10% (23)
PUBLIC HEALTH	0% (6)	12% (34)

Note. Parenthesis indicates the frequency of complete survey data that is necessary for calculation of turnover rates. In the case of RNs, the frequency of responses is aggregated across DRN, MRN, and SRN positions.

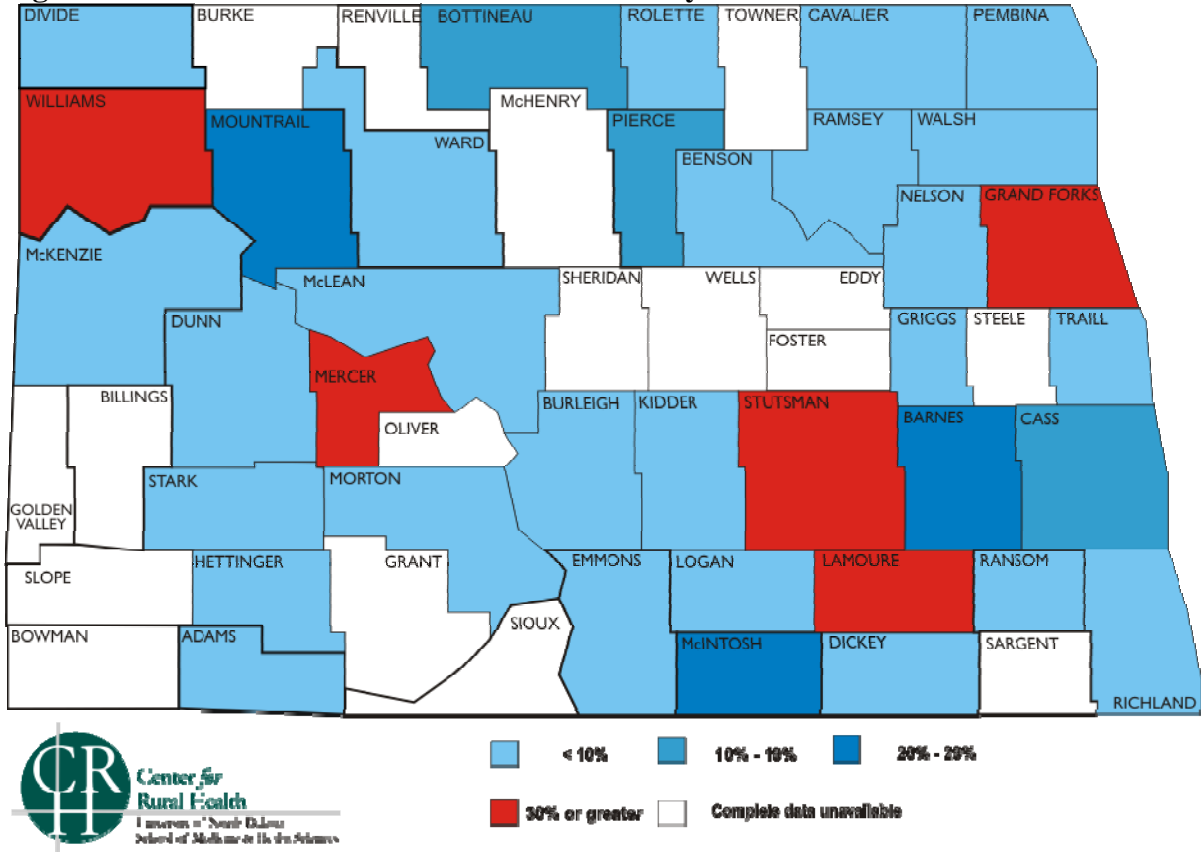
The statewide turnover rate for LPNs was 31 percent in 2007, which is higher than the statewide turnover rate in previous years. The statewide turnover rate for RNs was 19 percent, which was higher than the last year but is still less than in 2004 and 2005 (see Figure 15).

Figure 15: Statewide Turnover Rates by Year (2003-2007)



When divided by county, five counties had LPN turnover rates 30 percent or greater in 2007. In contrast in 2006, three counties had LPN turnover rates 30 percent or greater in 2006 (see Figure 16).

