

One outcome of our state's shortage of health care workers has been the need for more information about the current supply and demand of different professionals. For that reason, this licensed practical nurse workforce profile was created to provide Minnesota policy makers, employers, educators, consumers, and others with an overview of current information.

Licensed Practical Nurse Workforce Profile

Findings

- Even with a small increase in real wages, the demand for LPNs is strong — 37 percent growth in employment (1986 to 1999), 1,650 current openings (Fall of 2000), and projected 15 percent growth in employment by 2008.
- The number of LPN graduates from Minnesota schools may not be keeping pace with employers' demand for workers. In 1997, 1,260 LPNs graduated from Minnesota schools.
- Instead of entering the workforce upon graduation, more LPNs are choosing to remain in school and pursue RN training.
- The number of current LPN license holders not employed in nursing who are willing to promptly return to the LPN workforce is small (2 percent).
- Minnesota LPNs have a higher rate of part-time employment as compared to the rest of the nation (50 percent versus 25 percent).

Licensed practical nurses (LPNs) work in a variety of health care settings, usually under the supervision of a registered nurse or physician. Their duties often include giving prescribed medications, treatments and some injections. They may also monitor equipment, take temperatures and blood pressure, change dressings, maintain patients' charts, perform routine lab work, serve meals, give baths and change bed linens.

In 1999, licensed practical nurse was the second largest health care occupation (after registered nurse) in both the nation and the state with just under 700,000 jobs nationally and 19,000 jobs in Minnesota.¹ Are there enough LPNs to meet the needs of our state's employers and consumers? An examination of current information on the supply and demand of LPNs indicates that employer demands presently outweigh the available supply of these nurses.

The Demand for Licensed Practical Nurses

One of the strongest indicators of the demand for an occupation is wage growth. During the 1990s the median wage for an LPN increased from \$10.52 in 1990 to \$13.86 in 2000 — a 2.6 percent increase in real wages.² While wage growth for LPNs did keep pace with inflation, it did not increase at a rate similar to other health care workers — real wages for RNs grew by 20 percent during the same period. This limited growth in wages is partially explained by the higher concentration

of LPNs in certain financially constrained sectors of the health care industry, namely long-term care. See the Workforce Composition and Distribution section below.

Even with limited wage growth, other measures — employment growth, current job vacancies and future employment growth — point to the strong demand for LPNs. In particular, LPN employment in the state has grown by 37 percent over the last thirteen years (1986 to 1999) and is expected to increase an additional 15 percent by 2008. With regard to the current level of demand, employers reported that they were trying to fill an estimated 1,658 LPN openings across the state in the fall of 2000.

The majority of these openings (59 percent) were in the Twin Cities seven county region. In terms of difficulty, Twin Cities employers reported having to wait longer to find LPNs compared to employers in Greater Minnesota. The longer hiring period for Twin Cities employers may be due in part to the distribution of LPN programs; approximately three-quarters of these programs are located in Greater Minnesota.

Overall, 84 percent of LPN openings remained unfilled for more than two months or were considered always open by employers. When compared to an earlier study, which found that two-thirds of all LPN positions were unfilled for more than two months or considered always open, this new finding reinforces the fact that employers are having a very difficult time hiring LPNs.³

The Supply of Licensed Practical Nurses

While demand for LPNs continues to be strong, growth in the supply remains largely unchanged. When estimating the supply of LPNs, it is important to consider two types of information: the number of people graduating from post-secondary institutions and the composition of the current LPN workforce.

Nursing Graduation and Licensing Trends

Similar to other health care occupations, LPNs have well-defined educational and professional licensing requirements. However, the length of required training is much shorter than other health care occupations. This factor is important and suggests that state educational programs could meet growing employer demand for LPNs more rapidly than for other health care workers.

