



2007 Nursing Education Program Annual Report and Workforce Survey

January 2008



Addressing Nurse Workforce Issues for the Health of Florida

2007 Nursing Education Program Annual Report and Workforce Survey

Executive Summary

Recognizing the value of nursing education program data for both workforce planning and regulatory compliance purposes, the Florida Center for Nursing (Center) and Florida Board of Nursing (FBON) collaborated in 2007 to produce a single Annual Report and Workforce Survey instrument for nursing education programs in Florida. The survey captured information about program capacity, admissions, and graduates for the preceding Academic Year (AY 2006-2007) and more current information on the student and faculty populations (as of September 30, 2007). Of 149 expected surveys from pre-licensure licensed practical nursing (LPN) and registered nursing (RN) education programs, 140 responded by our deadline for a response rate of 94 percent. This report describes findings from the survey items related to workforce planning.

Survey results clearly demonstrate that Florida's nursing programs are struggling to expand education capacity for pre-licensure programs in the midst of a shortage of faculty and funding for additional faculty positions:

- Over 10,000 qualified applicants to nursing programs were turned away in academic year 2006-2007. Nearly half (48.3%) of qualified applicants to pre-licensure RN programs were turned away, as were 27.3 percent of qualified applicants to LPN programs. Baccalaureate of Science in Nursing (BSN) programs turned away the highest proportion of qualified applicants at nearly 60 percent.
- The primary barriers to program expansion for pre-licensure programs were reported to be *limited clinical sites, lack of funds to hire faculty, and lack of qualified faculty applicants.*
- The most difficult clinical sites in which to place students were reportedly *obstetrics and pediatrics.*
- Full-time faculty vacancy rates indicate that the current demand for nursing faculty is exceeding supply: 10.6 percent in LPN programs, 6.1 percent in Associate Degree in Nursing (ADN) programs, and 11.1 percent in BSN programs. In addition to actual vacancies, program Deans and Directors reported a total of 310 budget lines needed for full-time faculty members *just to meet the needs of their current student population.* The finding suggests that current faculty members are overworked and that expansion of education programs is occurring at the expense of faculty workloads.
- At the same time, the age of current faculty suggests that many nurse educators will be retiring over the next ten years. About half of faculty members in ADN and BSN programs are between the ages of 50-60. Combined with significant growth (more than 20%) in faculty positions that is expected over the next two academic years, Florida may face a serious shortage of nurse faculty.
- Unfortunately, information from graduate degree programs leading to educator roles indicates that interest in nursing education is low. Only 103 MSN students specializing in education and 32 Ph.D. students were graduated during AY 2006-2007, and current enrollment in these programs is insufficient to increase the number of annual graduates in the near future.

Without intervention, Florida's nursing shortage will be exacerbated by the bottleneck in our supply pipeline. This report concludes by offering recommendations to ease the faculty shortage, maximize our use of scarce resources, and better understand our nursing education system:

- *The Center and FBON should continue to collaborate on the annual report and workforce survey of nursing education programs.* The true value of the data reported here will be in trends identified over time. As the faculty and general nursing shortages intensify, it will be important to monitor the impact on nursing programs.
- *Faculty positions must be made more attractive to nurses with advanced degrees and nurses pursuing advanced degrees.* Increases in faculty salaries, attention to the student loads of faculty, and funding for scholarships and loan forgiveness programs to train educators are recommended to enhance the attractiveness of faculty positions.
- *Nursing programs must maximize their use of technology to stretch available human resources.* Technological solutions for resource scarcity, such as simulation labs and distance education options, will be important for the expansion of programs in light of human resource and clinical capacity limitations.
- *Nursing program capacity must be increased strategically.* Program creation and expansion must be data-driven in order to maximize our use of scarce resources. In many cases, expansion of existing programs will be preferable to creating new programs. Adding new programs dilutes the faculty pool and creates competition for limited clinical resources in an area.
- *Clinical capacity must be further studied to maximize the use of limited clinical resources.* At present, we know more about the limitations of faculty shortage than clinical placement limitations. Further study may yield important clues to resource maximization that can improve our use of available clinical resources.

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Introduction

Nursing education programs are important to nurse workforce planners from two different perspectives. First, nursing programs feed the nurse supply by educating new nurses and preparing them to pass the licensure examination. Second, nursing programs *employ* nurses in administrative, lecture, and clinical instruction capacities. As a result, nursing programs are important for both *supply* and *demand* sides of the workforce planning equation. If the latter is compromised – nursing programs struggle to recruit qualified faculty, for example – the former is also compromised because the production of new nurses is diminished.

The Florida Center for Nursing (Center), as the state's leading entity for nurse workforce analysis and planning, has conducted surveys of nursing programs periodically to examine issues surrounding the nurse supply pipeline and demand for nurse faculty. The Florida Board of Nursing (FBON), as the state agency charged with regulating nursing programs, also collects information. The Center's interest in data collection relates to nursing program capacity – the ability of programs to produce new nurses in view of available resources such as faculty, clinical sites, classroom space, and funding. Information on the graduate degree programs leading to roles in nursing education are also of interest. The FBON, on the other hand, is interested in data related to regulatory compliance – the degree to which nursing programs are following relevant rules, codes, or statutes as they educate new nurses. Their focus is on programs that produce newly licensed nurses. Importantly, both the Center and the FBON have the interest of Florida's residents in mind. The Center seeks to ensure that our healthcare system has the number of nurses it needs to provide quality care to Florida's residents. The FBON seeks to ensure that our education programs are operating in a way that produces competent nurses who can provide safe, effective care for Florida's residents.

In the past, the Center and FBON have conducted separate surveys of nursing programs. This has caused duplicative effort on the part of education program administrators, as program Deans and Directors had to complete multiple surveys. Additionally, the Center and FBON share interest in many data elements, such as enrollment and graduation figures. Consequently, administrators were asked to provide those figures for both surveys. To ease the burden of program administrators and standardize the measurement of data elements that both entities require, the Center and FBON collaborated in 2007 to produce a single survey instrument that collects data needed for both regulatory compliance and workforce planning purposes. The survey captures information about program capacity, admissions, and graduates for the preceding Academic Year (AY 2006-2007) and more current information on the student and faculty populations (as of September 30, 2007). With this strategy, the Center can provide up-to-date information on student/faculty characteristics and faculty demand while also capturing information on the production cycle of the most recently completed academic year.

This report presents an analysis of the workforce and supply pipeline information collected. It begins with a review of what is known about Florida's nursing program capacity limitations and faculty shortage. It then describes the methods used to design and field the survey instrument and presents statewide results. Finally, conclusions and policy recommendations are offered.

Background

During the mid and late 1990s, nursing programs across the country experienced declining enrollments.¹ Interest in the profession of nursing had waned as a result of stagnant wages and reports that new graduate nurses were struggling to find jobs. Since the early 2000s, however, enrollments in and graduations from nursing programs have been on the rise. The American Association of Colleges of Nursing (AACN) reported that the number of entry-level Baccalaureate of Science in Nursing (BSN) students rose by an average of 10,388 students per year from 2002 – 2006.² The National League for Nursing Accrediting Commission reports enrollment increases for Associate Degree in Nursing (ADN) programs since 2001.³

In a dramatic reversal, interest in the nursing profession has skyrocketed in the present decade. Wages for nurses increased, and reports of nursing shortages around the country (suggesting job security for new graduates) began to surface. Nursing programs in the U.S. now turn away thousands of qualified applicants each year because resource limitations prevent program expansion. In academic year (AY) 2005-2006, more than 38,000 qualified applicants to entry-level BSN programs were turned away – about 35 percent of all qualified applicants.² About 71 percent of programs turning away students cited “insufficient number of faculty” as a primary reason. Preliminary data from AACN indicate that large numbers of qualified applicants continued to be turned away in 2007, with insufficient faculty and clinical placement sites identified as the primary causes. AACN reports additional enrollment growth in 2007, but that growth has slowed from 16.6 percent in 2003 to only 5 percent in 2007 - an indication that BSN programs are beginning to reach their capacity to expand given the available human and financial resources.⁴