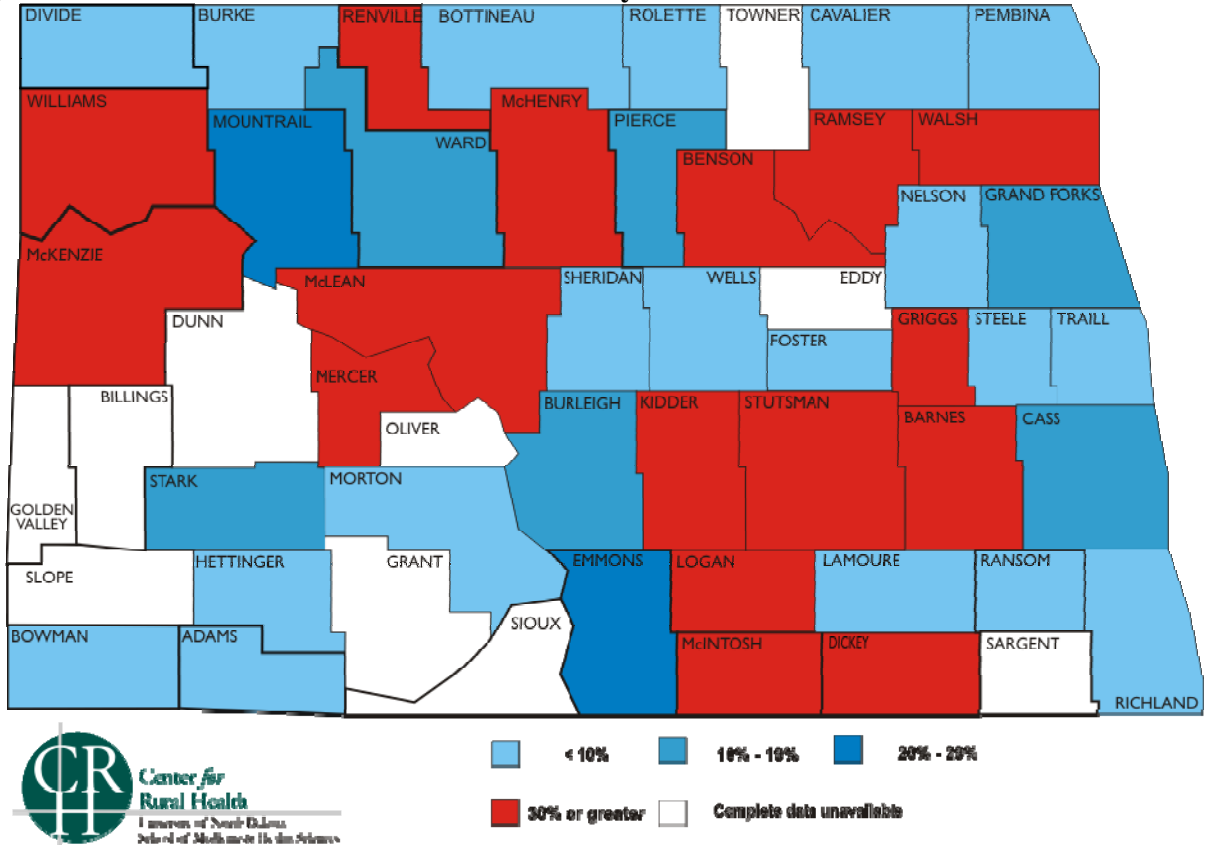
Figure 16: North Dakota LPN Health Care Facility Turnover Rates



Note. Turnover rates include all responding health care facilities within each county (hospital, long-term care, clinic, home health and public health). Also, there is a difference in the numbers of incomplete responses across years. For example, there were 18 counties in 2005 and 28 in 2006 with incomplete data.

When divided by county, 15 counties had RN turnover rates 30 percent or greater. In contrast to 2005 when there were six counties had RN turnover rates 30 percent or greater (see Figure 17).

Figure 17: North Dakota RN Health Care Facility Turnover Rates

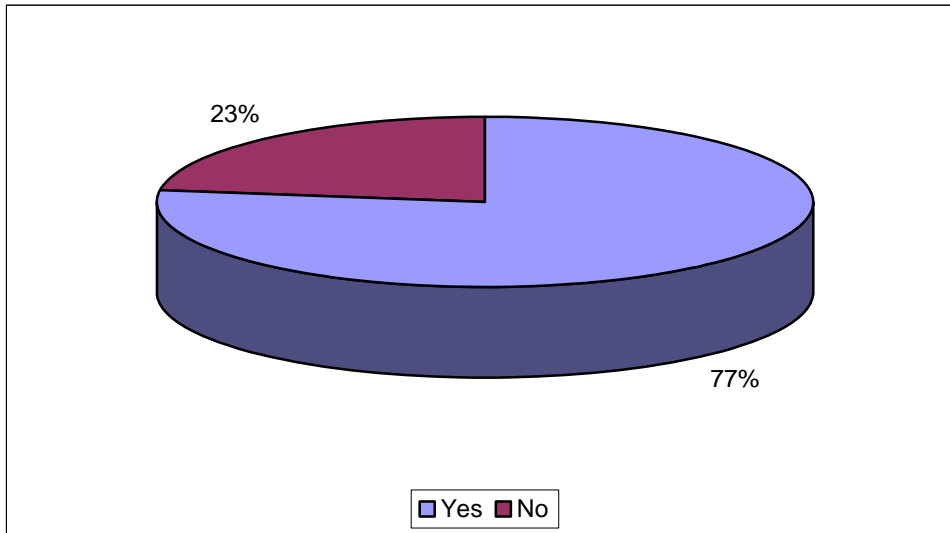


Note. Turnover rates include all responding health care facilities within each county (hospital, long-term care, clinic, home health and public health). Also, there is a difference in the numbers of incomplete responses across years. For example, there were 11 counties in 2005 and 23 in 2006 with incomplete data.