When examining graduation rates it is important to remember that instate graduates do not account for all LPNs in the workforce. Nevertheless, the number of LPN graduates that have completed the required one to two-year training programs does provide one estimate of nursing program capacity and the current available supply of new workers. In Minnesota, there are currently 26 approved programs through the Minnesota State Colleges and Universities (MnSCU) system that offer LPN training.

Between 1992 and 1997, the number of individuals completing LPN programs steadily declined from reaching a peak in 1993.⁴ In addition, the number of Minnesota graduates pursuing a state LPN license has also dropped during the 1990s. See Figure 1. In fact, since 1994 the number of graduates declined by 30

percent. According to the State Board of Nursing, the number of candidates pursuing state licensure grew steadily through 1994, but dropped considerably between 1995 and 1999.

What caused this decrease in LPN graduates and the number of graduates pursuing licensure? Staffing changes in hospitals offer one possible explanation for this decline. During the 1990s, many hospitals reduced the number of LPNs they employed in favor of a nursing staffing pattern that relied more heavily on RNs. Only recently have hospitals begun to reevaluate their use of LPNs in their nursing staffing pattern.

While the number of LPN graduates has generally decreased across the state, graduation rates at a few institutions, such as Lake Superior College in Duluth, Alexandria Technical College and St. Cloud Technical College, have remained steady.⁵ Even though some programs continue to graduate LPNs at a steady rate, some graduates are choosing to remain in school to pursue an associate or baccalaureate degree in nursing instead of seeking employment as an LPN. For example, all of the students who recently completed the LPN program at the Minneapolis Community and Technical College (the oldest practical nursing program in the nation) indicated that they would return for additional nursing training. Regardless of the reason for the decline in graduates, when considered alongside trends in the growth of LPN employment and the estimates of current demand, these data suggest that the state's post-secondary educational system may not be keeping pace with the demand for LPNs.

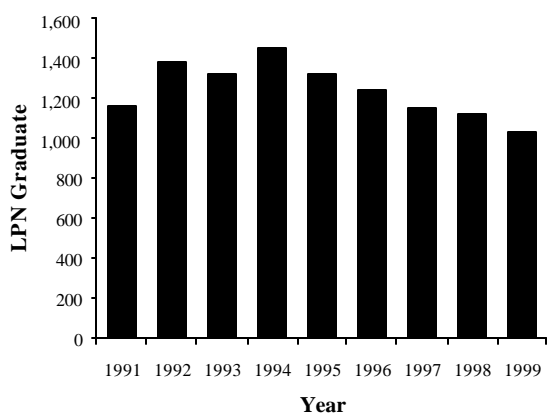
Licensed Practical Nurse Workforce Composition and Distribution

Data collected through the Minnesota Health Service Personnel Survey⁶ provide a wealth of information on the current composition and geographic distribution of LPNs in Minnesota.⁷ An examination of these data reveal a number of important factors about the supply of LPNs, including the small number of inactive license holders willing to return to the workforce, the low rate of full-time employment, and important aging trends in the workforce.

Overview

Of all relicensed LPNs, 83 percent report actively using their state license and are employed in Minnesota. Another two percent hold an active state license, but are employed in another state. Over half of these active license holders are employed in states bordering Minnesota. The remaining 15 percent are inactive license

Figure 1: LPN Graduates (Minnesota Institutions) Preparing for Minnesota Licensure, 1991-1999



Source: Minnesota State Board of Nursing

holders. Of these inactive license holders, 10 percent are retired, 18 percent are not currently working due to family reasons, and 32 percent are already employed and not seeking work as an LPN. Only 338 inactive license holders (2 percent of all license holders surveyed) wanted to promptly re-enter the LPN workforce.

