



Nursing Supply and Demand Study 2010

Greater Cincinnati Health Council
2100 Sherman Avenue, Suite 100
Cincinnati, OH 45212-2775
Phone: (513) 531-0200

Greater Cincinnati **Health Council**

If it involves health,
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I. Introduction

The purpose of the 2010 Greater Cincinnati Health Council Nursing Supply and Demand Study is to assist hospitals in projecting the future supply and demand of the workforce in order to help them prepare to meet future health care needs and ultimately create a stronger health care community.

Study objectives:

1. Gather regional data on current nursing faculty, student admission and retention, nursing workforce and workforce needs.
2. Compare 2010 results to the 2006 and 2008 Supply/Demand studies.
3. Project the future supply and demand of the hospital nursing workforce, focusing on needs, challenges and a common vision.

Hospital survey data were collected between September and December 2010. To improve estimates of supply and demand, data were also supplemented from other Health Council sources, including the Annual Vacancy/Turnover/Age Survey. Participating organizations were: Atrium Medical Center, The Christ Hospital, Cincinnati Children's Hospital Medical Center, Clinton Memorial Hospital, Dearborn County Hospital, Highland District Hospital, Lindner Center of HOPE, Margaret Mary Community Hospital, Mercy Health Partners, NorthKey Community Care, St. Elizabeth Healthcare, TriHealth and UC Health.

Ten nursing school surveys were collected between September and December 2010. Participating schools and universities were: The Christ College of Nursing and Health Sciences, Cincinnati State Technical and Community College, College of Mount St. Joseph, Galen College of Nursing, Good Samaritan College of Nursing and Health Science, Miami University, Northern Kentucky University, University of Cincinnati, University of Cincinnati at Raymond Walters, and Xavier University.

This survey considered only hospital demand for nurses and did not include other community needs for registered nurses. According to the Department of Labor's Occupational Handbook, 60 percent of all nurses are employed by hospitals. On the supply side, 80 percent of newly licensed nurses in the Greater Cincinnati area are hired by hospitals and this new 2010 data indicate a 10 percent shift of nurses moving out into the community for employment.

Survey results are reported and compared to the 2006 and 2008 Greater Cincinnati Health Council Supply and Demand Survey. The nursing workforce (Demand) findings will be presented first, followed by the schools of nursing (Supply) findings. Lastly, estimates of supply and demand for the future will be presented.

The Health Council would like to thank the members of the 2010 Nursing Supply & Demand Study analysis team for their contributions:

- Sue Davis, PhD, RN, University of Cincinnati College of Nursing
- Mary Irvin, RN, MSN, MBA, NEA-BC, Chief Nursing Officer, Good Samaritan Hospital
- Carrie McCoy, PhD, MSPH, RN, CEN
- Jane Swaim, MS, RN, St. Elizabeth Healthcare
- Michelle Taylor-Smith, RN, BSN, MSN, NE-BC, Senior Vice President & Chief Nurse Executive, TriHealth
- Deborah Tibbs, RN-BC, MSN, CCM, Assistant Professor, Miami University-Middletown
- Darla Vale, PhD, CCRN, College of Mount St. Joseph

Greater Cincinnati Health Council
2010 Nursing Supply and Demand Survey

II. Hospital Survey (Demand)

A. Registered Nurse (RN) Staff Turnover (2004-2009)

1. Changing Full-time / Part-time Employment Status within the Organization

There has been a recent reversal in the trend of changing employment status over the last several years. In 2006 and 2007, more RNs changed to full-time status and decreased their part-time status. However, starting in 2009 the trend leveled off as more RNs reverted back to part-time status. This trend appears to follow the economy, and an influx of nurses moving to part-time indicates anticipated economic improvement. The percentages and trends are shown below in Figure 1.

