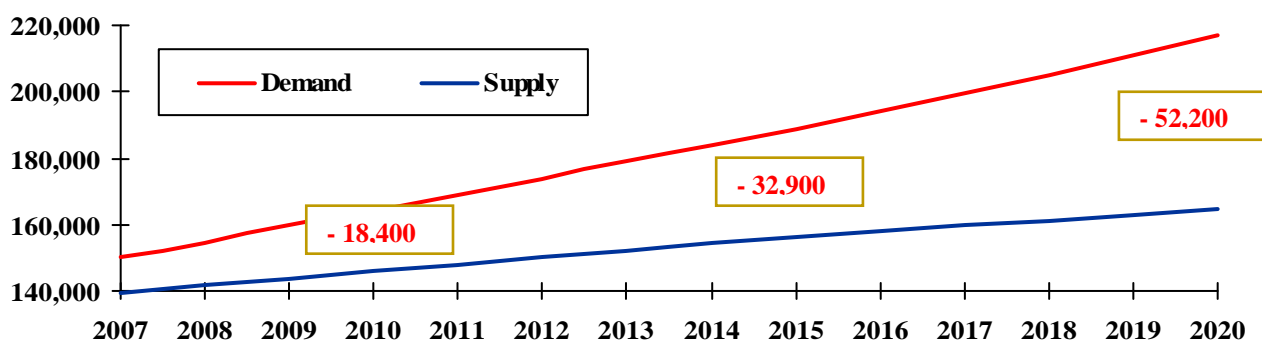


April 2009

The Florida Center for Nursing (Center) projected in 2008 that the shortage of Registered Nurses (RNs) would grow to more than 18,000 full-time equivalent (FTE) positions by 2010 and 52,000 FTEs by 2020 if no new actions are taken to resolve the shortage.<sup>1</sup> The nursing shortage is driven by an aging Baby Boom cohort requiring more health care and simultaneous retirements from the nurse workforce. Complicating this demographic shift are limitations in the ability to expand nursing education programs and problems retaining nurses in the Florida nurse workforce.



**Figure 1. Supply, Demand, and Shortage of RNs, 2007-2020**

This paper summarizes the information we used to make these projections. It reviews the most up-to-date data available on elements of the nursing shortage in Florida, including nurse supply and demand, nursing education capacity, and retention and turnover. In most cases, the information we present here comes from original research conducted by the Florida Center for Nursing and available on our website. The following points summarize the highlights of our recent work:

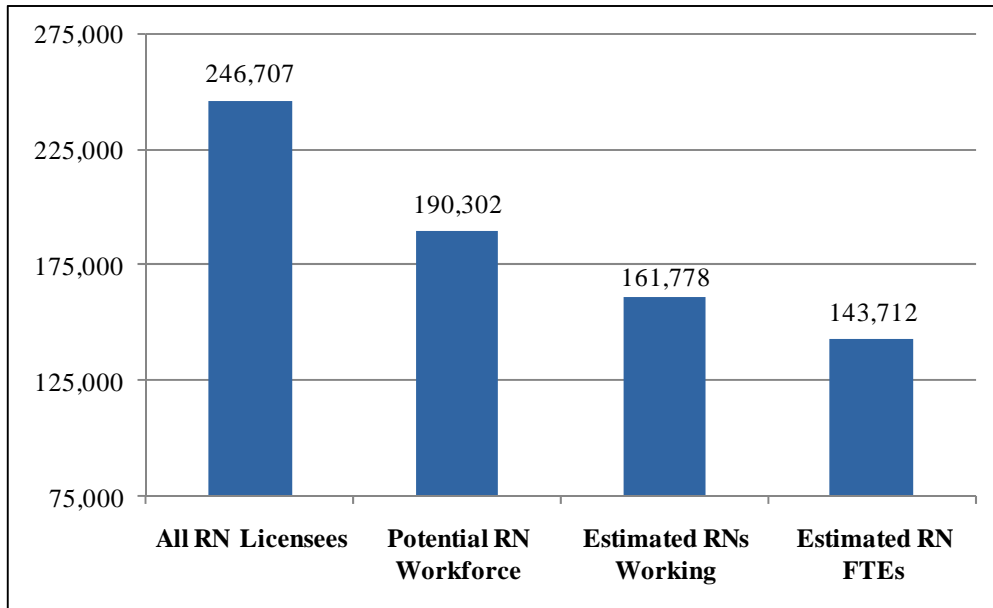
- Although there are nearly 250,000 licensed RNs and Advanced Registered Nurse Practitioners (ARNPs) in Florida, we estimate that fewer than 162,000 are actually working in the field of nursing and in the state of Florida.
- About 81 percent of RNs were working more than 36 hours per week in 2008, a figure that is higher than national estimates of full-time employment in 2004 and may be due to the recent economic downturn.
- Among members of our RN workforce, the most common employment settings were hospitals (61.2%), home health care (7.4%), and ambulatory care facilities (5.4%).
- The supply of actively licensed RNs and LPNs with a Florida address increased by about 2.7 percent each year in 2007 and 2008.
- While our nurse supply is becoming more diverse in terms of gender and race/ethnicity, it is also becoming older over time. The average age of RNs in January 2009 was nearly 48 years.