Recent studies of nursing education in Florida echo these national findings. A survey conducted by the Center in 2005 found that responding programs turned away more than half of qualified applicants to registered nurse (RN) education programs (over 6,000) in AY 2003-2004.⁵ A Center survey conducted in early 2007 found that more than 7,000 RN program applicants were turned away in AY 2005-2006 – 62.7 percent of BSN applicants and nearly 50 percent of ADN applicants.⁶ As was found nationally, the most significant factors preventing expansion of education programs in Florida are reportedly lack of faculty and lack of clinical space.^{5,7}

National and state-level researchers have focused on the shortage of nursing program faculty as a primary reason for the bottleneck our supply pipeline is experiencing.^{8,9} Nursing faculty members are, on average, older than the general population of licensed nurses.¹⁰ Many will retire over the next decade, leaving nursing programs with large numbers of vacancies at the same time that nurse employers will demand increasing numbers of new nurses. The result may be reduced nursing program capacity, which will exacerbate the general shortage of nurses. Researchers and policy analysts have argued that increasing the supply of nursing faculty requires increasing faculty salaries in nursing programs. Highly educated nurses can make much more in practice than they can as nursing professors or instructors, so faculty salaries must be competitive with practice salaries to entice nurses into education.

In Florida, the Center’s most recent survey found that faculty vacancy rates in RN education programs were low during AY 2005-2006: 4.6 percent in ADN programs and 6.8 percent in BSN

programs.⁶ However, many programs reported that they *needed* more faculty positions than they could budget. The problem appeared to be a shortage of funding for faculty positions in addition to an actual shortage of faculty. Yet much is still unknown about the root causes of Florida's education capacity limitations. Previous Center surveys were voluntary and did not achieve full participation, and they also did not include Licensed Practical Nursing (LPN) education programs. Although program administrators cite difficulty with clinical placement, the specific clinical settings and experiences needed in Florida were unknown.

The present study helps to clarify the causes of Florida's supply pipeline bottleneck in a number of ways. First, because participation is required by the FBON, full (or very near full) participation was expected. This means that counts of faculty vacancies, budget lines needed for faculty, qualified applicants, and students admitted reflect nearly all nursing programs in the state. Second, more information was requested about difficulties with clinical placement, including the specific settings that were most problematic. Third, detailed information on the enrollment of students in specific curriculum options was collected. Generic/traditional students were counted separately from those in "bridge" programs that enhance the credentials or license type of nurses. Tracks in Master's (MSN) programs were separated to better understand how many students were specializing in nursing education (for future nurse faculty) vs. practice (Nurse Practitioner, Clinical Nurse Leader, etc.).

As a result of this study, we now know more about Florida's nursing education system than has ever been known. With annual replication of the survey, the Center will be well prepared to monitor trends in the system that affect the number of new graduate nurses Florida will have in the future.

Methods

After obtaining approval from FBON in August 2007, the Center worked with FBON staff to assemble a list of data elements needed from nursing programs related to regulatory compliance. Center staff prepared a draft of the survey using sample surveys from other states and previous Center and FBON surveys for guidance. Two time references were used within the survey. Issues related to program capacity and operations were measured over the 2006-2007 Academic Year, defined as Fall semester 2006 through Summer semester 2007. Counts of student applicants, admissions, and graduates - as well as new faculty hires and faculty retirements - were requested for AY 2006-2007. A *census*, or total count and assessment of the student and faculty populations, was also requested with the reference date of September 30, 2007. The census provides information on all students moving through the curriculum sequence, all faculty members, and faculty vacancies that were open on the census date. September 30 was selected because both the student and faculty censuses tend to stabilize by this date. Faculty members needed for the current year have been hired (if qualified and available), and late student enrollments have been processed. Although the date is not within the 2006-2007 academic year, more current information is generated on students in the supply pipeline and demand for faculty.

Following consensus with the FBON on the draft instrument, a pilot of the instrument was conducted with three schools representing LPN programs, ADN programs, and BSN and higher programs, respectively. The pilot included a comment sheet where program directors made

suggestions for improvements to the instrument. Minor wording changes to some of the items were made following the first pilot, and a second pilot was undertaken with a larger number of schools. Three or four schools within each program type were invited to participate in the second pilot. Additional wording changes were made for clarification after the second pilot, and an item requesting information on student age distributions was deleted when it became clear that the majority of programs do not have this information readily available.

Once finalized, the instrument was prepared for online access. Online data entry was the preferred mode of administration for several reasons. Online surveys reduce data entry errors due to illegible handwriting or keypunching error. They also reduce survey costs by eliminating expensive mailings and data entry personnel, and they reduce the time necessary for data collection and preparation. Programs experience no lag in time for survey transport through the mail, and an electronic data file is generated automatically. Unlike many other survey populations, nursing education program Deans and Directors can be easily reached through electronic communication methods and have easy access to the Internet for survey completion.

Center staff prepared a spreadsheet with up-to-date contact information for each National Council Licensure Examination (NCLEX) code - practical and registered nursing - on record with the FBON. NCLEX is used by state and territorial boards of nursing to assist in making licensure decisions. Colleges and universities with multiple campuses sometimes have unique NCLEX codes for each campus, as do schools offering both LPN and RN education programs, and these schools were asked to complete a separate survey for each NCLEX code. In cases where multiple campuses share a single NCLEX code, only one survey was completed. An email survey invitation was sent to all Deans and Directors with instructions for accessing and completing the survey. Users logged on to the survey with their program's NCLEX code and user-generated password (to protect the confidentiality of their information).

Post-licensure and graduate program information was reported with each school's pre-licensure NCLEX code, but five programs in Florida serve post-licensure students exclusively in RN-BSN and MSN programs. These programs were assigned fictitious NCLEX codes for survey login and sent a separate email to encourage participation. Schools without pre-licensure programs are not required to participate by the FBON, so their email noted the voluntary nature of survey participation. All schools were instructed to complete the annual report and workforce survey between November 19, 2007 and December 14, 2007. This report is based on programs complying with our request by December 17.

A total of 149 pre-licensure LPN and RN program surveys were expected based on unique NCLEX codes. Only 9 pre-licensure programs failed to complete a survey, giving the study an overall response rate of 94 percent for pre-licensure programs. Table 1 details response rates by program type. Note that 6 of the 9 non-respondents were LPN programs, and all were based in public school systems or technical institutes. It is unknown whether these programs had any students enrolled at the time of this survey, but it is likely that the impact on overall results for LPN programs is minimal. Unfortunately, none of the five RN-BSN/MSN Only programs chose to participate in the study.

Table 1. Response Rates by Program Type

	Surveys Expected	Surveys Returned	Response Rate
LPN Programs	79	73	92.4%
ADN Programs	46	44	95.7%
BSN + Programs	25	24	96.0%
All Pre-licensure Programs*	149	140	94.0%
RN-BSN/MSN Only Programs**	5	0	0.0%
All Programs	154	140	90.9%

*One school has both an ADN and RN-BSN program. Their information was provided under an ADN NCLEX code. Hence, the number of pre-licensure and total programs expected and returned is one less than the number of LPN, ADN, and BSN Programs combined.

**RN-BSN/MSN Only Programs refer to schools that do not offer a pre-licensure program and were not required to take this survey.

Results

Programs and Curricula Reported

Table 2 shows the number of distinct programs and curriculum options reported by respondents to be operational during AY 2006-2007. Pre-licensure degree programs may have generic/traditional or bridge curricula. Generic curricula are for nursing students with no prior nursing training, while bridge curricula offer an accelerated option for students who do have prior nursing education at a lower level. Many programs have both curriculum options.

