Center for
Rural Health

University of North Dakota
School of Medicine & Health Sciences

North Dakota Nursing Supply and Demand

North Dakota Human Services Interim Committee

Bismarck, North Dakota

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July 1, 2008

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

Thank you for the opportunity to present information about nursing supply and demand today as a part of the Nursing Education Consortium. My name is Dr. Patricia Moulton and I am from the UND School of the Medicine and Health Sciences Center for Rural Health. Today we are pleased to present the newest results of our supply and demand projections from the North Dakota Nursing Needs Study. This study is funded by the North Dakota Board of Nursing.

Currently we have a small shortage of RNs. Looking ahead in the near future it is projected that the state will have an adequate supply of RNs as compared to demand (see Figure 1). These projections may be influenced by a number of factors such as maintaining similar RN graduation rates, financial status of health care facilities, variation in the strength of the economy and recruitment from border states. The projection model that we are using is utilized at the federal level. This model likely underestimates demand. It is important for you to note that the use of this model likely underestimates demand in states with large rural populations and those states with large elderly populations such as North Dakota. Because of the variation associated with the model, we are presenting the demand estimate as a range from low to high demand[1]. In addition, as with all projection models, estimates become less precise in the later years of the projection.

Figure 1: North Dakota Registered Nurse FTE Supply and Demand Projections
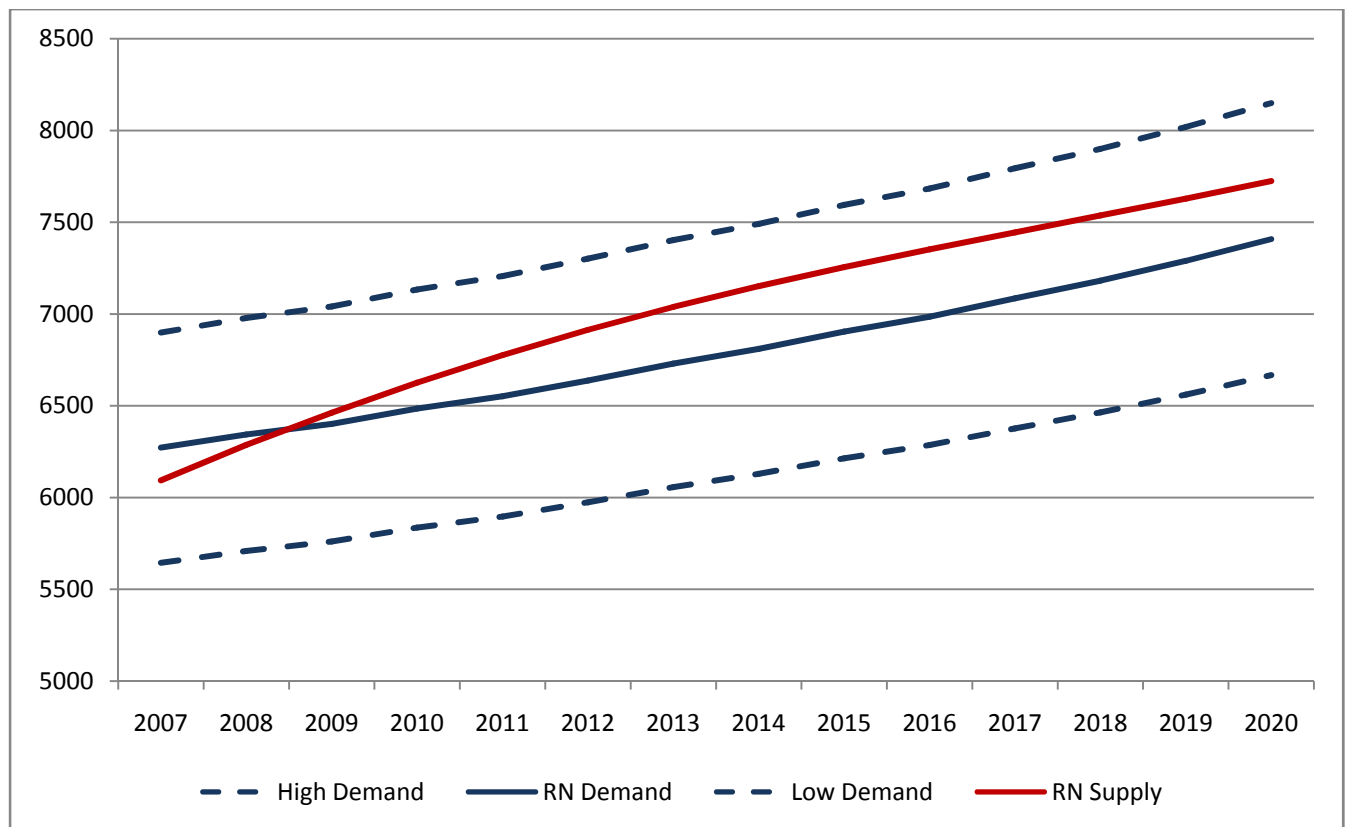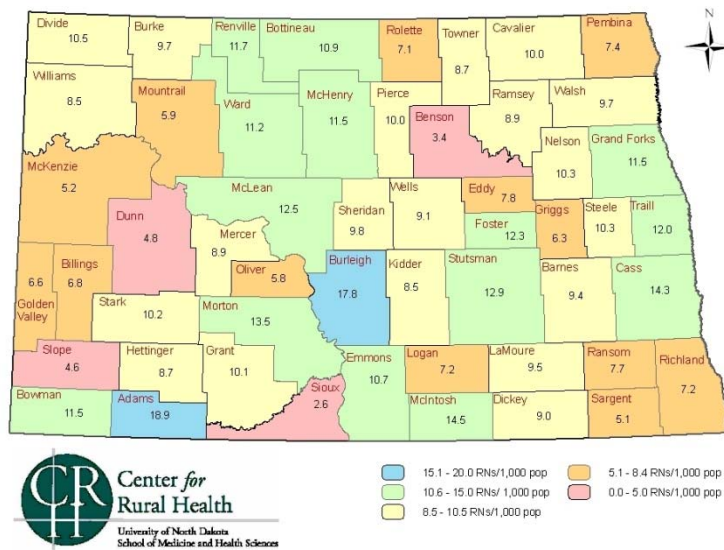