- Nearly 10,500 RN positions (full- and part-time) and 3,000 LPN positions were vacant as of June 30, 2007. The majority of RN vacancies were in hospitals, while the majority of LPN vacancies were in skilled nursing facilities.
- As of June 2007, many nurse employers expected substantial growth in RN and LPN employment. We estimated that about 6,500 new RN positions and 1,800 new LPN positions would be created in 2008.
- Nursing education programs in Florida declined a total of 12,563 qualified applicants in Academic Year 2007-2008 – more than half of qualified applicants to RN associate’s degree and baccalaureate degree programs.
- The most consistently cited barriers to program expansion are limited clinical sites, lack of funds to hire faculty, and lack of qualified applicants for faculty positions.
- New RN program graduates increased by an impressive 24 percent between Academic Years 2006-2007 and 2007-2008, but all of this growth occurred in associate’s degree programs. Evidence indicates that this growth is probably not sustainable; decreases in full-time faculty and concern regarding sustained funding may hamper further growth.
- Solutions to the nursing shortage, while often viewed as costs, may also have economic benefits for the state. The salaries earned by nurses filling currently vacant positions would contribute to the gross state product and state and local tax revenues.

### Nurse Supply

Of the 246,707 licensed RNs (including ARNPs) in the state of Florida (as of January 2009), only 190,302 are eligible to work as nurses in this state by virtue of their license status and address.<sup>2</sup> These nurses make up Florida’s *potential* RN workforce, but substantially fewer are *actually* working in nursing in the state. The Center recently completed a survey of almost two-thirds of the RNs in Florida – those renewing their nursing licenses in 2008. Our 2008 Nurse Workforce Survey found that 85 percent of survey takers were employed in the field of nursing in Florida.<sup>3</sup> When that percentage is applied to the potential nurse workforce, we estimate that only 161,778 RNs are members of the Florida nurse workforce – and they provide only 143,712 full-time equivalent positions (FTEs).<sup>4</sup> As Figure 2 illustrates, the number of RNs is cut by more than 100,000 when moving from licensed nurses to FTEs.