CONTINUING EDUCATION (CE)

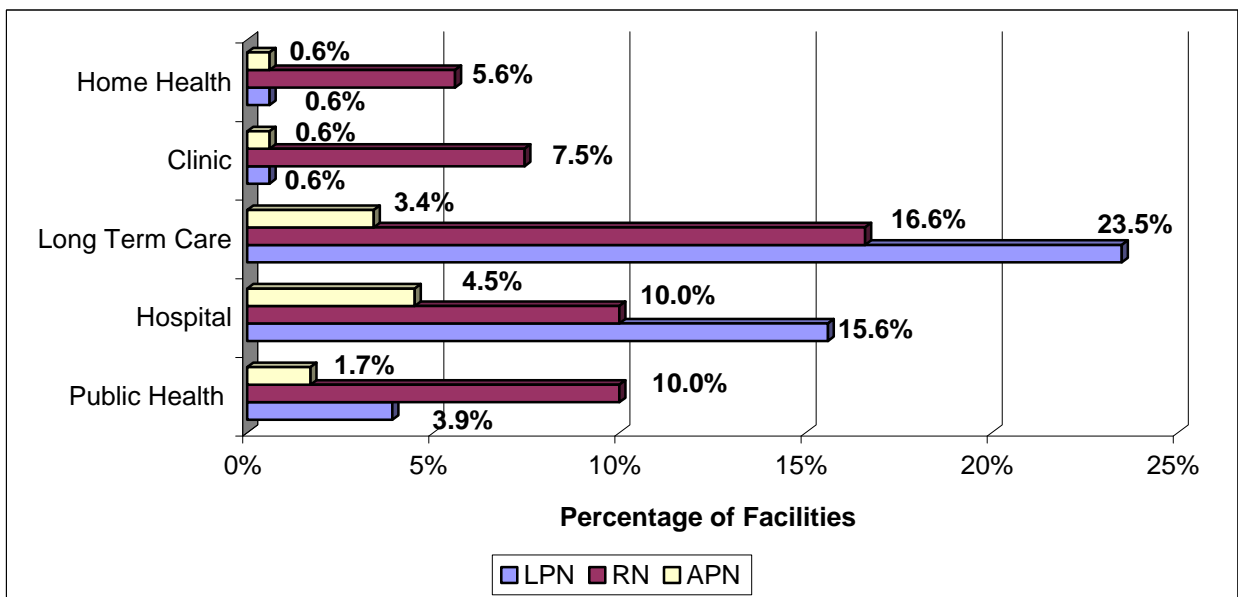
A series of questions inquired about the support facilities provide for nursing continuing education. The majority of North Dakota facilities (77%) provide financial support to nurses for CE (see Figure 18).

Figure 18: Financial Support for Continuing Education



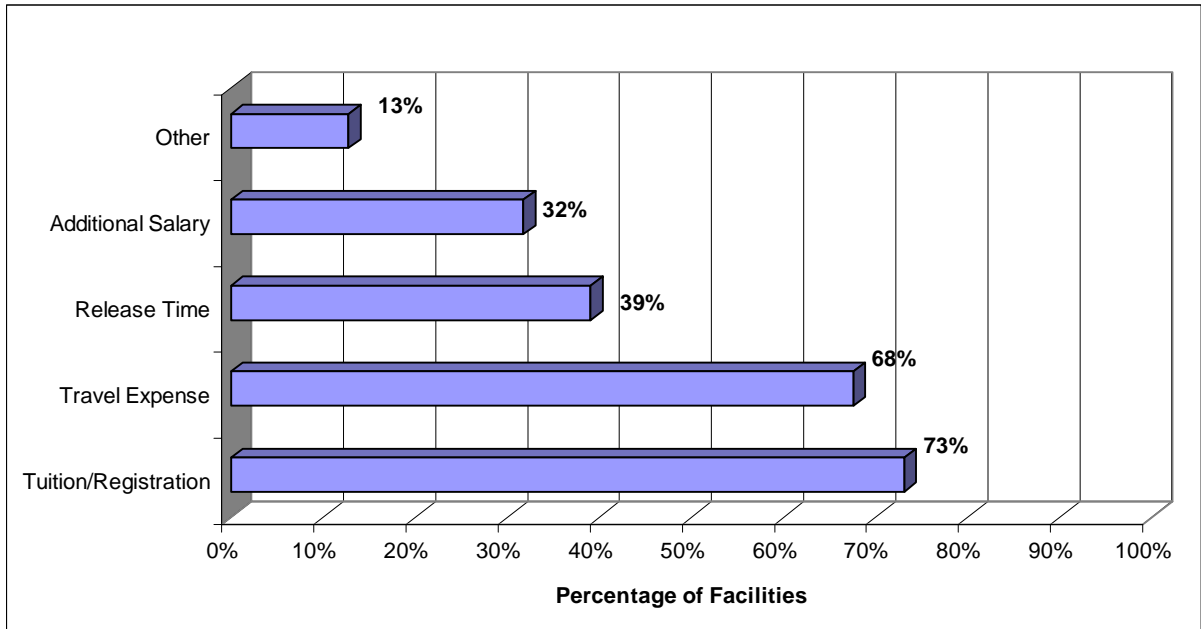
Long-term care facilities most frequently reported providing financial support to LPNs for CE. APNs are least likely to receive funding (see Figure 19).