The estimate of supply and demand utilized the USDHHS Health Resources and Services Administration National Center for Health Workforce Analysis Nursing Supply and Demand software. For more information about the methodology for these projections please visit the website at ruralhealth.und.edu for a full report which will be posted by July 4, 2008.

RN Supply

The number of licensed RNs per population has increased during the last several years and in 2006 was 14.35 RNs per 1,000 people which is greater than the national average of 8.48 per 1,000[2]. However, maldistribution of RN supply remains a concern with 17 of 53 counties having less than the national average of RNs per 1,000 people (see Figure 2).

Figure 2: North Dakota RNs per 1,000 Population

Data based on 2007 Population Estimates and 2007 North Dakota Board of Nursing Licensure Data. 6/08

All RN nursing education programs increased their enrollments in the last three years and this has resulted in an increase in the number of RN graduates statewide (see Figure 3).

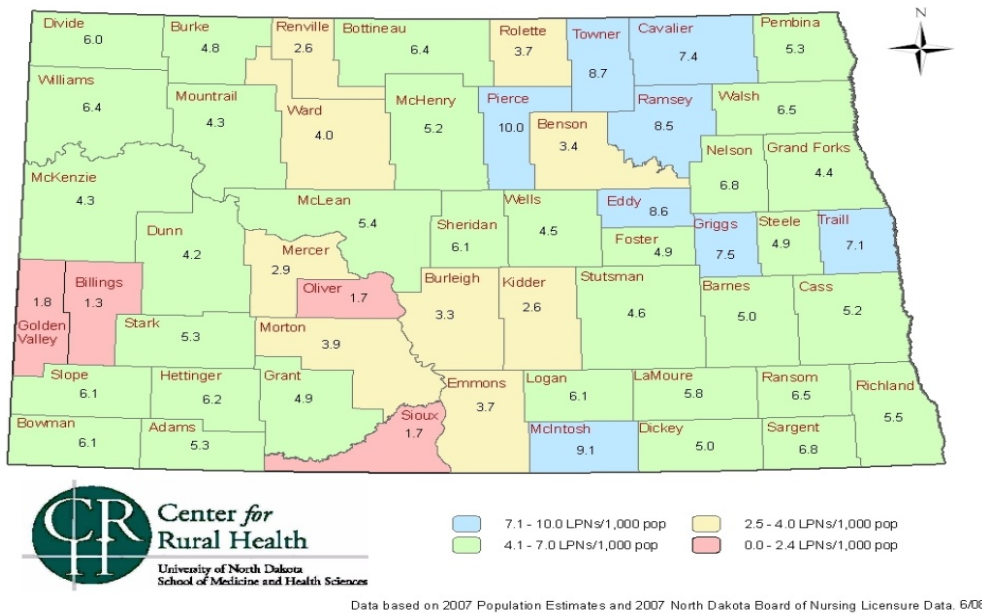**Figure 3: North Dakota Nursing Education Graduates: RNs**