LPN programs are more numerous than any other type, with 73 distinct programs. Only five LPN programs offer a “bridge” curriculum that moves students with some health sciences training (e.g., a certified nursing assistant) through the program more rapidly. ADN programs, on the other hand, are more likely to offer a bridge curriculum to move LPNs or paramedics to the RN level; 27 of 44 ADN programs offer this option. Of the 24 responding BSN programs, 8 reported a “2nd degree” curriculum that typically accelerates the progress of students entering with a baccalaureate in another discipline.

RN-BSN programs for RNs with an associate’s degree or diploma were most numerous among the post-licensure programs. Of the 24 BSN programs, 21 reported having an RN-BSN curriculum option. Far fewer graduate level programs were reported. Only 16 master’s degree (MSN) programs and 8 doctoral programs were reported. Among MSN programs, most schools offered advanced practice tracks (such as Nurse Practitioner, Midwifery, and Anesthetist) and Nurse Educator tracks. Fewer offered tracks in Leadership/Management, Clinical Nurse Specialist (CNS), and Clinical Nurse Leader (CNL). Only six schools offered RN-MSN programs for students without a baccalaureate degree. In future charts and tables, students in MSN and RN-MSN programs are combined due to the small number of RN-MSN programs.

In addition to licensure or degree-granting programs, 17 schools reported post-licensure certificate programs, most of which were in Nurse Practitioner (NP), Nurse Educator, and CNS/MSN to NP tracks.

Table 2. Programs and Curriculum Options Reported by Respondents

	Program and Curriculum Counts
Pre-licensure Programs	
LPN Programs	73
- Generic/Traditional Curriculum	72
- Bridge Curriculum	5
ADN Programs	44
- Generic/Traditional Curriculum	43
- Bridge Curriculum	27
BSN Programs	24
- Generic/Traditional Curriculum	21
- 2 nd Degree Curriculum	8
Post-licensure and Certificate Programs	
RN-BSN Curriculum	21
MSN Programs	16
- NP, Midwifery, or Anesthetist Curricula	13
- Nurse Educator Curriculum	12
- Leadership/Management Curriculum	7
- Clinical Nurse Specialist Curriculum	4
- Clinical Nurse Leader Curriculum	5
RN-MSN Programs	6
- NP, Midwifery, or Anesthetist Curricula	5
- Nurse Educator Curriculum	5
- Leadership/Management Curriculum	2
- Clinical Nurse Specialist Curriculum	2
- Clinical Nurse Leader Curriculum	3
Doctoral Programs	8
- Ph.D. Curriculum	7
- DNP Curriculum	4
Certificate Programs	17
- Nurse Educator	7
- Nurse Practitioner	5
- CNS/MSN to NP	8
- NP to CNS	1

Notes: The number of curriculum counts exceeds the number of program counts because many programs offer multiple curriculum options. Since graduate programs are reported alongside BSN programs, the total number of programs is greater than the number of surveys received.

Faculty Information

To gauge the current demand for nursing program faculty, Deans and Directors were asked to report the number of filled and vacant full and part-time faculty positions as of September 30, 2007. Nearly 2,500 filled faculty positions were reported. More than half of these positions were for full-time faculty, but programs also reported employing substantial numbers of part-time and adjunct faculty members. Sixty programs reported a total of 144 full-time vacancies and 33 part-time vacancies as of September 30. Unfortunately, the number of part-time vacancies does not accurately measure demand for part-time and adjunct faculty because many programs do not budget positions for part-time employees in a traditional way.

Table 3. Filled and Vacant Faculty Positions as of 9/30/07, by Program Type

Program Type	Filled Faculty Positions		Vacant Faculty Positions	
	full-time	part-time	full-time	part-time
LPN	412	209	47	15*
ADN	572	496	37	15*
BSN and higher	482	324	60	3*
Totals	1,466	1,029	144	33*

*Many schools do not budget positions for part-time instructors, hiring as needed. Schools had the option of reporting “Not Applicable” for budgeted and vacant part-time positions, although all were required to enter the number of filled part-time positions. As such, reported part-time vacancies do not accurately reflect current need for part-time employees.

When these figures are expressed as vacancy rates, as shown in the blue bars of Figure 1, the survey results suggest that current demand for nursing faculty is beginning to exceed supply – especially in LPN and BSN/graduate programs. On September 30, 2007, 10.6 percent of all full-time faculty positions in LPN programs were vacant. About 11 percent of full-time faculty positions in BSN and graduate programs were vacant. The “actual” vacancy rates reported in Figure 1 were computed with the following formula, which sums positions across all programs before the rate is computed:

$$\text{Full-time position vacancy rate} = (\sum \text{FT positions budgeted} / \sum \text{FT positions vacant}) * 100$$

Program Directors were asked to report the number of full-time positions they would add to meet the needs of their current student population *if funding were available*. While vacancy rates measure the economic demand for nurse faculty (the number of employees demanded given the cost of the employee), this item measures perceived *need* for budgeted faculty lines. The economic reality is that many nursing programs cannot afford to staff at levels they consider desirable or appropriate. Program Deans and Directors reported a total of 310 budget lines needed for full-time faculty members. When these 310 positions are incorporated into the number of budgeted and vacant positions, a vacancy rate incorporating “need” can be produced. The yellow bar in Figure 1 presents these alternative vacancy rates for each program type. Note that vacancy rates incorporating need inflate to more than 20 percent across program types. While ADN programs had lower actual vacancy rates, their rate incorporating needed budgeted positions is still very high at 22 percent.

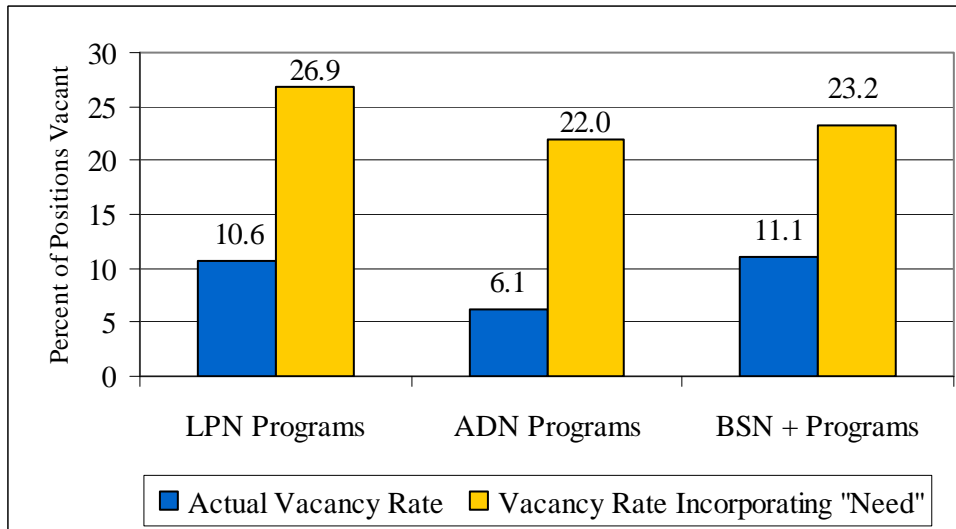


Figure 1. Full-Time Faculty Vacancy Rates as of 9/30/07, by Program Type

Programs reporting vacancies were asked what clinical specialties would be held by successful applicants for vacant positions. They could select any or all of the specialties listed in Figure 2, which presents the number of programs reporting vacancies for each clinical specialty. The number of selections does not equal the number of vacancies because respondents may want a single faculty member with multiple specialties or multiple faculty members with a single specialty. As Figure 2 shows, 52 (of 60 programs with vacancies) reported a need for new faculty with medical-surgical experience. Medical-surgical content is common in a number of courses across the nursing curriculum, so high demand for medical-surgical specialization is unsurprising. Other clinical specialties in high demand were obstetrics (25 programs) and pediatrics (26 programs).