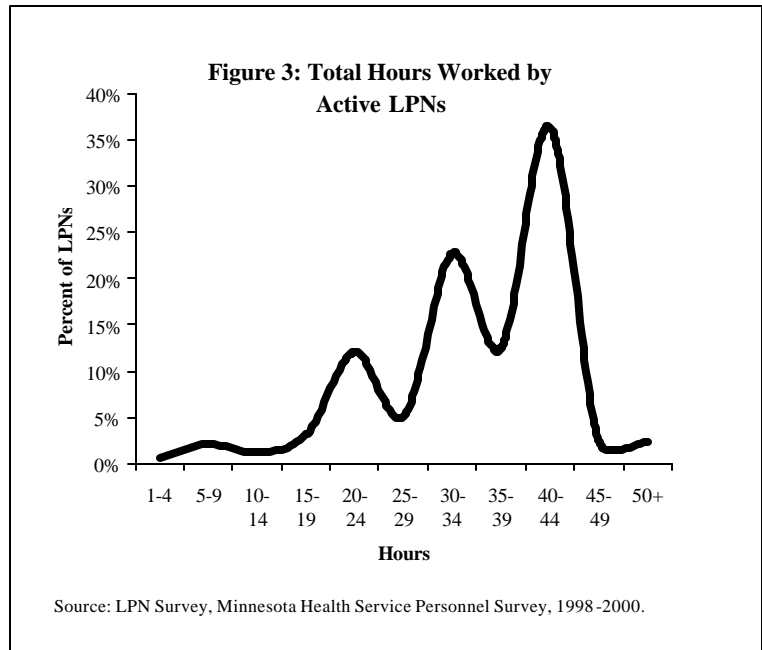
Employment

Fifty-four percent of all active licensed LPNs work for employers in the Twin Cities region and three other urban counties (Olmsted, Saint Louis and Stearns). When compared to the distribution of the state’s population (37 percent rural and 63 percent urban in 1999⁸), this finding points to a higher concentration of LPNs in rural Minnesota.

Overall, most active LPNs (36 percent) report being employed in long-term care settings. See Figure 2. In addition, slightly over half (53 percent) of all LPNs who work in long-term care settings are employed by rural facilities. The remaining portion of LPNs are employed in a variety of other settings, including offices and clinics, hospitals, and home health agencies. Nine percent of active LPNs work for more than one employer.

Ninety percent of all active LPNs report patient care as their primary professional activity. When compared to RNs, LPNs have a much higher rate of providing care to patients. The rate for RNs is 75 percent. Nevertheless, LPNs and RNs have similar work patterns with regard to work hours. Like their registered nurse counterparts, active LPNs in Minnesota work, on average, 34 hours per week. See Figure 3.

A majority of LPNs (59 percent) work less than 40 hours per week. Only one-quarter of all LPNs work 30 hours per week, however, compared to one-third of all RNs. Yet LPNs tend to spend a greater proportion of their time providing direct patient care (28 hours per week for LPNs