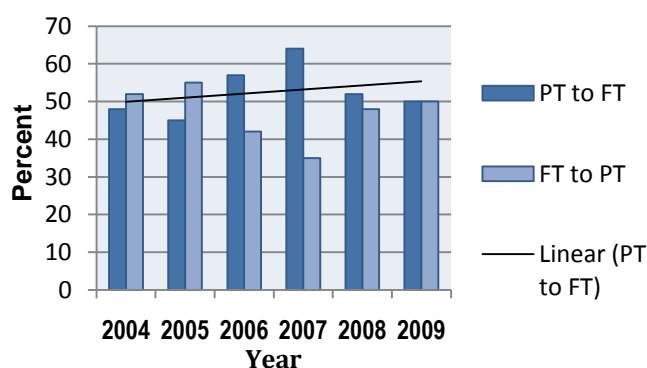


Figure 1. Percentage of registered nurses who changed from part-time to full-time or full-time to part-time and the linear trend for part-time to full-time employment status

2. Reasons for Leaving Position

The largest percentage of nurses in 2008 and 2009 left for “Other” reasons such as relocation and personal reasons. (See Figure 2.) While this trend declined in 2009, there was an upward drift through 2008 for this category, likely due to nurses choosing positions outside the hospital setting. For nurses who are leaving and indicated a specific reason for leaving, taking a different position and retirements accounted for the largest percentages at 14 percent and 6 percent, respectively. The increase in nurses leaving in order to take another position reflects that additional new opportunities may be available.

Additionally, the number of retirements held steady in 2009 and matched the projected increases predicted in the previous Supply & Demand survey from 2008. According to the Health Resources and Services Administration (HRSA), the highest rates of retirement occurred between ages 62 and 65. A Health Council 2010 survey concurred with these figures and indicated that the average age of retirement for RNs in Cincinnati was 63. However, delays in

retirement age might occur as a result of government policies delaying eligibility for Social Security and Medicare, a healthier population able to remain longer in the workforce and improvements to nursing working conditions.

One other factor that will likely impact nursing retirements is how successful nurses have been in saving for retirement. In 2010, Wells Fargo and Company conducted their sixth annual Retirement Fitness Survey and found that 72 percent of middle-class Americans between the ages of 25 and 69 expect to work through their retirement years. This trend is driven by deep deficits in personal retirement savings as the survey also found that 39 percent of middle class Americans will need to continue working in order to maintain their lifestyles. However, according to HRSA, these retirement age delays may only have a modest effect on alleviating the projected growing RN shortage over the next decade.

According to the Health Council's annual turnover study, the 2010 RN turnover rate of 8.48 percent is the lowest recorded in the last decade which is not surprising in an uncertain economy.

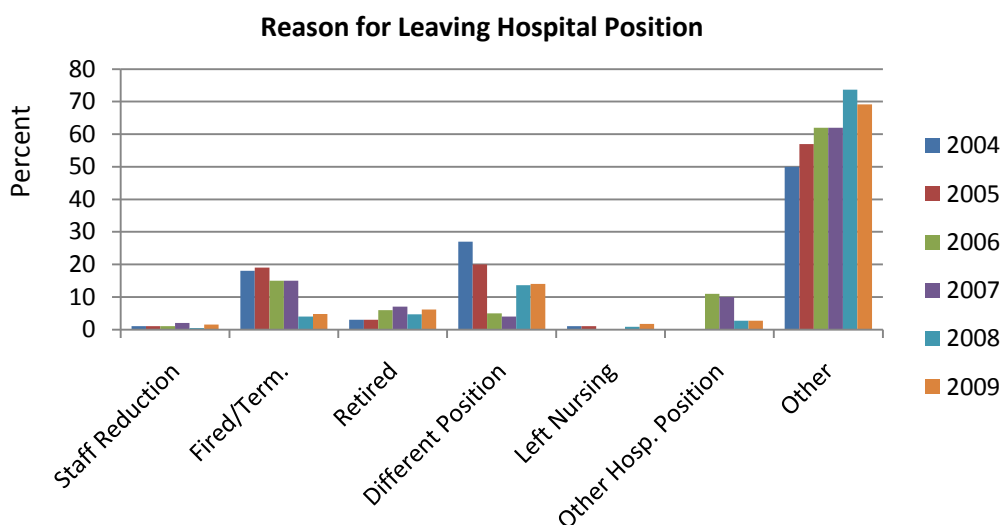


Figure 2. Reasons for leaving the hospital position are compared for years 2004 – 2009.

3. Registered Nurses Hired by Level of Experience.

There were record numbers of new graduate nurses hired in 2008 with 48 percent of all new nurses hired being new graduates. (See Figure 3.) This percentage leveled off in 2009 back to previous levels with 32 percent of new nurses hired being new graduates, and a correlation could be made with the nursing vacancy rate. In June 2010, following the influx of new graduate nurses in 2008 and 2009, the vacancy rate dipped to 2.5 percent and experienced nurses gained the hiring edge over new nurse graduates. Despite this low vacancy rate, worries remain that there will not be enough nurses in the future. Health care members have active programs to recruit interested youth into health care careers due to future nurse retirements and increase demand for nursing care.