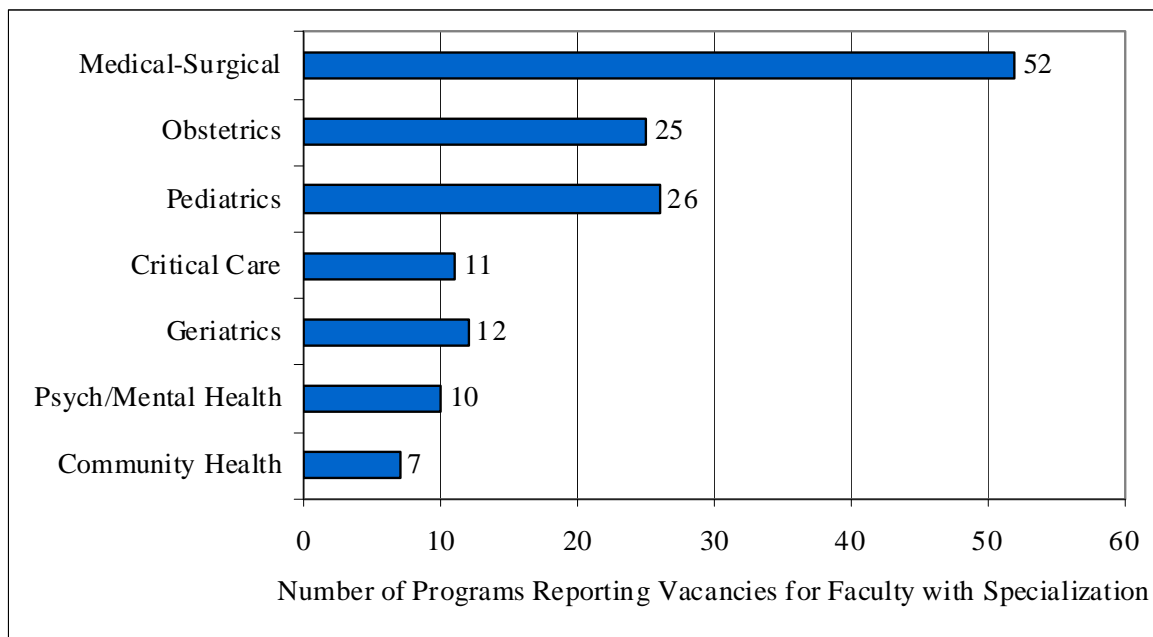


Figure 2. Clinical Specialties Needed for Vacant Faculty Positions as of 9/30/07

Deans and Directors were asked to provide the number of new full and part-time faculty hired during academic year 2006-2007. As Table 4 shows, the majority of programs had hired during the year. Responding programs hired a total of 631 new faculty members: 285 full-time faculty and 346 part-time faculty. BSN and higher programs were more likely to have hired than other program types. LPN programs were the least likely to have hired, and open full-time positions in LPN programs were filled more rapidly (9.3 weeks) than were open positions in ADN and BSN/graduate programs (more than 16 weeks).

Table 4. New Faculty Hired in Academic Year 2006-2007, by Program Type

Program Type	Percent Hiring	Number of New Faculty Hired		Average Weeks to Fill Faculty Vacancies	
		full-time	part-time	full-time	part-time
LPN	72.6%	90	79	9.3	8.1
ADN	77.3%	115	138	16.4	8.1
BSN and higher	90.9%	80	129	16.7	5.5

Respondents counted the number of full and part-time faculty as of September 30, 2007 by both age and highest earned degree. Table 5 shows the education distributions of faculty by program type. Not surprisingly, BSN and higher programs reported faculty with the highest levels of education. Nearly one-third (32.2%) of full-time faculty had a doctorate in nursing, and another one-fifth (19.3%) had a non-nursing doctorate. Most of the remaining full-time faculty had a master's degree in nursing. In contrast, LPN programs reported the largest proportion of faculty with a BSN or lower degree. Nearly half (44.8%) had a bachelor's in nursing, and another 14 percent had a diploma or associate's degree in nursing. Part-time/adjunct faculty members were less likely to have advanced degrees in all program types when compared with full-time faculty.

Table 5. Full and Part-time Faculty Education Distributions, by Program Type

	LPN Programs	ADN Programs	BSN + Programs
Full-time Faculty	%	%	%
Doctorate in Nursing	0.2	6.1	32.2
Non-nursing Doctorate	1.7	10.5	19.3
Masters in Nursing	23.9	76.6	46.1
Non-nursing Masters	12.3	1.4	0.8
Bachelors in Nursing	44.8	5.2	1.7
Non-nursing Bachelors	3.4	0.0	0.0
Diploma or AS in Nursing	13.7	0.2	0.0
Part-time/Adjunct Faculty	%	%	%
Doctorate in Nursing	0.0	1.2	7.6
Non-nursing Doctorate	1.7	0.4	8.6
Masters in Nursing	16.5	39.4	71.1
Non-nursing Masters	7.2	3.2	3.3
Bachelors in Nursing	56.1	55.6	9.5
Non-nursing Bachelors	2.1	0.2	0.0
Diploma or AS in Nursing	16.5	0.0	0.0

The age distributions of faculty as of September 30 are charted in Figure 3. Interestingly, the shape of the distributions for ADN and BSN/graduate programs are very similar. About one-half of faculty members within these programs are between 50 and 60 years old. As the figure shows, the distributions drop off sharply in the 60-64 category, and only five percent are above the age of 64. The distribution of LPN faculty looks substantially younger, peaking in the 45-49 category. Lower education requirements for LPN faculty may account for their relative youth.

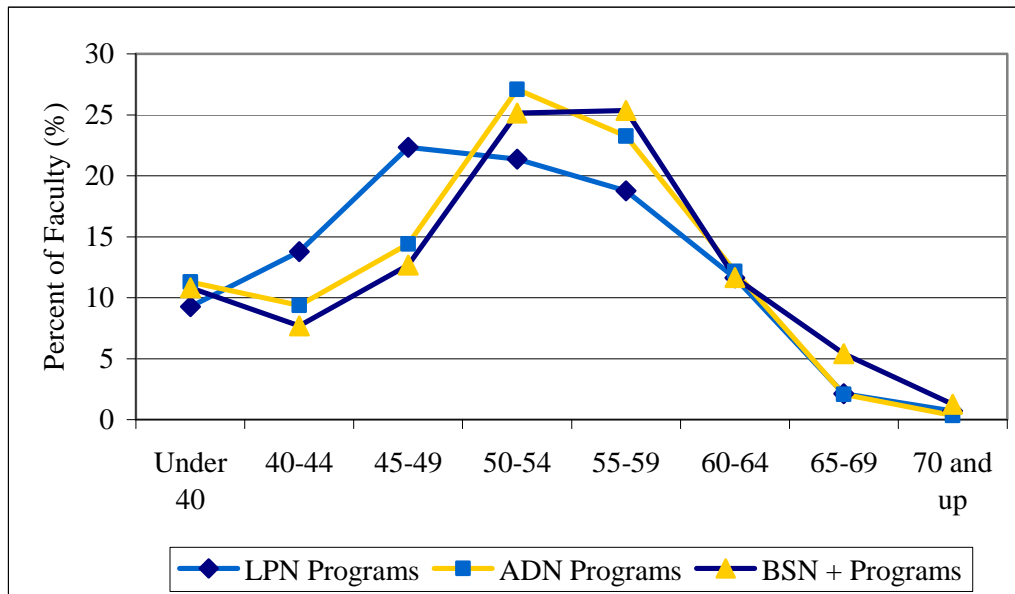


Figure 3. Age Distributions of Full-Time Faculty, by Program Type

The age distributions of faculty suggest that Florida can expect a large number of retirements over the next ten years as the bulk of faculty aged 50-60 reach typical ages for retirement. Table 6 counts the number of retirements programs experienced during AY 2006-2007 and the number of retirements they expect over the next three academic years. Although Deans and Directors will not know about all impending retirements, many of Florida’s faculty members participate in a program known as Deferred Retirement Option Program (DRO), which phases employees into retirement over a period of up to five years. DRO participants will be known to administrators, making expected retirements easier to estimate. Notably, the expected number of retirements increases each year from AY 07-08 to AY 09-10.