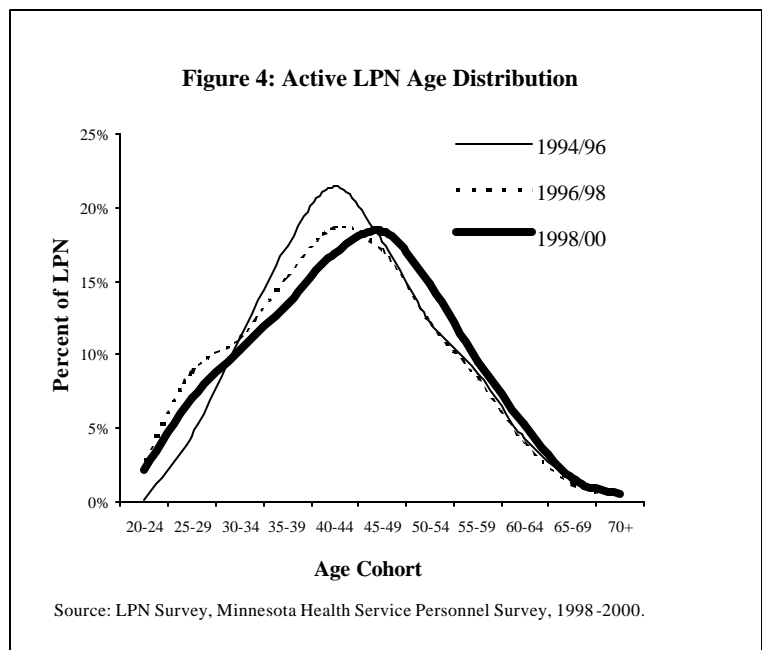
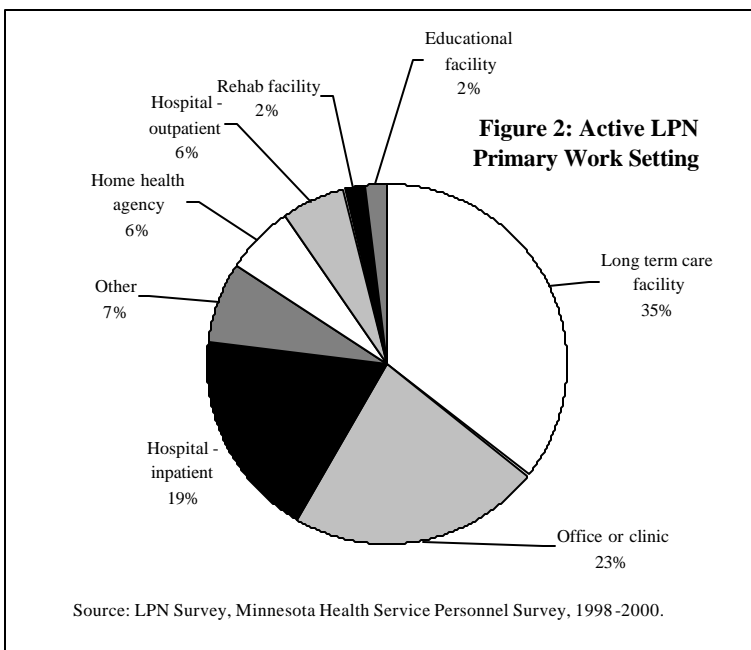


versus 25 hours per week for RNs).

Compared to the rest of the nation, Minnesota LPNs tend to work fewer hours. In fact, 50 percent of LPNs work part-time in Minnesota, compared to 25 percent nationally.⁹ This finding suggests that one potential way to address the shortage of LPNs is to encourage more part-time workers to engage in full-time employment. However, factors such as current staffing practices by facilities and non-nursing employment by part-time workers may hinder such efforts.

Age

As with other nursing professionals, LPNs tend to be older than workers in other occupations. In Minnesota during the past six years, the average age of active LPNs has remained relatively constant at 44 years old. See Figure 4. For both RNs and LPNs the proportion of



LPNs ages 55 and older continues to grow. However, unlike RNs, the proportion of LPNs ages 35 and younger has also increased during the last six years — from 16 to 20 percent between 1994 and 2000.

LPNs who work in the Twin Cities tend to be younger than their Greater Minnesota counterparts. Regions with LPNs older than the state average include the southwest, southeast, northeast and south central regions of the state. In addition, several important age differences are revealed when LPN age and facility type are examined by region. See Table 1.

Table 1: Average LPN Age by Setting and Region

Facility Type <i>(Primary practice site only)</i>	Urban	Rural	
	Average Age	Average Age	
Hospital-inpatient	44.4	45.4	*
Hospital-outpatient	45.9	45.9	
Office/Clinic	44.2	43.5	
Long Term Care Facility	43.2	44.0	**
Home Health Agency	44.6	44.3	
Public Health Agency	44.1	47.5	
Rehab Agency	40.1	42.7	*
Educational Institution	45.9	46.2	
Institutional Setting	43.9	44.2	
Other	45.3	45.5	

*P-value <.05 ** P-value <.01

Source: LPN Survey, Minnesota Health Service Personnel Survey, 1998-2000.