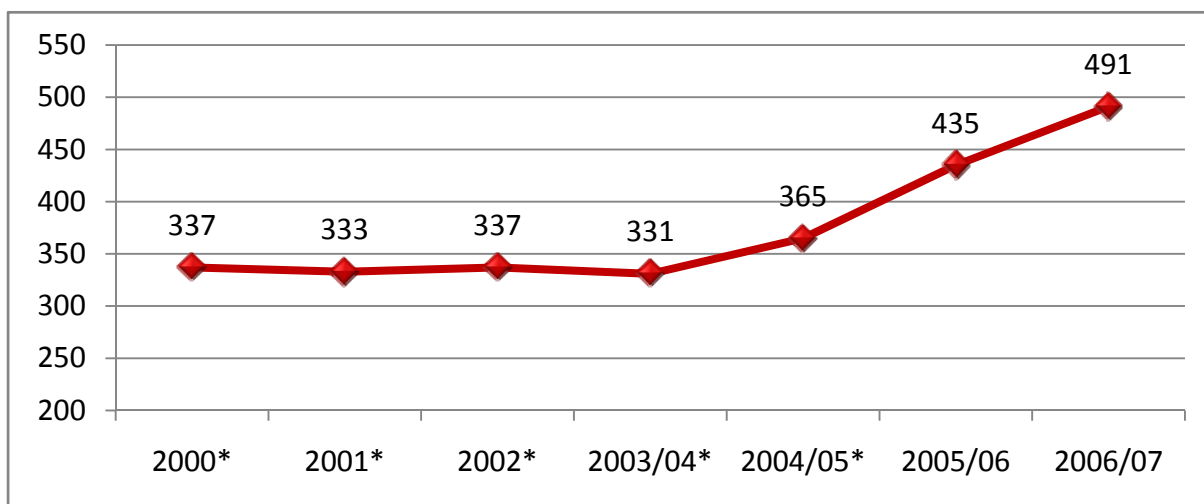
Note. The 2000-2005 graduate numbers also include graduates from Concordia College as a part of the Tri-College Program.

The North Dakota average age of RNs has decreased to 44 years. This is below the national average of 47 years[2]. Twenty-five percent of North Dakota RNs plan to retire by 2016.

LPN Supply

The number of LPNs per 1,000 people has increased slightly over the last six years to 5.65 LPNs per 1,000 people and is consistently above the national average of 2.4 LPNs per 1,000.[3] However, distribution of LPNs varies widely across the state with four counties having less LPNs than the national average (see Figure 4).

Figure 4: North Dakota LPNs per 1,000 Population

Data based on 2007 Population Estimates and 2007 North Dakota Board of Nursing Licensure Data. 6/08

The number of LPN graduates has decreased slightly from 2000 to 2007 (see Figure 5).

**Figure 5: North Dakota Nursing Education Graduates: LPNs**
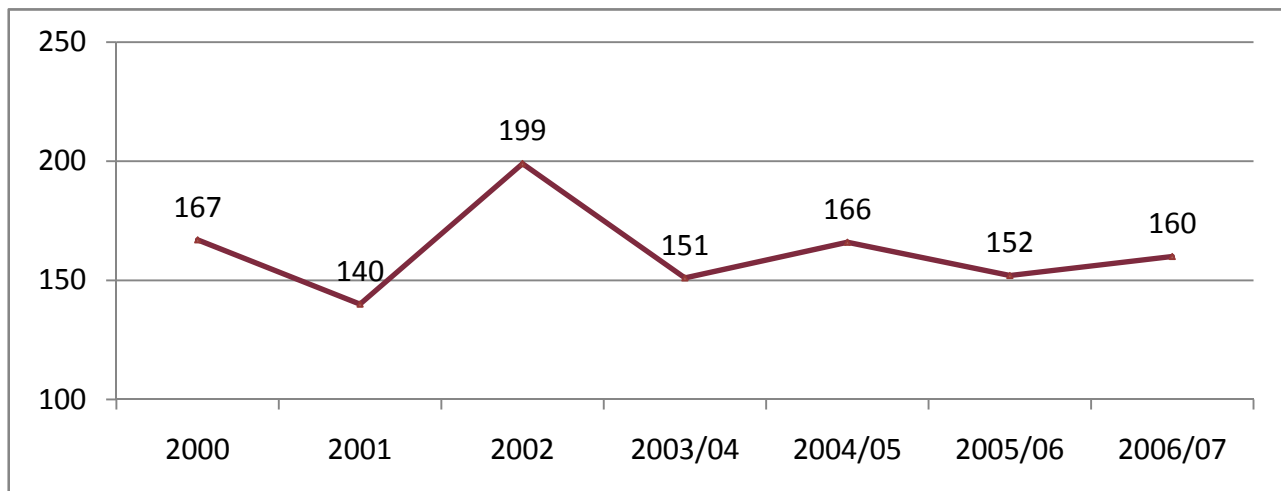
The average age of LPNs in North Dakota is 42 years. This is lower than the national average of 43 years[4]. Twenty-five percent of LPNs plan to retire by 2017.