Table 6. Faculty Retirements, by Program Type

	LPN Programs	ADN Programs	BSN Programs
# Actual Retirements, AY 06-07	15	23	10
# Expected Retirements, AY 07-08	13	8	6
# Expected Retirements, AY 08-09	20	18	10
# Expected Retirements, AY 09-10	33	40	18

Note: Deans and Directors were not required to answer this question. Counts may underestimate the true number of retirements, as not all impending retirements over three years will be known to administrators.

Respondents were asked to estimate the number of new positions that would be budgeted over the next two academic years, 2007-2008 and 2008-2009. Deans and Directors expected 527 new full and part-time faculty positions to be budgeted. When expressed as a percentage of current faculty, LPN and ADN programs expected to grow their budgeted positions by more than 20 percent over the next two years. BSN programs expected more modest growth at 15.1 percent. While it is uncertain that administrators' requests for additional faculty budget lines will be approved by their college or university, the trend towards climbing enrollment suggests that significant growth in faculty size is likely. Combined with nearly 100 expected retirements, the number of vacancies in nursing education may increase considerably over the next two years.

Table 7. New Faculty Positions Expected Over Next Two Academic Years

	LPN Programs	ADN Programs	BSN Programs
New Full-time Positions Expected	70	114	69
New Part-time Positions Expected	89	123	62
Total New Faculty Members Needed	159	237	131
% Growth Over Current Positions	23.3%	21.2%	15.1%

Note: Respondents may not be certain that their requests for additional budget lines for faculty will be approved by their college or university.

Program and Student Information

Deans and Directors reported on the number of students applying to, entering, and leaving their programs through graduation during AY 2006-2007. This information can be used to understand how well the capacity of our nursing programs is meeting the demand for student seats as measured by applicants to those programs. The gray rows in Table 8 report the unmet demand for nursing education in Florida's pre-licensure programs – those that produce new nurses ready to sit for the licensure examination.

Table 8. Program Capacity Measures for Pre-licensure Programs, AY 2006-2007

	Generic LPN Curriculum	Bridge LPN Curriculum	Generic ADN Curriculum	Bridge ADN Curriculum	Generic BSN Curriculum	2 nd Degree BSN Curriculum
# of new student SEATS	5,383	31	6,382	1,094	2,148	324
# of QUALIFIED applicants	6,858	20	10,326	1,196	5,089	1,109
# of students ADMITTED	4,988	35	5,700	958	2,055	446
# of applicants turned away	1,870	NA*	4,626	238	3,034	663
% of applicants turned away	27.3%	NA*	44.8%	20.0%	59.6%	59.8%

*One program was unable to report the number of qualified applicants to the Bridge LPN Curriculum. As a result, the number of admissions exceeds the number of qualified applicants for this curriculum option.

A total of 1,870 qualified applicants, or 27.3 percent of all qualified applicants, were turned away from LPN programs during AY 2006-2007. RN programs, however, turned away 8,561 qualified applicants – nearly half (48.3%) of all qualified applicants to pre-licensure RN programs. BSN programs turned away the highest percentages of qualified applicants at nearly 60 percent for applicants to both Generic and 2nd Degree curricula. It is unknown how many applicants applied to multiple schools, a practice which is common when admission to nursing programs is more competitive.

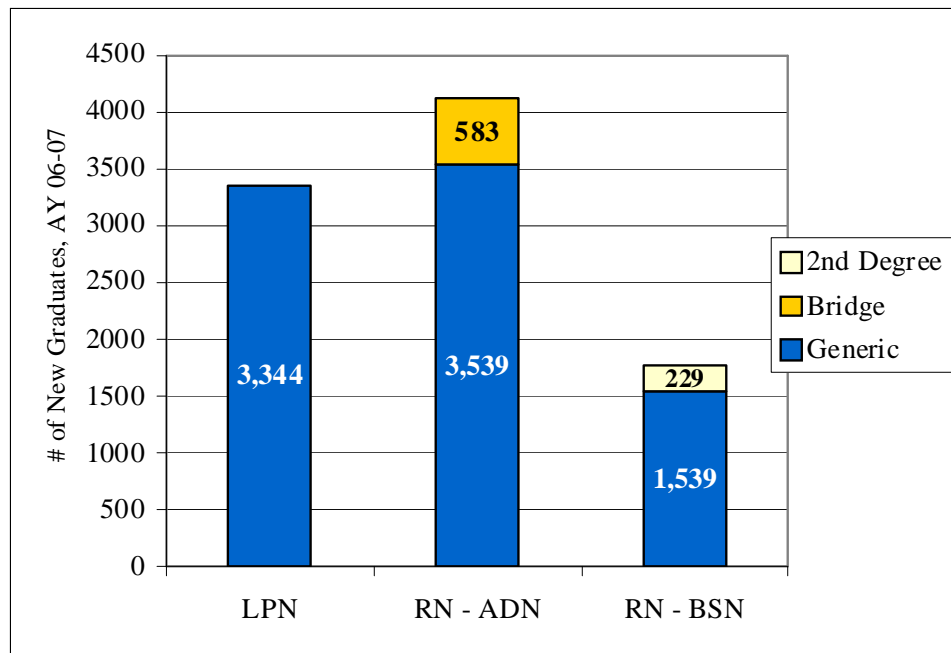


Figure 4. Graduates from Pre-licensure Programs, AY 2006-2007

A total of 3,344 LPN program graduates and 5,890 RN program graduates were reported by respondents for AY 2006-2007. The number of graduates has increased substantially since the last report of graduates released by the FBON for AY 2004-2005¹¹, particularly in RN programs. LPN program graduates have increased by nearly 15 percent over the 2,912 graduates reported in AY 2004-2005. RN program graduates, in contrast, have increased by *nearly 40 percent* over the 4,236 graduates produced in AY 2004-2005. Importantly, the number of new graduates does not equal the number of new nurses in the workforce. Some graduates will not pass the NCLEX examination, and others may choose not to work immediately, to work outside of nursing, or to take a nursing job outside of Florida.

Pre-licensure RN education programs are clearly expanding, but interestingly, the applicant pool is growing faster than are student seats and graduations. In AY 2004-2005, for example, only 54 percent of BSN program applicants were turned away – and it is unknown how many of those applicants were considered qualified.

Post-licensure programs are detailed in Table 9. A very different picture of program capacity emerges, as indicated in the gray rows of the table. Only 235 qualified applicants – about seven percent of all qualified applicants – were turned away from all post-licensure programs combined. One reason for the difference from pre-licensure programs is that programs educating licensed nurses are not required to adhere to the faculty-to-student ratio that binds pre-licensure programs. As a result, their admissions are less constrained by faculty availability. Alternatively, a lack of interest in post-licensure education may yield a small applicant pool for these programs.

Table 9. Program Capacity Measures for Post-licensure Programs, AY 2006-2007

	RN-BSN	MSN: NP	MSN: Educator	MSN: Management	MSN: CNS	MSN: CNL	Doc: Ph.D.	Doc: DNP
# QUALIFIED applicants	2,265	1,209	217	105	20	44	68	64
# students ADMITTED	2,195	1,070	205	102	17	44	67	57
# applicants turned away	70*	139	12	3	3	0	1	7
% applicants turned away	NA*	11.5%	5.5%	2.8%	15.0%	0.0%	1.5%	10.9%
# students GRADUATED	965	453	103	28	16	8	32	9

Notes: MSN curriculum options include students entering with a Bachelors degree as well as RN-MSN students entering without a Bachelors degree. The number of RN-MSN students is very small.