Most RNs were working full-time in 2008. About 81 percent of RNs in the nursing field work more than 36 hours per week, a figure that is higher than national estimates of full-time employment in 2004 (70.3%).<sup>5</sup> It is unknown whether the difference reflects the recent economic downturn (which may cause workers to increase their hours) or the unique nursing needs of Florida. The severity of Florida’s nursing shortage, for example, may cause employers to increase the hours worked by nurses to meet the demands of care delivery. The average proportion of an FTE worked by RNs is 0.89, reflecting the high number of hours worked by many of our nurses.<sup>4</sup>



**Figure 2. Florida’s RN and ARNP Supply and Employment Situation**

We estimate there were 801.5 RNs employed in nursing and 712.9 RN FTEs for every 100,000 Floridians in 2008.<sup>4</sup> Using data from the 2004 National Sample Survey, it was estimated that Florida had 763 RNs in the nursing workforce per 100,000 Floridians in 2004.<sup>5</sup> It is unknown whether the difference reflects true change over time since 2004 or methodological differences between Center and national studies. It is important to consider that the National Sample Survey estimates are based on a very small sample size of Florida RNs, and thus the estimates have a higher standard error than those based on the data we use. Future Center surveys of the RN population in Florida will allow tracking of this figure over time in a much more reliable way.

RN employment setting was also queried as part of the 2008 Nurse Workforce Survey.<sup>3</sup> The most common employment setting for RNs was hospitals (61.2%), followed by home health care (7.4%) and ambulatory care facilities (5.4%). As Table 1 shows, the majority of RNs in nearly all settings worked full-time. When using the number of hours worked to compute an average FTE value for each setting, RNs working in hospitals, corrections, and insurance companies worked the most on average.

**Table 1. Setting, Percentage Employed Full-Time, and Average FTE for Working RNs**

Employment Setting	Percent	% Full-Time	Average FTE
Hospital	61.2	80.9	0.910
Home Health Care	7.4	67.1	0.850
Other	6.8	77.8	0.867
Ambulatory Care	5.4	71.8	0.844
Physician or other Health Provider Office	5.0	77.0	0.861
Long Term Care	4.4	83.9	0.895
Public/Community Health	2.6	82.0	0.897
Insurance Company	2.0	92.9	0.955
Nursing Education - Academic Setting	1.8	76.2	0.830
School Health	1.1	78.5	0.783
Corrections Facility	0.9	87.7	0.941
Healthcare Consulting / Product Sales	0.6	74.9	0.836
Temporary Agency	0.5	19.9	0.734
Occupational Health	0.4	77.9	0.864

At present we know less about the work habits of Licensed Practical Nurses (LPNs) than is true for RNs, but this group will have an opportunity to take our Workforce Survey later in 2009 as they renew their LPN licenses. Fortunately, analysis of licensure data provides information on growth in the potential nurse workforce for both RNs and LPNs.<sup>2</sup> The potential LPN workforce increased by about 2.2 percent each year in 2007 and 2008, while the potential RN workforce increased by 2.7 percent. The potential RN and LPN workforces both became more diverse from 2007-2009, experiencing increases in the proportions reporting Black race and Hispanic ethnicity. The proportion of male RNs and LPNs also increased slightly between 2007 and 2009.

Aging of the nurse supply is a serious concern for the future of our nurse workforce. As older nurses leave the workforce there are fewer nurses to replace them, and younger nurses do not benefit from the knowledge and mentoring abilities of more experienced nurses. In January 2009, the average age was 47.7 for RNs, 48.7 for ARNPs, and 46.6 for LPNs. About 44 percent of RNs were aged 51 or older.<sup>2</sup> Although retirement plans may fluctuate with changing state and national economic conditions, we can expect many of these nurses to retire during the next 10 years. Indeed, a smaller percentage of RNs older than 61 are currently working in nursing (65.8 %) compared to RNs who are 20 to 30 years old (94.9%).<sup>3</sup> With approximately 30 percent of RNs and 34 percent of LPNs younger than 40 years, these smaller cohorts of younger nurses will likely be unable to compensate for the projected losses due to retirement in the next 10 years. Based on current age statistics and retirement projections, the nurse supply will be insufficient to meet the soaring demand of aging Floridians.