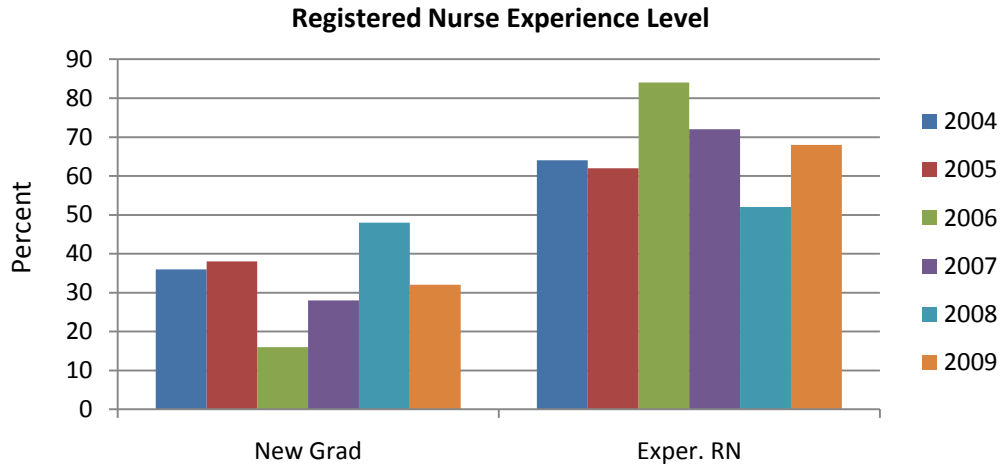


Figure 3. Percent of new RN hires by type of new hire: New Graduate, Experienced RN for the years 2004 - 2009

4. Registered Nurses Hired by Specialty Area

The percentages of RNs hired for a specialty area were similar for 2008 and 2009. As expected, medical/surgical and critical care nurses continue to be the specialty areas with the highest demand and remain the most difficult positions to fill. The Registered Nurses hired by specialty area are shown in Figure 4.

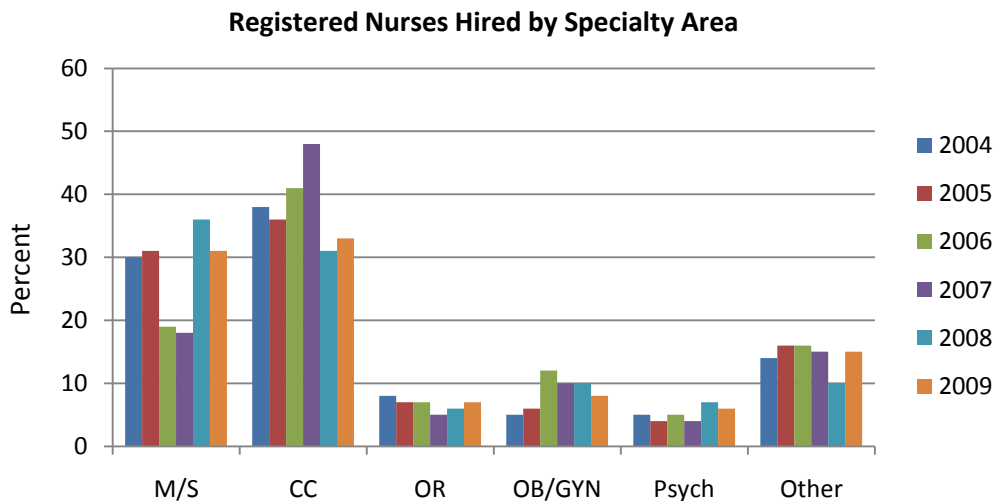


Figure 4. Percentage of Registered Nurses hired by specialty area. M/S (Medical/Surgical); CC (Critical Care); OR (Operating Room); Ob/Gyn (Obstetrics/Gynecology); Psych (Psychiatric)

B. Registered Nurse Staff (2006 – 2009 comparison)

1. RN Staff Positions: Total

Combined, all 13 participating organizations reported a total of 12,007 filled (full and part-time) positions and 304 unfilled (full and part-time) positions for a total of 12,311 available positions. In 2008, 10 organizations reported a total of 10,896 filled positions and 731 unfilled positions for a total of 11,627 available positions. Due to the differences in study participants, it is difficult to capture specific job growth statistics for RNs over this two year period. However, according to the Health Council's 2010 Semi-Annual Vacancy Survey, hospitals experienced an overall 0.6 percent job growth during the first half of 2010. This period of job growth is notable for the region since many other industries experienced high unemployment during this period of economic downturn. The increased number of staffed beds has played a key role in sustaining this job growth. In 2009, after the opening of West Chester Medical Center, the community had 4,854 staffed beds, up from 3,855 beds in 2000, according to the 2010 American Hospital Association Guide.