*One program was unable to report the number of qualified applicants to the RN-BSN Curriculum. As a result, the reported number of applicants turned away may underestimate the true number.

Given the demand for faculty reported by program administrators, the number of graduates from Educator tracks (MSN programs) and Ph.D. curricula (doctoral programs) is troubling. Only 103 MSN students specializing in education and 32 Ph.D. students were graduated during AY 2006-2007. More faculty vacancies than this existed on September 30, 2007, and programs planned to add another 527 positions over the next two academic years. The low percentages of students turned away in Educator tracks (5.5%) and Ph.D. curricula (1.5%) suggest that interest in education roles is insufficient among prospective graduate students. Importantly, most schools offering MSN degrees also offer an Educator track – so it is unlikely that interest appears low because the track is unavailable.

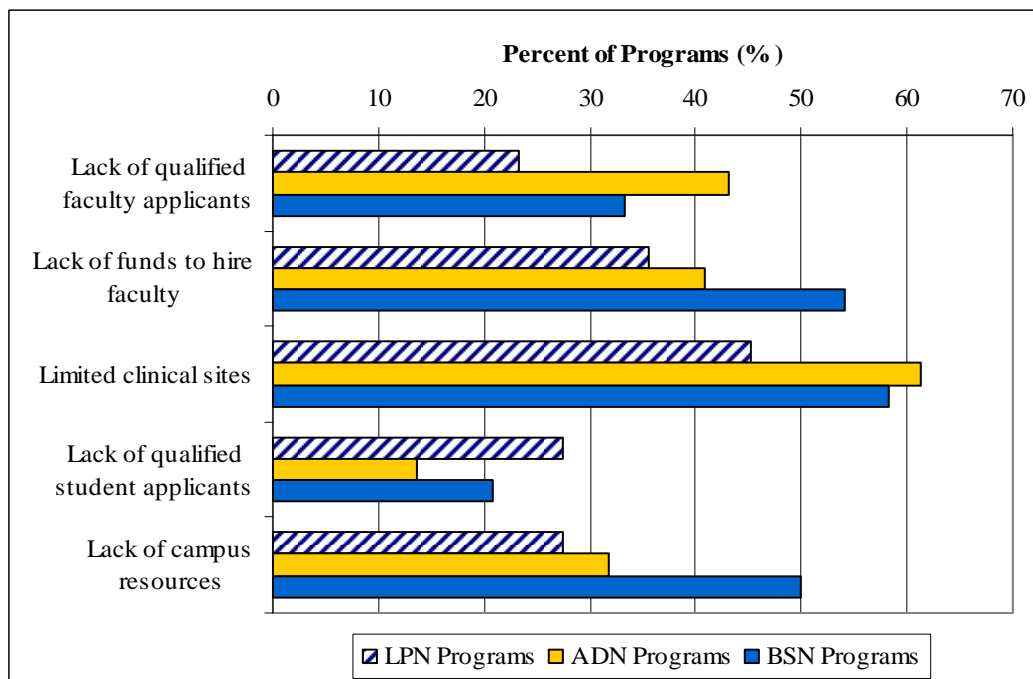


Figure 5. Percent of Pre-licensure Programs Reporting Barriers to Program Expansion

Deans and Directors were asked to report barriers to program expansion. Figure 5 lists the barriers they could select along with the percentage of pre-licensure programs selecting each. Because they could choose all that apply to their program, the percentages do not sum to 100 percent of survey respondents. The most commonly selected barrier across all program types was *limited clinical sites*. More than 60 percent of ADN programs reported this, as did more than half of BSN programs. The next most commonly selected barrier for LPN and BSN programs was *lack of funds to hire faculty*. More than half of BSN programs cited this, as did about 35 percent of LPN programs. For ADN programs, the second most problematic factor was *lack of qualified faculty applicants*. Far fewer programs reported a lack of qualified student applicants, and only BSN programs reported substantial difficulty due to a lack of campus resources.

Pre-licensure programs were also asked to rate their difficulty in finding clinical placement sites for students. The majority of programs reported “some” or “great” difficulty: 65.8 percent of LPN programs, 68.2 percent of ADN programs, and 58.3 percent of BSN programs. Programs reporting at least “some” difficulty were asked which clinical sites were most problematic. Figure 6 shows the sites and experiences they could select along with the percentage of all programs reporting difficulty with the specific site or experience. For both LPN and ADN programs, *obstetrics* and *pediatrics* were the most difficult sites in which to place students. This is not surprising, since units offering these services are much less common than medical-surgical units. More interesting is the fact that BSN programs did *not* have comparable difficulty with these sites. This finding, along with the lower percentage of BSN programs reporting difficulty with clinical placement, suggests that employers in hospitals may be more likely to accommodate BSN students than others.

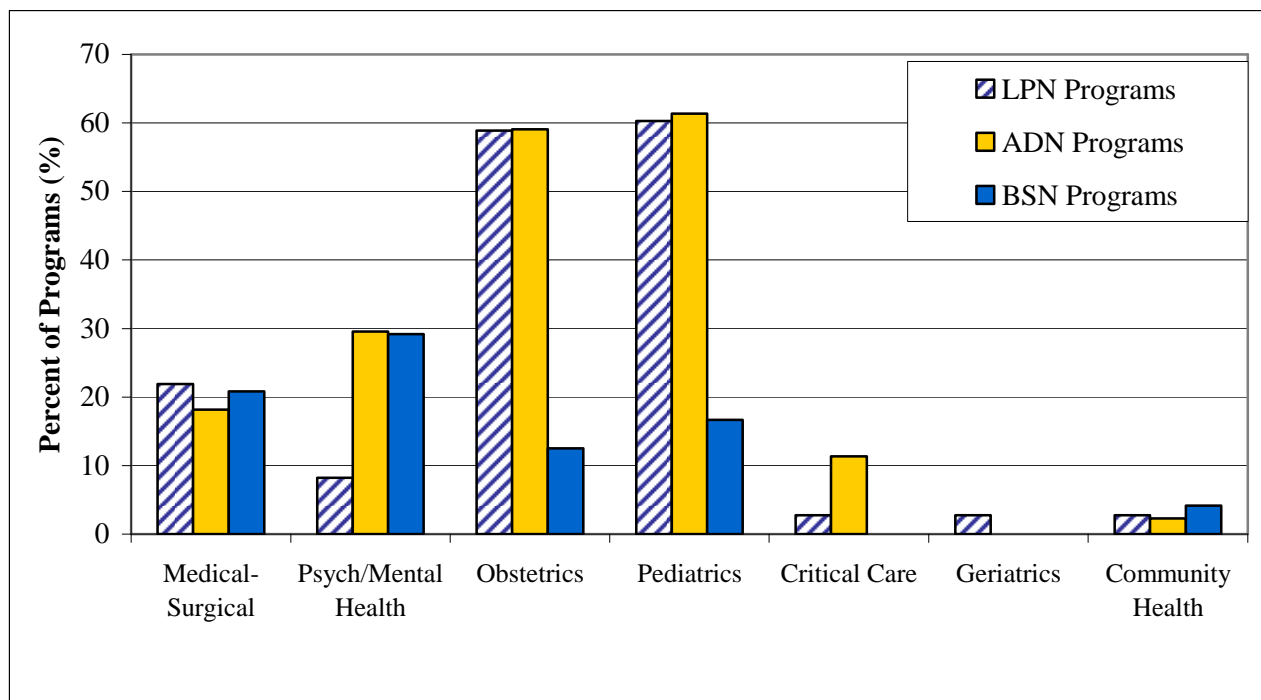


Figure 6. Percent of Programs Reporting Difficulty Placing Students in Clinical Sites

The total enrollment in all nursing curricula as of September 30, 2007 is reported in Table 10. Total enrollment in pre-licensure programs includes students at all phases of their curriculum sequences and is thus a measure of the total number of students in the supply pipeline. More than 4,700 LPN students were enrolled as of September 30, as were 13,931 RN students. Far fewer students were enrolled in post-licensure programs. The largest of these is the RN-BSN program, with nearly 3,000 students. The majority of MSN students are pursuing an NP curriculum track or other clinical practice track. As noted previously, far fewer students are pursuing graduate education that prepares them for educator roles: 355 MSN students and 206 Ph.D. students.