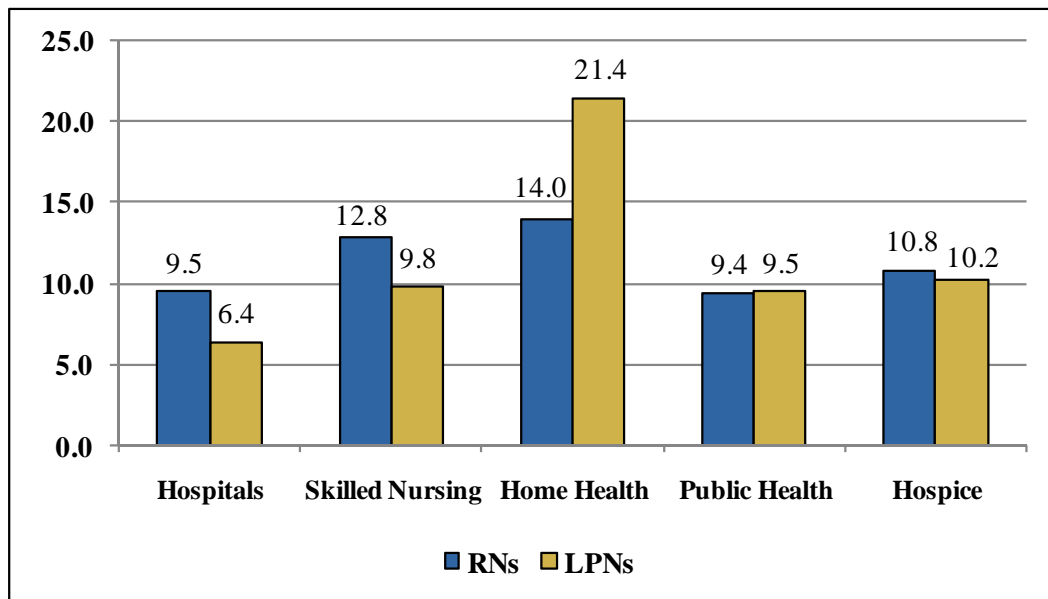
## Demand for Nurses

Nurse demand includes employed nurses (demand that has been satisfied) as well as *unmet* demand in the form of vacancies for RNs and LPNs. As of June 30<sup>th</sup>, 2007 we estimate that a total of 10,437 full and part-time RN positions were vacant.<sup>6</sup> Nearly 3,000 LPN vacancies existed on that date. The majority of RN vacancies (73%) were in hospitals, whereas skilled nursing facilities reported the largest percentage of LPN vacancies (59%). Table 2 provides a breakdown of RN and LPN vacancies by employment setting.

**Table 2. Estimated RN and LPN Vacancies (Full-Time and Part-Time) as of 6/30/2007**

Industry	Estimated RN Vacancies		Estimated LPN Vacancies	
	Number	% of Total Vacancies	Number	% of Total Vacancies
Hospitals	7,649.3	73.3%	482.2	16.2%
Skilled Nursing	960.2	9.2%	1,739.9	58.5%
Home Health	1,151.7	11.0%	518.6	17.4%
Hospice	490.7	4.7%	184.0	6.2%
Public Health	185.2	1.8%	47.4	1.6%
<b>Total (all groups)</b>	<b>10,437.1</b>	<b>100.0%</b>	<b>2,972.1</b>	<b>100.0%</b>

FTE vacancy rates (Figure 3) for RNs were above 8 percent in every health care setting included in the Center’s 2007 Nurse Employer Survey, suggesting considerable staffing instability.<sup>7</sup> Vacancy rates were highest in home health agencies and lowest in hospitals and public health departments.



**Figure 3. FTE Vacancy Rates for RNs and LPNs as of 06/30/07**

Employers expected their demand for nursing labor to increase substantially in 2008 (Table 3). We estimated that 6,459 new RN positions would be created in 2008, approximately 70 percent of which would be in hospitals and 22 percent in home health.<sup>6</sup> An additional 1,839 new LPN positions were expected in 2008. Approximately 50 percent of these new positions were projected for home health agencies, 18 percent in hospitals, and 19 percent in skilled nursing facilities.