LPN and RN Demand

According to economists, a full workforce in most industries exists when vacancy rates are below five to six percent [5]. A shortage is considered to be present at a sustained vacancy rate above this level. North Dakota RN vacancy rates have decreased over the last three years to 3% in 2007 (see Figure 6). The North Dakota hospital RN vacancy rate is 3% which is less than the national average of 8%.[6] It is important to note that while RN vacancy rates have been decreasing, LPN vacancy rates have increased over the last three years.

Figure 6: North Dakota Statewide Vacancy Rates
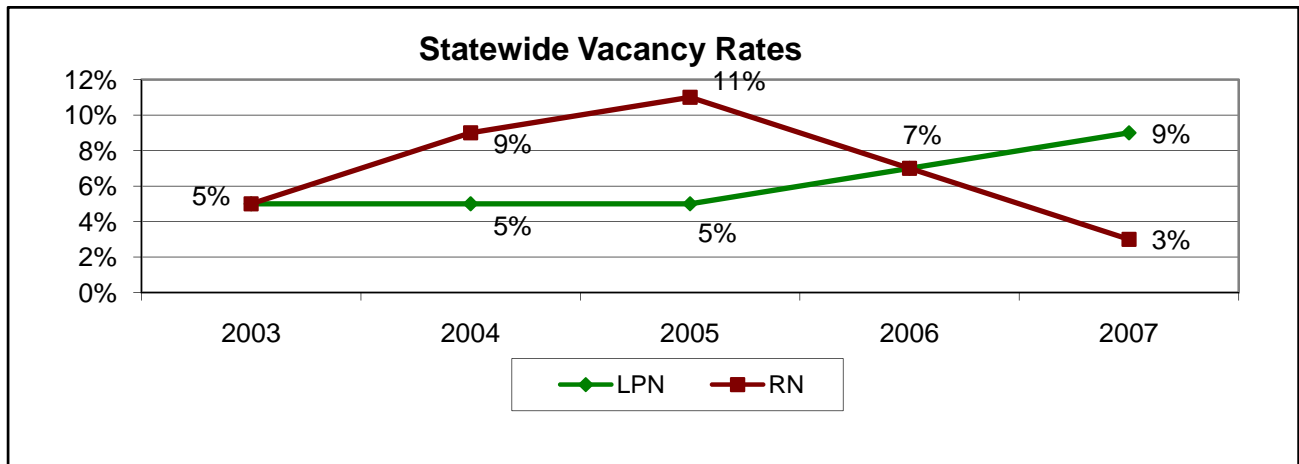
The percentage of RNs working full-time (36-40 hours/week) has increased from 11% in 2004 to 43% in 2007. LPNs have had a similar increase from 11% in 2004 to 49% in 2007. The percentage of RNs with a second job has also declined from 33% in 2003 to 16% in 2007 with LPNs having the same pattern from 23% in 2003 to 14% in 2007. This indicates that more nurses are increasing their hours at one job and working at less facilities than in 2003.