Table 10. Total Enrollment of Students on 9/30/07, by Curriculum

	Total Enrollment on 9/30/07
Pre-licensure Programs	
Generic/Traditional LPN	4,728
Bridge LPN	24
Total LPN	4,752
Generic/Traditional ADN	8,442
Bridge ADN	993
Total ADN	9,435
Generic/Traditional BSN	4,163
2nd Degree BSN	333
Total Pre-licensure BSN	4,496
Post-licensure Programs	
RN-BSN	2,896
MSN: NP track	1,926
MSN: Educator track	355
MSN: Management track	157
MSN: CNS track	29
MSN: CNL track	68
Total MSN	2,535
Doctoral: Ph.D.	206
Doctoral: DNP	123
Total Doctoral	329

Notes: MSN curriculum options include students entering with a Bachelors degree as well as RN-MSN students entering without a Bachelors degree. The number of RN-MSN students is very small.

Finally, Deans and Directors were asked to count their total enrollment by race/ethnicity and gender, shown in Figures 7 and 8. As Figure 7 shows, the proportion of White students increases substantially as the rank of the degree pursued increases. More than 60 percent of LPN students are from minority racial or ethnic groups, and the bulk of these minority students (43.6 percent of all students) are Black. In contrast, nearly 60 percent of ADN students are White, as are more than half of pre-licensure BSN students. Among post-licensure students the proportion of racial/ethnic minorities declines further: nearly 70 percent of post-licensure students are White.

It is generally accepted that a diverse nursing workforce, in terms of race/ethnicity, should be a goal for Florida. Patients from diverse backgrounds benefit when nurses understand their language, culture, and values. The Center recently reported that Florida needs to increase the number of black and Hispanic nurses to better match the diversity within the general population. In 2007, approximately 63 percent of Florida’s residents were White, 19 percent were Hispanic, and 16 percent were Black. Viewed from this angle, the proportion of minority nursing students within pre-licensure programs appears to be catching up with the proportion of minorities in the general population – a positive step for nursing in Florida. However, since very few minority nurses are pursuing graduate degrees, the racial/ethnic distribution of NPs and nurse educators will likely remain skewed towards White race.