**Table 3. Estimated Full- and Part-Time RN and LPN Position Growth for 2008**

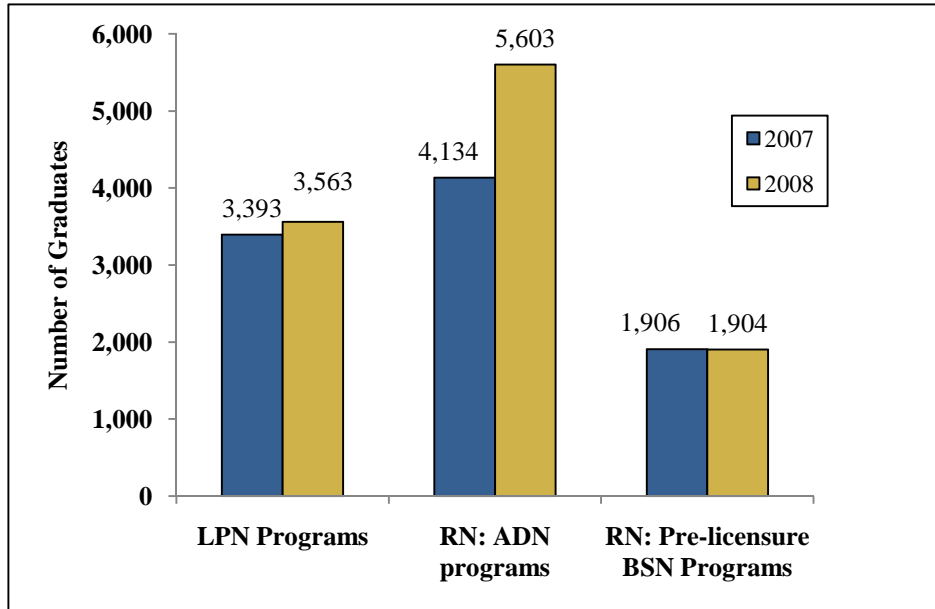
Industry	Estimated RN Positions Growth		Estimated LPN Position Growth	
	Number	% of Growth	Number	% of Growth
Hospitals	4,536.6	70.2%	324.7	17.6%
Skilled Nursing	81.0	1.3%	351.6	19.1%
Home Health	1,407.1	21.8%	915.8	49.8%
Public Health	54.6	0.8%	27.9	1.5%
Hospice	379.8	5.9%	219.8	11.9%
<b>Total (all groups)</b>	<b>6,459.1</b>	<b>100.0%</b>	<b>1,839.70</b>	<b>100.0%</b>

The Bureau of Labor Statistics (BLS) predicts that the national demand for RNs will generate 587,000 new jobs by 2016 (23% employment growth).<sup>8</sup> Highest employment growth for RNs is forecast for physicians’ offices (39%), home health care services (39%) and outpatient care centers (34%). LPNs are expected to have 14% employment growth, generating 105,000 new jobs nationally. LPN job creation will be especially strong in home health care agencies and nursing care facilities. The future demand for nurses will be particularly acute in Florida. Between 2010 and 2020, the demand for new nurses is forecast to increase by 52,485 FTEs for RNs and 18,214 FTEs for LPNs.<sup>1</sup>

Nursing Education

Nursing education programs have the potential to help resolve the shortage by increasing their output of new graduate nurses, but evidence indicates that our supply pipeline suffers from a “bottleneck” that limits nursing program expansion. Our 2008 Annual Report and Workforce Survey of Nursing programs found that Florida nursing programs declined a total of 12,563 qualified applicants in Academic Year (AY) 2007-2008.<sup>9</sup> Pre-licensure RN associate’s degree programs (ADN) and Baccalaureate degree programs (BSN) turned away *more than half* of qualified applicants. LPN programs turned away nearly one-third.