Turnover rates reflect fluctuation in staffing in healthcare facilities. The statewide turnover rate for RNs was 19 percent. It is important to note that the statewide turnover rate for LPNs was 31% in 2007. This is higher than the statewide turnover rate in previous years (see Figure 7). The turnover rate for RNs and LPNs working in North Dakota hospitals was 20% and 25% which is greater than the national average nurse turnover rate in hospitals which is 8.4% [7]

Figure 7: North Dakota Statewide Turnover Rates
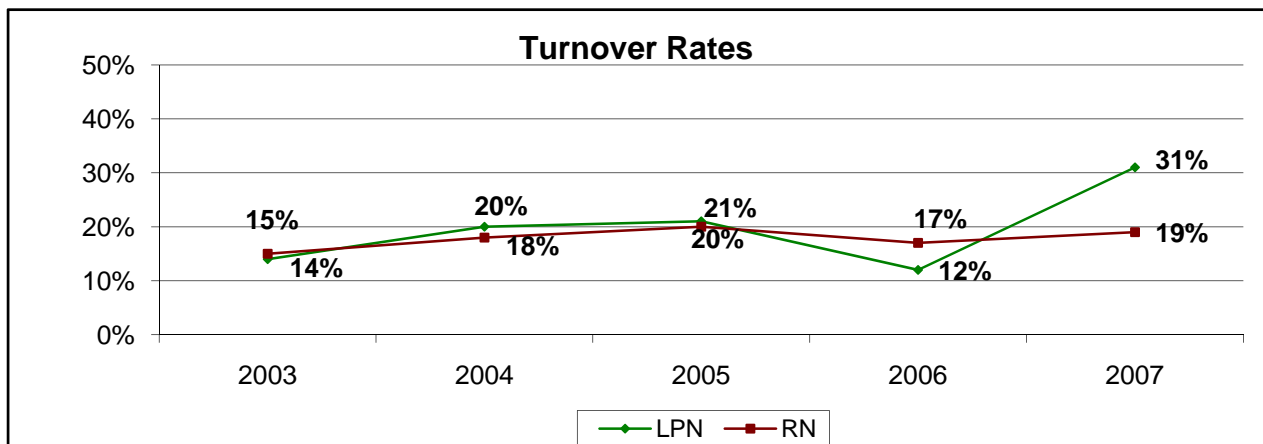
Nursing Education Program Faculty

I am pleased to share with you some preliminary nurse faculty findings. More information regarding faculty including faculty salaries will be available July 18th.

To begin, there are 133 full-time and 176 part-time faculty working in North Dakota's nursing education programs. This number includes graduate students and clinical faculty. We do not have a clear picture regarding the faculty demand. Anecdotal information suggests that some programs have adequate faculty, while others have several vacancies (see Table 1).

Table 1: Nursing Education Program Faculty

	2004		2005/2006		2006/2007	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
BSN & Higher	97	103	91	93	99	116
AD - RN Programs			11	9	11	12
LPN Program	25	69	21	42	23	48

The average age of North Dakota nursing faculty dropped to 48 years in 2008 as compared to 51 years in 2003. This is younger than the national average faculty age of between 51 and 59 years[8]. It is important to note that one-fifth of faculty plan to retire by 2014.

As is expected with an increase in enrollment, full-time nursing faculty indicated they work an average of 53.1 hours per week. 54% of faculty have been contacted by a recruiter regarding a faculty program out of state in the past year. Examples of offers include:

> *"Salary $90,000/year plus $300,000 housing allowance."*

> *"As much as $100,000 for a 9 month full time position with the guarantee of no summer work required. It came with the guarantee of no work on weekends and holidays. "*

 Only 1/3 of RN students and less than half of LPN students expressed an interest in pursuing a career in a future faculty role. When practicing nurses were asked, 19% of RNs/APNs and 9% of LPNs in 2007 indicated an interest in pursuing a future faculty role

In summary, these findings indicate:

- ❖ Continued support of North Dakota's nursing education programs in particularly support for the recent expansion of class size will play an important role in ensuring an adequate supply of nurses in the future.
- ❖ The distribution of an inadequate number of nurses across rural areas of the state remains a concern.
- ❖ There is some indication of a worsening LPN shortage. This should be closely monitored.
- ❖ Increased turnover rates of nurses in health care facilities indicate a need to improve the work environment and maximize retention of nurses.
- ❖ Nursing education programs are heavily recruiting North Dakota faculty. Consequently, additional incentives are needed to ensure enough faculty will remain in North Dakota to support our nursing education programs.
- ❖ Given the number of factors that can impact supply and demand, it is important to collect data and track changes over time.

References

1. Skillman, Andrilla & Hart, 2007.

2. Health Resources and Service Administration, 2004.

3. US Health Workforce Profile, 2006.

4. Seago, Spetz, Chapman, Dyer & Grumbach, 2004.

5. Prescott, 2000

6. American Hospital Association, 2007.

7. PricewaterhouseCoopers Health Research Institute, 2007

8. American Association of Colleges of Nursing, 2007