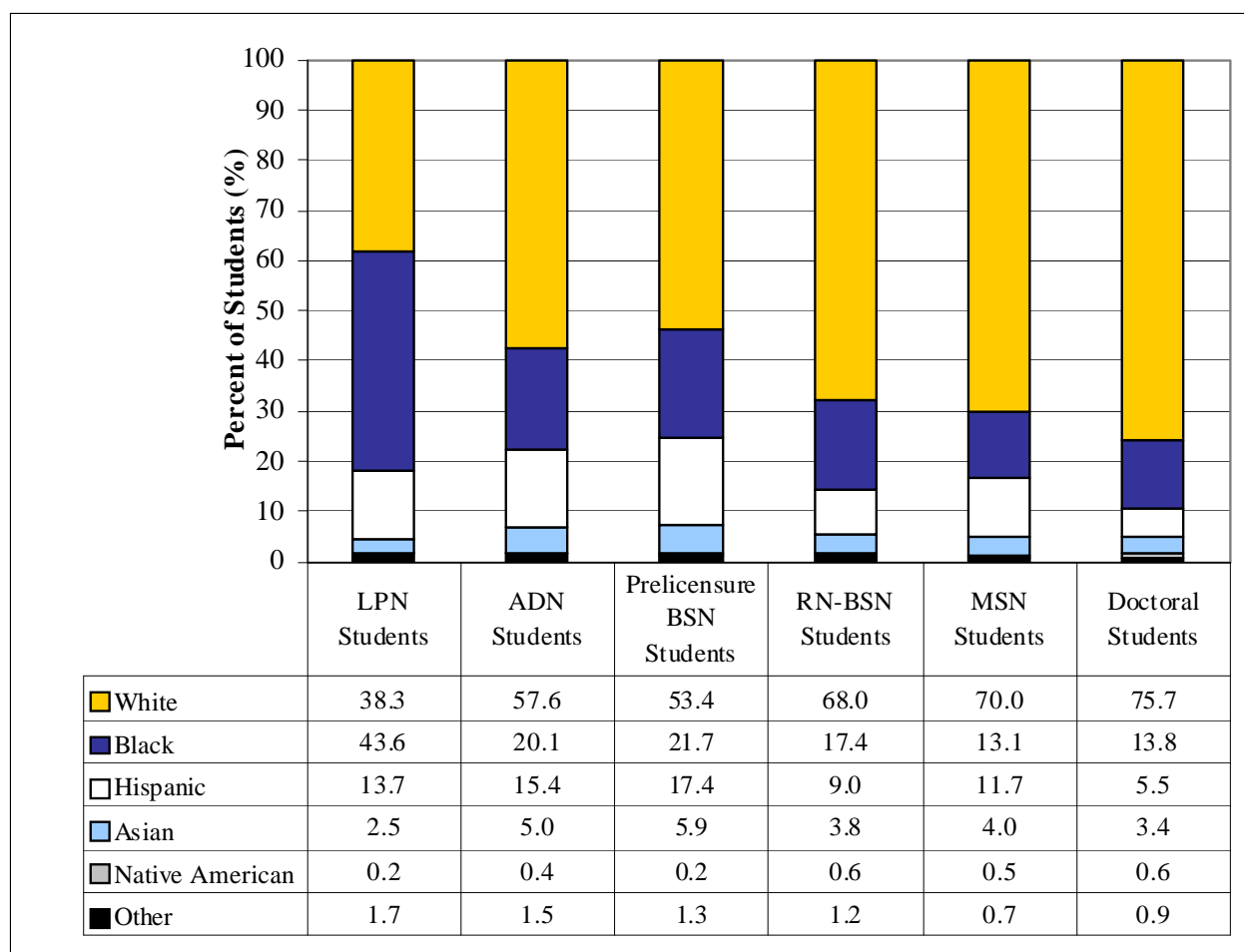


Figure 7. Race and Ethnicity of Nursing Students, 9/30/07, By Program

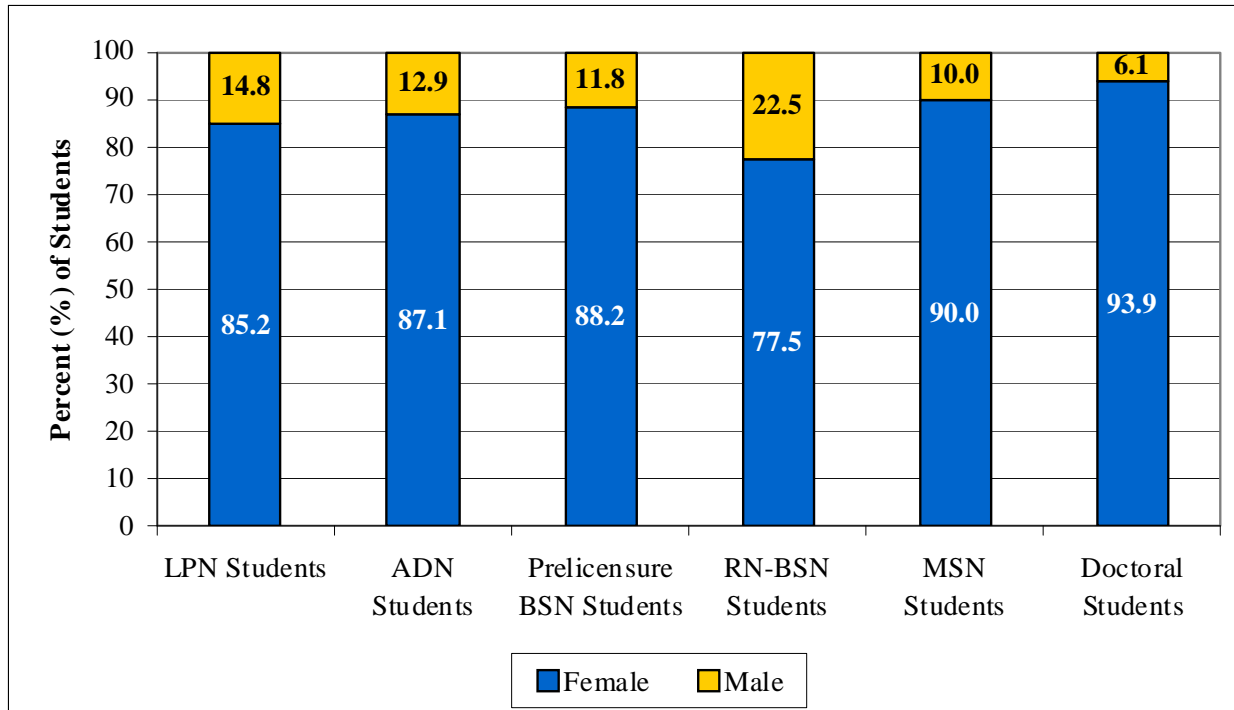


Figure 8. Gender of Nursing Students, 9/30/07, By Program

It is also generally accepted that increasing the proportion of men in nursing is necessary. Nursing has traditionally been female-dominated, a fact which has discouraged men from pursuing a career in nursing. In 2007, only 9.3 percent of licensed RNs and 8.7 percent of LPNs were male. The proportion of men currently enrolled in nursing programs is higher, as Figure 8 shows, but not by much. About 15 percent of LPN students were male as of September 30, 2007. Around 12 percent of pre-licensure RN students were male. Even fewer males are in the education pipeline leading to graduate degrees: 10 percent of MSN students and 6.1 percent of doctoral students.

Conclusions and Recommendations

Survey results clearly demonstrate that Florida's nursing education programs are struggling to expand education capacity for pre-licensure programs. RN education programs turned away nearly half of all qualified applicants to pre-licensure programs. BSN programs turned away the highest percentage of qualified pre-licensure applicants at 60 percent. Programs reported that limited clinical sites and lack of funds to hire additional faculty are the primary barriers to program expansion.

At the same time, many schools are struggling to recruit faculty for positions that were budgeted but vacant as of September 30, 2007. Programs reported a total of 177 vacant positions, and this number may underestimate the true demand for instructors because many programs do not budget positions for part-time/adjunct faculty in a traditional way. Vacancy rates for full-time faculty were quite high in LPN and BSN/graduate programs, where over 10 percent of full-time positions were vacant. Though ADN programs had lower vacancy rates, both ADN and BSN vacancy rates are *higher* than the rates computed from the last Center survey of nursing

programs for academic year 2005-2006. It is unknown whether rates have actually increased or whether the difference is due to a higher response rate for the present study.

Even more alarming is the fact that many programs reported they needed more budgeted positions than they were able to afford *just to meet the needs of their current students*. A total of 310 full-time positions would be added by all programs if funding were available. When these positions are incorporated into vacancy rate calculations, rates incorporating “need” are above 20 percent for all program types. This suggests that current faculty members are overworked – even in the perception of their administrators.

In addition to vacant and needed faculty positions as of September 30, 2007, many programs may experience a faculty shortage resulting from retirements and new positions they plan to budget over the next two academic years. More than half of current faculty members in ADN and BSN/graduate programs are between the ages of 50 and 59, and faculty age distributions reveal that full-time employment drops considerably after age 60. Add to this the fact that more than 500 new full and part-time faculty positions may be created over the next two years, and it becomes clear that Florida will require *many* more nurse educators than it currently has.

Unfortunately, survey results also indicate that very few graduate students in nursing are pursuing advanced degrees that prepare them for roles in nursing education. Only 355 students are enrolled in MSN Educator tracks, and only 206 are in Ph.D. programs. These programs tend to be lengthy and less predictable with regard to the production of graduates; many students currently in the graduate pipeline are also working full or part-time, and many will take several years to complete graduate training. In AY 2006-2007, only 103 MSN Educator track students were graduated, and only 32 Ph.D.s were produced.

The ultimate conclusion to be drawn from these faculty trends is that Florida’s nurse supply pipeline is in serious danger owing to a lack of nursing faculty, expected faculty retirements and growth in faculty positions, and a relative lack of interest in the nurse educator role as evidenced by lackluster enrollment in graduate programs. Without intervention, the rising enrollments that have characterized pre-licensure programs in the present decade may not continue.

However, increasing the number of nurse educators cannot be the sole solution to our supply pipeline bottleneck. More programs cited lack of clinical placement slots than faculty supply as barriers to program expansion. Two different computerized clinical placement models are currently being tested in Florida with the hope of maximizing clinical capacity. It is unclear, at present, whether the systems are effective in placing greater numbers of students than more traditional person-to-person systems allow. Further evaluation of the systems is required.

The Center puts forward five research and policy recommendations to better understand and address the capacity limitations within our education system:

- 1) *The Center and FBON should continue to collaborate on the annual report and workforce survey of nursing education programs.* The true value of the data reported here will be in trends identified over time. As the faculty and general nursing shortages intensify, it will be important

to monitor the impact on nursing programs. Only consistently collected faculty and student statistics will allow identification of trends.

2) *Faculty positions must be made more attractive to nurses with advanced degrees and nurses pursuing advanced degrees.* To stem the shortage of nursing faculty, three types of incentives should be considered. First, faculty salaries must be more competitive with those earned in practice settings. Second, faculty workloads must be reasonable. Many nurses take faculty positions in spite of lower salaries because such positions have historically been more flexible and had lighter workloads than positions in nursing practice. Evidence indicates that enrollment increases may be increasing the workload for current faculty, making such positions less attractive. Finally, scholarships and loan forgiveness programs for students pursuing educator roles must be adequately funded and more widespread.

3) *Nursing programs must maximize their use of technology to stretch available human resources.* Many schools across the country are experimenting with satellite, internet, and podcast technology to share faculty with other schools and campuses. Simulation labs are being used to provide some clinical experience for students where clinical capacity in area health care facilities is limited. These technological solutions for resource scarcity are promising, and they must be developed more fully if enrollment increases are to be sustained over the next decade.

4) *Nursing program capacity must be increased strategically.* The present decade has seen the opening of many new nursing programs, and these new programs have certainly contributed to our state's enrollment increases. However, adding new programs dilutes the faculty pool and creates competition for limited clinical resources. The expansion of existing programs could make better use of existing faculty and existing relationships with clinical education partners. As our data collection efforts improve, program creation and expansion should be data-driven and based on evidence that a new program can better increase the nurse supply in an area than can the expansion of existing programs.

5) *Clinical capacity must be further studied to maximize the use of limited clinical resources.* At present, we know more about the limitations of faculty shortage than clinical placement limitations. Further study may yield important clues to resource maximization that can improve our use of available clinical resources.

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