Graduates from pre-licensure programs increased by an impressive 24 percent between AY 2006-2007 and AY 2007-2008, but almost all of this growth occurred in ADN programs (Figure 4). BSN programs were essentially stagnant in both number of graduates and total enrollment, while ADN programs increased total enrollment by 13 percent. Evidence from our survey suggests, however, that the growth experienced by ADN programs is not sustainable. The number of full-time faculty members in ADN programs actually *decreased* over the past AY, and the number of students per full-time faculty member increased by *three*.



**Figure 4. New Graduate Nurses Produced in 2007 and 2008**

The most consistently cited barriers to program expansion – for two years in a row – are limited clinical sites for interactive learning experiences, lack of funds to hire faculty (funding shortage), and lack of qualified applicants for faculty positions (faculty shortage). Unfortunately, the year also saw declining enrollment in graduate degree tracks preparing nurses for faculty positions. Enrollment in nursing education master’s tracks declined by 5 percent, and enrollment in Ph.D. programs declined by 52 percent. If interest in nurse educator preparation continues to decline, the shortage of nurse faculty could intensify.

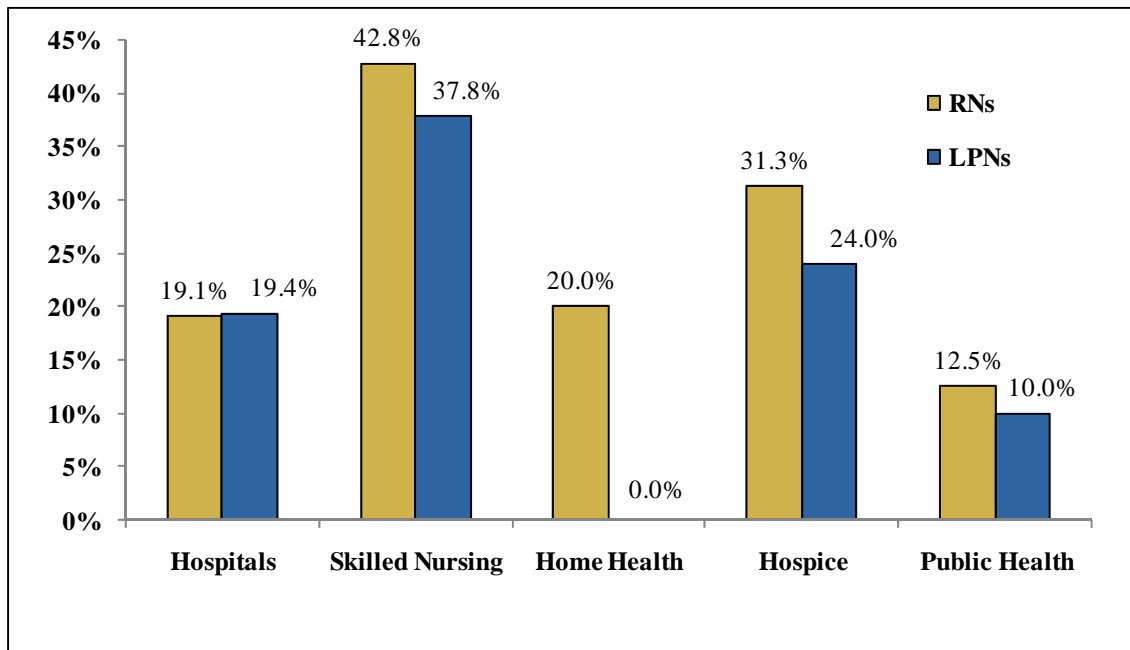
Nationally, nurse faculty vacancy rates for Baccalaureate and higher programs are estimated to be 7.6 percent.<sup>10</sup> As of September 2008, faculty vacancy rates in Florida nursing education programs were approximately 6 percent in ADN and LPN programs and 11 percent in BSN programs. Faculty clinical specialties in highest demand are medical-surgical, obstetrics, and pediatrics. Though the actual vacancy rates in Florida programs are in line with national averages, approximately two-thirds of faculty members in ADN and BSN/graduate nursing programs are over age 50. This age distribution suggests that many of the nurse faculty may expect to retire in the next 10 years, resulting in a faculty shortage and a subsequent reduction in program capacity.