Figure 19: Financial Support for Continuing Education by Nursing Level



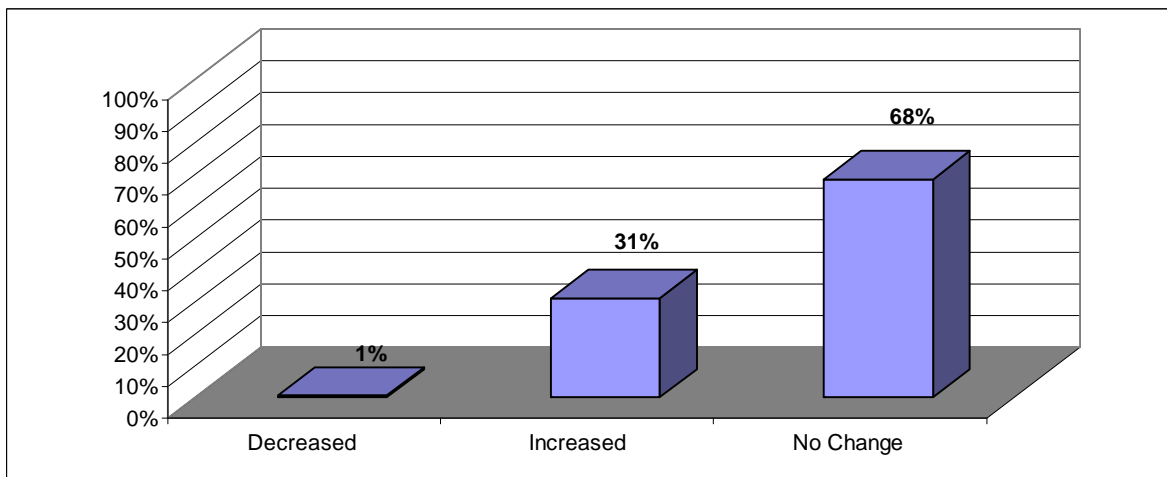
Most facilities indicated that they provide several types of support for nurses for enrolling in CE. Seventy-three percent (73%) of facilities stated they provide tuition and/or registration support. Thirty-two percent (32%) of facilities provide additional salary. Thirteen percent (13%) of facilities provide some type of other support for their nurses including: onsite training/audio, visual, and web-boards, or attendance on work time (see Figure 21).

Figure 20: Type of Support Provided by Facilities for Nursing Continuing Education



Facilities were asked to report on the effects of the mandatory continuing education requirements. Most responding facilities (68%) indicated there is no change in competency since the implementation of CE (see Figure 20).