The rural and urban age differences between seven out of ten employment settings are not significant. However, the age differences are statistically significant between urban and rural LPNs for three employment settings. Of these, the most prominent age difference occurs in nursing homes. In both employment settings the age of rural LPNs, due to a slightly larger share of older workers, is higher. At the other end of the age spectrum, the proportion of younger LPNs, those ages 35 and younger, is slightly higher in urban areas than rural areas (23 percent and 20 percent respectively). These findings suggest that the aging of the workforce will likely have a larger impact on the supply of rural LPNs, especially in nursing homes, as more nurses in these facilities will reach retirement age first.

Summary and Conclusions

The findings in this profile denote a number of short- and long-term policy directions that could be followed to meet the current (and future) demand for LPNs in the state. As with RNs, the high level of part-time employment for the state's LPNs points to one short term resolution — encourage more part-time LPNs to work full-time. While this solution seems straightforward it may actually require considerable effort for both employers and LPNs to change well-established staffing patterns and employment practices. In addition,

employers could target and encourage those skilled workers with active licenses who are seeking LPN employment and those with inactive licenses, namely the six percent who are retired or working in non-nursing employment, to return to the LPN workforce.

Employers and educators could also encourage students who have completed LPN training programs to enter the workforce instead of pursuing additional nursing training. While this remedy could add more LPNs to the workforce, it presents a dilemma for health care employers who are also seeking RNs, as many LPNs choose to continue their nursing education

Overall, the aging of the LPN workforce, the current demand for LPNs, along with trends in LPN graduation rates within the state and nation, strongly suggest that increasing the supply of LPNs in the long-term will require an expansion in the capacity of the state's post-secondary institutions to produce new LPNs. Increasing the program capacity at the 26 schools that offer LPN training in the state, given the short length of training, could have an immediate and direct impact on the supply of LPNs. At the same time, more financial incentives, such as scholarships and loan forgiveness, for students to pursue an LPN degree and for recent LPN graduates to remain in the state and work in areas or settings with the greatest need, such as rural areas and nursing homes, need to be created or enhanced.

For more information about this profile, please contact Michael Grover by phone at (651) 282-5642 or email at michael.grover@health.state.mn.us.

This information will be made available in alternative format — large print, Braille, or audiotope — upon request. Available on the Web at: www.health.state.mn.us/divs/chs/workforce.htm

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Notes

¹ Occupational Employment Estimates, BLS and MDES, 1999.

² The Consumer Price Index (CPI-U) is used as a proxy for inflation. 1990 and 2000 Annual Average, CPI (U), BLS and 1990 and 1999 Salary Surveys, MDES.

³ Authors calculations using data from the *Statewide Job Vacancy Survey*, MDES, February 2001 and *Occupations in Demand: Findings from the Targeted Industry Job Vacancy Survey*, Revised Estimates, MDES, August 2000.

⁴ National Center for Education Statistics, *IPEDS*, 1992 to 1997.

⁵ Minnesota Board of Nursing, *Graduates from Practical Nursing Programs Preparing for Licensure*, February 2000.

⁶ The Office of Rural Health and Primary Care has surveyed eleven health care professions when they renew their licenses since the mid 1990s.

⁷ Data for active LPNs comes from the 1998 to 2000 relicensing period with an estimated survey response rate of 62.4 percent of the approximately 25,000 who were relicensed. While the data in this profile only reflect those LPNs responding to the survey, and not the entire population of LPNs in Minnesota, the data do provide an accurate picture of a number of general characteristics (including age, work hours, practice setting, and work activity) that are representative of the state's LPN workforce.

⁸ 1999 State of Minnesota Population Estimates, Minnesota Planning.

⁹ Part-time is measured here as less than 35 hours per week. "Licensed Practical Nurse," *Occupational Outlook Handbook, 2000-1*, BLS, 2000.