### Retention and Turnover

Employee turnover is costly for employers in a number of ways: expense related to recruiting and hiring costs, lost productivity when positions are vacant or new employees are being trained, increased payments for overtime hours or agency personnel to fill the gap, and adverse effects on continuity and quality of care. Excessive turnover may occur because of a poor nursing work environment in individual facilities, but labor market shortages also contribute to turnover. When nurses are unavailable to fill vacant positions, existing staff must work longer and take on heavier workloads – leading to burnout, stress, and eventual turnover. Complementary to

reducing turnover, emphasis must be placed on retaining the nurse workforce. Considerations of the physical demands of nursing work on an aging nurse workforce, the work environment, patient loads, work-life balance, and bringing together the different strengths of the multiple generations of nurses are needed to retain both older and younger nurses.

During Fiscal Year (FY) 2006-2007, median turnover rates for RNs were approximately 20 percent in hospitals and home health, 31 percent in hospice, and 43 percent in skilled nursing facilities.<sup>7</sup> In Florida, the estimated cost of turnover for FY 2006-2007 was approximately \$1 billion for RNs and \$369 million for LPNs.<sup>11</sup> Clearly, turnover and the resulting costs to the employers and society need to be addressed urgently.



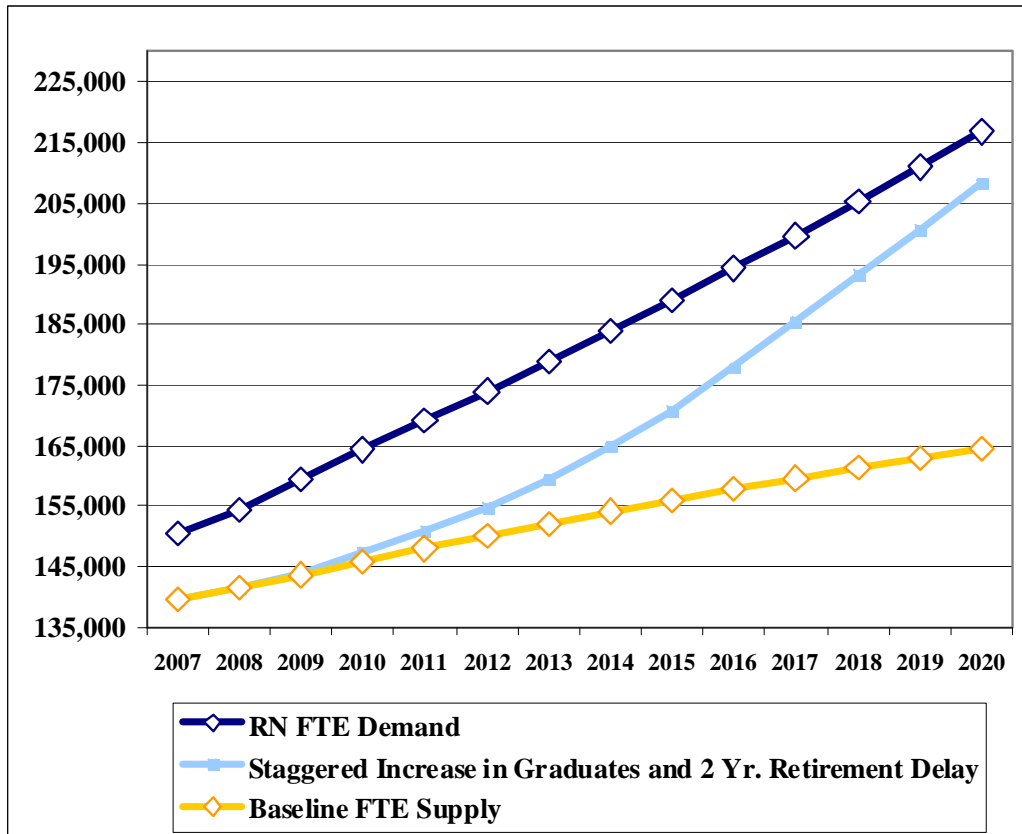
**Figure 5. RN and LPN Median Turnover Rates for FY 2006-2007**