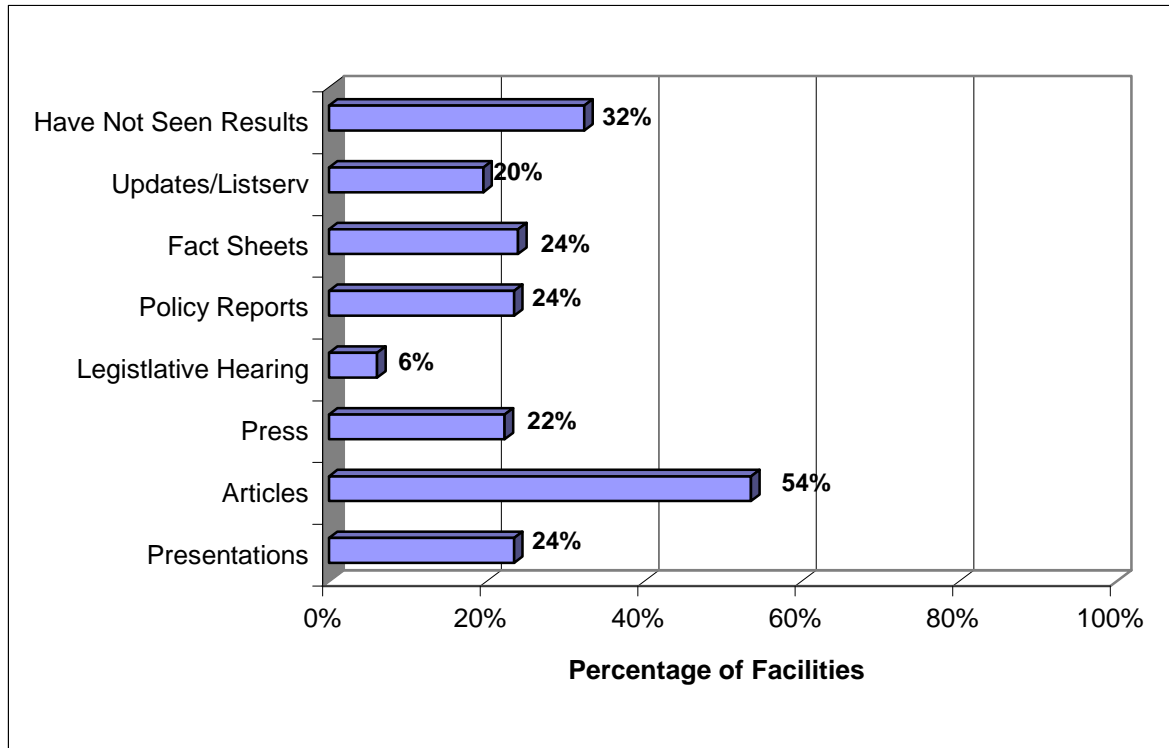
Figure 21: Facilities Reported Change in Nursing Competency since Mandatory CE



IMPACT AND USE OF THE NURSING NEEDS STUDY

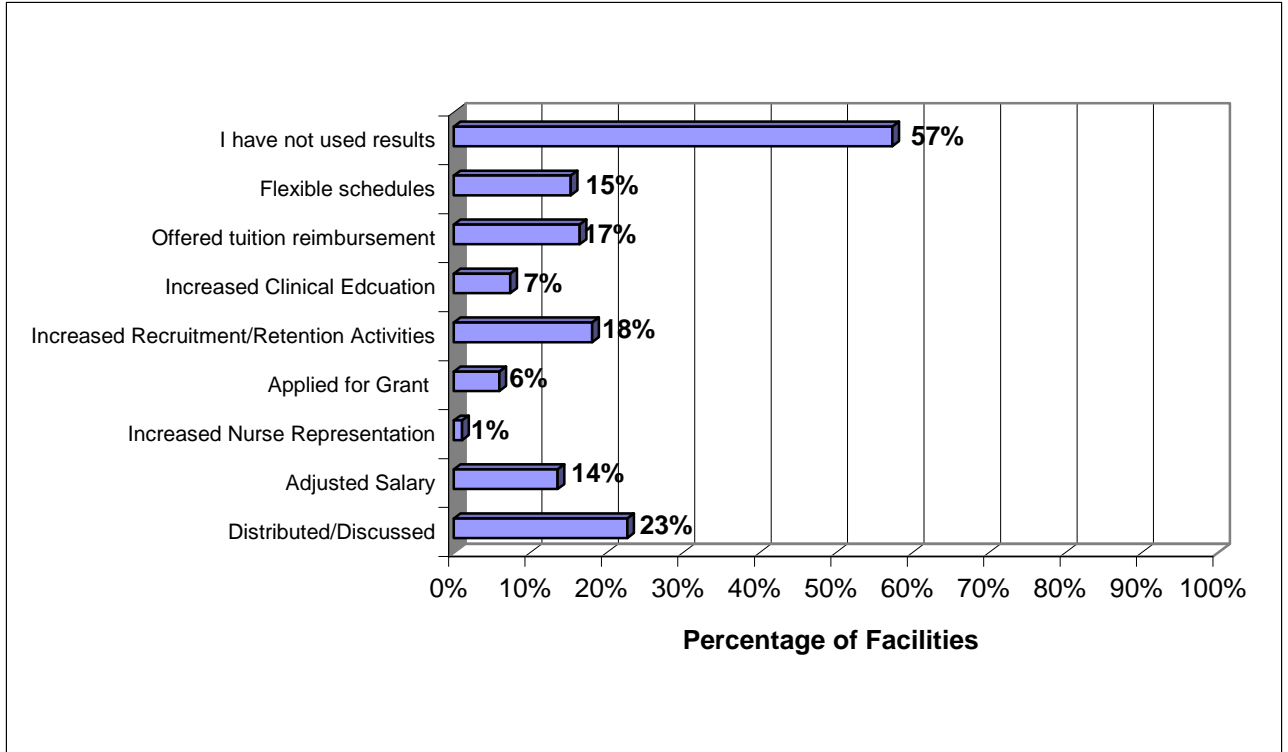
Facilities were asked to indicate how they have seen the results of the Nursing Needs Study. The majority of facilities, fifty-four percent (54%), have seen the results of the study through articles in professional newsletters (e.g., North Dakota Board of Nursing Dakota Nurse Connection, North Dakota Nurses Association Prairie Rose, and The Informer). Thirty-two percent (32%) of facilities reported that they have not seen the results.

Figure 22: Ways in which the Nursing Need Study has been disseminated



Facilities were asked to indicate how they have used the results of the Nursing Needs Study. The majority of facilities, fifty-seven percent (57%), have not used the results of the study. Twenty-three percent (23%) have distributed or discussed the results.

Figure 23: Use of the Nursing Needs Study



SURVEY CONCLUSIONS AND POLICY IMPLICATIONS

Hospitals, home health, and public health facilities indicated that they spent less time recruiting nurses than the previous years. According to economists, vacancy rates above five to six percent are indicative of a shortage. Vacancy rates decreased this year for RNs to three percent. Turnover rates, which are used to determine the amount of staffing fluctuation that is occurring in health care facilities, increased to 19 percent for RNs. This may indicate that there was a decrease in vacant nursing positions, yet an increase in the fluctuation (i.e., turnover) of nurses filling these positions.

This is paired with some indication of a worsening shortage of LPNs. The statewide vacancy rate for LPNs continued to increase to nine percent. The statewide turnover rate increased for the LPNs to 31 percent after a decrease in 2006. This may indicate that more LPNs are leaving their current positions and that the total number of unfilled positions throughout the state has increased.

Salary continues to be a prominent issue in the nursing field. In the case of RNs, nurses with a greater amount of education (nurses with bachelor level RN degrees) receive neither a greater starting salary nor a greater average salary when compared to RNs with less education (associate degree RNs). Nurses in rural and semi-rural areas also continue to receive less compensation compared to those in urban areas. There are also differences in salaries across sections of the state with LPNs and RNs receiving the lowest average starting wages in the Southwest section of the state and APNs receiving the lowest average starting wage in the Southeast section of the state. The lowest average hourly wages are in the Southwest part of state for LPNs and RNs and in the Southeast for APNs. Interestingly, in the Southwest quadrant, the starting hourly wage was higher than the average hourly wage for both LPNs and RNs.

There is also a difference between nursing level and likelihood to receive financial support for continuing education (CE) credits. In all types of facilities, RNs and APNs are more likely to receive financial support for mandatory CE credits than LPNs. Most facilities indicate that they have not seen a large increase in competency since the implementation of mandatory CE.

The Nursing Needs Study has been disseminated through various methods (listservs, fact sheets, press, legislative hearings, etc.) and facilities indicate that the results of the study have been viewed most often through articles in printed media. Still, many facilities reported they have not seen the results of the study. Similarly, more than half of facilities have not used the results of the study. When the study has been used in various facilities, it most often has lead to discussion of the study's finding, increased retention and/or recruitment activities, or offering tuition reimbursement.

Policy Implications

- Although data indicate a slight decrease in the severity of the RN shortage, this may be a phenomenon associated with the particular facilities that participated in this survey research. This also applies to the slight increase in LPN shortage found in this year's survey. Even with changes in LPN and RN shortage indicators, it is clear that some rural areas are facing a severe nursing shortage.
- Facilities should examine their salaries to determine whether nurses are rewarded for obtaining greater levels of education. Efforts should be increased to provide equality in salary for nurses working in rural areas of the state.
- Methods to disseminate the results of the Nursing Needs study should be explored in order to capitalize on the information provide by the dynamic findings.

FACILITY SURVEY METHOD

This project was designed to assess nursing workforce demand and the characteristics of potential shortages in North Dakota health care facilities. To better understand current nursing workforce a survey was sent to the Nursing Directors at all hospitals and long-term care facilities (nursing homes and basic care facilities) in North Dakota. A survey was also sent to the administrators of all regional public health facilities, home health facilities, and clinics in North Dakota.

This survey was developed to provide a comprehensive picture of the nature of nursing employment and potential shortages throughout the state and to enable comparisons to be drawn between health care facilities, rural and urban areas in North Dakota and national data. Survey questions were derived from national surveys including the Robert Wood Johnson Foundation Nursing Shortage Study: Chief Nursing Officer Interview Tool (Kimball & O'Neil, 2002), the American Organization of Nurse Executives Acute Care Hospital Survey of RN Vacancy and Turnover Rates (HSM Group, 2002) and the American Journal of Nursing Survey (Shindul-Rothschild, Berry & Long-Middleton, 1996). None of the national Director of Nursing surveys addressed LPNs, so several of the NDNN questions were modified to be appropriate for LPNs. Questions on the NDNN survey were also modified to be appropriate for the various types of facilities that were queried.