In addition to *employment* turnover, the Florida nurse workforce experiences *professional* turnover when nurses leave the profession or the state. From 2007 to 2009, the potential RN workforce increased by 5.4 percent – a net gain. This figure masks the tremendous volatility in the workforce, however. During this time, the potential RN workforce gained approximately 25,500 RNs but *lost* 16,500 RNs – 65 percent of the gains – resulting in a net gain of only 9,000 RNs.<sup>2</sup> We must concentrate on decreasing the number of losses from the nurse workforce to help alleviate the statewide nursing shortage.

Conclusions: Solutions to the Nursing Shortage

The Center recommends a two-fold strategy for addressing the nursing shortage: maximizing education capacity to increase the number of new graduates *and* retaining existing nurses by improving the work environment. To accomplish these goals, the Center recommends continued data collection from nurses, nurse employers, and nursing education programs.<sup>12</sup> Only through continued study can specific interventions for resolving the shortage be identified and their

success evaluated. In essence, continued data collection can help the state course-correct so that resources are expended in the most efficient way to resolve the shortage.



**Figure 6. RN Supply Implications of Increasing Graduates 15 Percent Each Year and Delaying Retirement by Two Years**

Our 2008 forecasts allowed for “what if” scenarios (or simulations) that show the effect of simultaneous efforts to increase the number of new graduate RNs and delaying retirement for older RNs.<sup>1</sup> Simulations that incorporated only increases in new graduate nurses, or only delays in retirement, were unable to produce increases in the nurse supply capable of resolving the nursing shortage by 2020. Figure 6 shows a combined intervention: the projected impact of delaying retirement by two years (beginning in 2009) and increasing the number of new graduates by 15 percent each year beginning in 2011 (to a total of 90 percent by 2016). As the figure shows, even these interventions combined cannot prevent the shortage from growing over the next few years – and a near doubling of annual new graduate RNs over five years may not be achievable. The simulation does show, however, the importance of considering both recruitment *and* retention in resolution of the shortage.

As the economy falters, it becomes increasingly important to make a business case for use of scarce resources to resolve the shortage. The tangible economic benefits of resolving the shortage may be less obvious than the research showing the importance of adequate nurse staffing for patient outcomes. The Center recently published a white paper that estimated the economic benefits associated with filling vacant nursing positions (Table 4).<sup>11</sup>

**Table 4. Estimated Impact of Filling Vacant Licensed Nurse FTEs**

<b>Nurse Type</b>	<b>Estimated # of Vacant FTEs</b>	<b>Average Annual Salary for These Vacancies</b>	<b>Estimated Combined Annual Earnings</b>	<b>Estimated State and Local Tax Revenues on Combined Earnings</b>
RN	10,850.0	\$55,148.19	\$598,355,144.69	\$44,278,280.71
LPN	2,644.2	\$40,279.25	\$106,504,785.30	\$7,881,354.11
<b>Totals</b>	<b>13,494.2</b>		<b>\$704,859,929.99</b>	<b>\$52,159,634.82</b>

If vacant nurse positions were filled, the salaries earned by these nurses would contribute to the gross state product, propelling economic growth in Florida as nurses spend their wages on goods and services in the state. These salaries would also contribute to state and local tax revenues, which would help to offset the costs of state-funded efforts to resolve the shortage. In short, the economic contributions of nurses must be acknowledged as a long-term benefit of resolving the shortage – even as the short-term costs are considered. Resolving the nursing shortage has clear benefits for patients, the public, and nurses themselves.

The Florida Center for Nursing, as your definitive source of information on the nursing shortage, will continue to collect the data needed to describe the current (and future) supply and demand for nurses. We look forward to being your partner in resolving Florida’s nursing shortage.

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