Mailing lists for the hospital and long-term care facilities were derived from the 2006-2007 North Dakota Medical Services Directory. Participants received the survey by mail and were asked to mail the survey back to the Center for Rural Health in a postage-paid envelope. The survey was accompanied by a cover letter outlining the purpose of the study. The surveys were sent in October 2006 and respondents were asked to return the survey within two weeks. Those participants that had not returned their survey within one month were sent another copy and given two weeks to respond. Facilities that did not respond to the second mailing were sent a postcard reminding the organization to return the survey or contact the Center for Rural Health if a new copy of the survey was needed. At this time, facilities that responded in previous years were contacted via telephone and urged to return their survey.

- The actual responses were given for each facility and for each level of nurses in the facility. These values were used to calculate the vacancy and turnover rates according to facility type.
- Total percentages were obtained by computing the average of all data points and rounding the results rather than by averaging percentages across the rural—urban continuum.
- If the response contained a range of numbers, the response was converted to a median number (example: the range 2-4 was reported as 3)
- Facilities that did not employ a certain category of nurse or did not provide a response to the survey question were excluded from analysis on items relating to that specific category.

Definitions

¹When appropriate, data were divided by Urban Influence Codes (Ghelfi & Parker, 1997). Urban Influence Codes are a method of classifying U.S. counties according to the size of metropolitan areas, proximity to metropolitan areas and the population of the largest city within the county. There are nine codes including two metropolitan county categories and seven non-metropolitan county categories. Due to the rural nature of North Dakota, several of the categories include no counties and some categories have a small number of counties represented. North Dakota counties were collapsed as follows into three larger categories based on their original Urban Influence Codes (see Table 1).

- Urban counties: Those small metropolitan counties with fewer than one million residents (4 counties).
- Semi-rural counties: Those non-metropolitan counties adjacent or not adjacent to a small metropolitan county with a town containing at least 2,500 residents (20 counties).
- Rural counties: Those areas not adjacent to a small metropolitan area, which does not contain a town with at least 2,500 residents (29 counties).

²For each facility setting, the following options were given for level of nurses employed at that setting: licensed practical nurses (LPN); registered nurses who primarily provide direct patient care (DRN); RN managers or assistant managers (MRN); Specialty RNs, such as diabetes educators, infection control nurses (SRN); public health nurses (PHRN) and advanced practice nurses (APN).

FACILITY SURVEY REFERENCES

AHA Commission on Workforce for Hospital and Health Systems (2002). In Our Hands: How Hospital Leaders Can Build a Thriving Workforce. Chicago: American Hospital Association.

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Ghelfi, L. & Parker, T. (1997). A County-level measure of urban influence. Rural Development Perspectives, 12. (2) 32-41.

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Kimball, B. & O'Neil, E. (2002). Health Care's Human Crisis: The American Nursing Shortage. Robert Wood Johnson Foundation Health Workforce Solutions.

Prescott, P. (2000). The Enigmatic Nursing Workforce. Journal of Nursing Administration. Volume 30, No. 2.

Shindul-Rothschild, J., Berry, D. & Long-Middleton, E. (1996). Where have all the nurses gone? Final results of our patient care survey. American Journal of Nursing, 96. 25-39.



2006 North Dakota Nursing Needs Study Facility Survey

Please answer all questions as completely as possible. Several questions include tables. For these questions you will need to only answer those questions pertaining to your facility. **If your organization includes facilities in multiple counties, please complete one survey per county including information about all of your facilities within that county.** The tables include areas for information from hospitals (HOS), long term care, basic care facilities and assisted living facilities (LTC), clinics (CL) and home health care facilities (HH). Leave all areas that do not apply to your facility blank.

For each setting, space is included for answers regarding LPNs; Direct care RNs (DRN: RNs who primarily provide direct patient care) RN Managers (MRN: nurse managers or assistant managers), Specialty RNs (SRN: diabetes education, infection control etc.) and Advance Practice Nurses (APNs). Please answer separately for each of these and leave blank those categories you do not employ. If you have any questions about completing the survey, please contact Dr. Patricia Moulton at 701-777-6781.

1. Where is your facility/facilities located? County _____

Please indicate your position within your organization _____

Please indicate how long you have been in the current position _____

2. Please indicate the number of facilities under each category included on this survey.

	HOS	LTC	CL	HH
# of Facilities				

3. How long (number of weeks) on average does it take you to fill a vacant position for each level of nurse?

For example: If it takes you 2 weeks to fill a vacant LPN position in your clinic, write a 2 under CL and LPN.

	HOS					LTC					CL					HH				
	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN
# of weeks																				

Note. LPN: Licensed Practical Nurse DRN: Direct Care RN MRN: Manager RN SRN: Specialty RN APN: Advanced Practice Nurse

4. Does your organization provide financial support for nurses to obtain mandatory continuing education credits? ____ Yes ____ No

Please indicate with an X which level of nurse and in which types of facilities that you provide financial support for continuing education.

HOS					LTC					CL					HH				
LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN

If yes, please indicate what type(s) of support your organization provides.

____ Tuition/Registration ____ Travel Expenses ____ Release Time
 ____ Additional salary for attendance to continuing education classes ____ Other _____

5. Indicate from the following, your perception of the competence of nurses since the implementation of mandatory continuing education.

____ No change in competence ____ Increased competence ____ Decreased competence ____ Other _____

6. Indicate the total number of FTE (Full-time equivalent) nurse resignations from your facility (voluntarily left employment), resignation/reassignment to a different position within your facility (resigned from one position and started a new position- did not leave employment at the facility) and terminations (fired, laid off) for 2005 (Jan 1, 2005-Dec. 31, 2005) for your facility for each setting and category of nurse.

	HOS					LTC					CL					HH				
	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN	LPN	DRN	MRN	SRN	APN
Total # FTE Resignations from your facility in 2005																				
Total # FTE resignation/reassignment to a different position within your facility in 2005																				
Total # FTE terminations in 2005																				

7. Please indicate the current number of FTE (full-time equivalent=40 hours/week) nurses for each setting and category of nurse. Please note that the number of full-time FTEs, part-time and vacant FTEs should equal the total # of Budgeted FTEs.

Setting	H O S					L T C					C L					H H				
	L P N	D R N	M R N	S R N	A P N	L P N	D R N	M R N	S R N	A P N	L P N	D R N	M R N	S R N	A P N	L P N	D R N	M R N	S R N	A P N
Total # of Budgeted FTEs																				
How many FTEs are filled with full-time (32 or greater hours/week) nurses?																				
How many of FTEs are filled with part-time (less than 32 hours/week) nurses?																				
Total number of vacant nurse FTEs																				

In your opinion, is the need for each category of nurse greater than what you are budgeted for? ___Yes___ No Please explain.

8. List the current starting and average hourly wage for each nurse category in your facility for each setting and category of nurse. The first row requests starting wages (average hourly wage paid to nurses when they are first hired as a new graduate) and the second row requests average wages (average hourly wage paid for all nurses).

	H O S					L T C					C L					H H				
	1 year LPN	2 year LPN	ASRN	BSN	APN	1 year LPN	2 year LPN	ASRN	BSN	APN	1 year LPN	2 year LPN	ASRN	BSN	APN	1 year LPN	2 year LPN	ASRN	BSN	APN
Starting Hourly Wage																				
Average Hourly Wage																				

9. The North Dakota State Legislature and the North Dakota Board of Nursing are interested in determining the impact of the Nursing Needs Study. The following questions are designed to measure impact of the study in health care facilities.

a. Many dissemination vehicles have been used over for the study over the last four years. Please indicate how you have seen the results of this study (please check all that apply).

_____ I have not seen any results from the North Dakota Nursing Needs Study.

_____ Presentations: Power point presentation at conferences or meetings
 Example: North Dakota Nurses Association Presentation, North Dakota Board of Nursing Presentation

_____ Articles in professional newsletters you read.
 Example: NDBON Dakota Nurse Connection, NDNA Prairie Rose, The Informer

_____ Press: Information that appeared about the study in newspapers, television or radio

_____ Legislative Hearings: Testimony presented before the North Dakota Interim Health Care Budget Committee

_____ White Papers/Policy Reports: Results of each survey for each year, distributed on the web site and some in hard copy.
 Example: Health Care Facility Survey Results

_____ Fact Sheets: Two-page sheet giving a summary of supply and demand information, distributed on web site and in hard copy
Example: Rural Health Facts: North Dakota Health Professions: Nursing Supply

_____ Rural Health Updates and Listserv Postings: Information distributed by the Center for Rural Health via email to a wide audience.

_____ Other: Please indicate any other ways in which you have seen results of the study.

b. How have you used results from the North Dakota Nursing Needs Study in your facility? Please check all that apply and indicate how you have used the results. For example if you checked adjusted salary or benefits please indicate what changes you made.

_____ I have not used any results from the North Dakota Nursing Needs Study.

_____ Distributed or discussed results/reports to employees/colleagues (e.g., gave results to the CEO). _____

_____ Adjusted salary or benefits. _____

_____ Applied for grant funding. _____

_____ Increased nurse representation. _____

_____ Increased recruitment / retention activities. _____

_____ Increased clinical education of nursing students. _____

_____ Offered tuition reimbursement or loan repayment for nurses. _____

_____ Flexible schedules for experienced nurses. _____

_____ Other. _____

10. Any other comments or suggestions?

Thank you for completing our survey. Please return to the Center for Rural Health in the postage-paid envelope enclosed.