The Staff RN retention rates have shown an increase over 2008 and 2009, with the 2008 retention figure at 84 percent and the 2009 retention figure at 89 percent. These figures reflect RNs remaining in their positions longer as they postpone retirement during tough economic conditions.

2. RN Staff Positions: Filled / Unfilled and Full / Part-time

The percentages of filled positions saw an increase from 2008 to 2010. In 2008, there was a 7.3 percent vacancy rate, and in 2010 the vacancy rate dipped to 3.0 percent. A vacancy rate greater than 5 percent is often a reflective of a shortage of nurses, and the recent economic downturn has likely had an impact on the reduced vacancy rate. Looking forward, many factors will likely increase vacancy rates, notably older nurses heading for retirement, an aging population and health care reform driving up the demand for patient care, particularly in community settings.

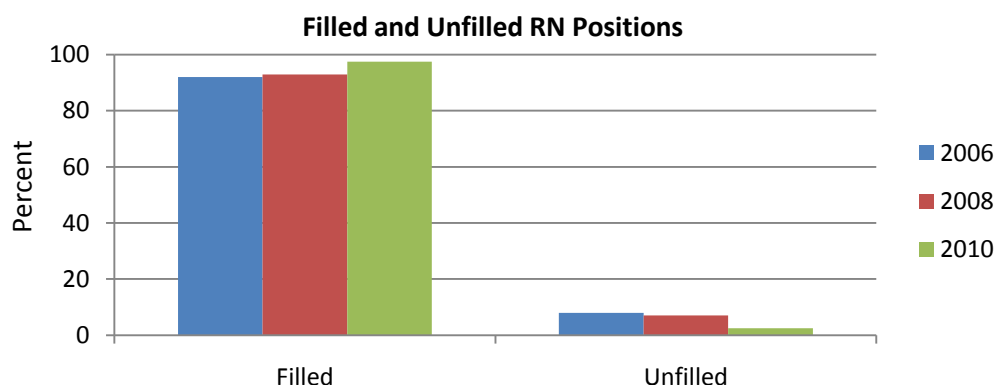


Figure 5. Percentage of filled and unfilled positions for years 2006, 2008 and 2010

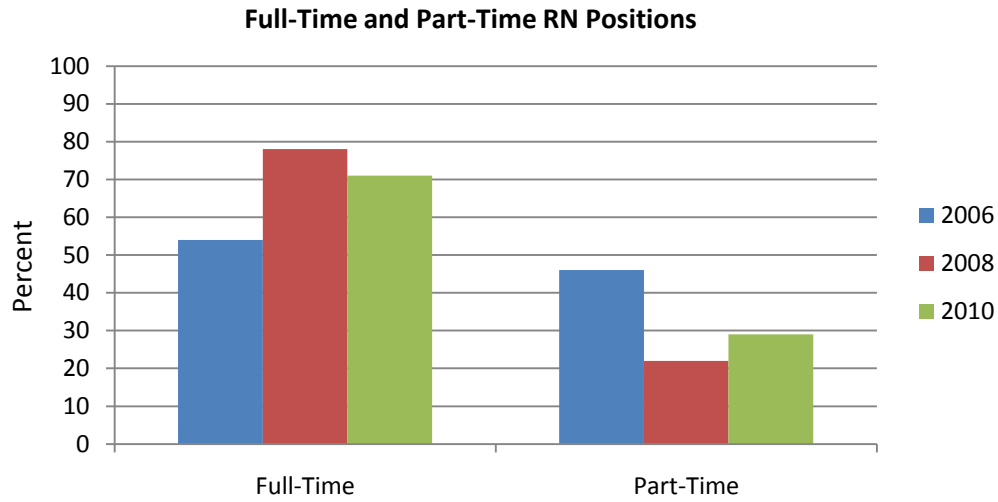


Figure 6. Percentage of full-time versus part-time positions for years 2006, 2008 and 2010

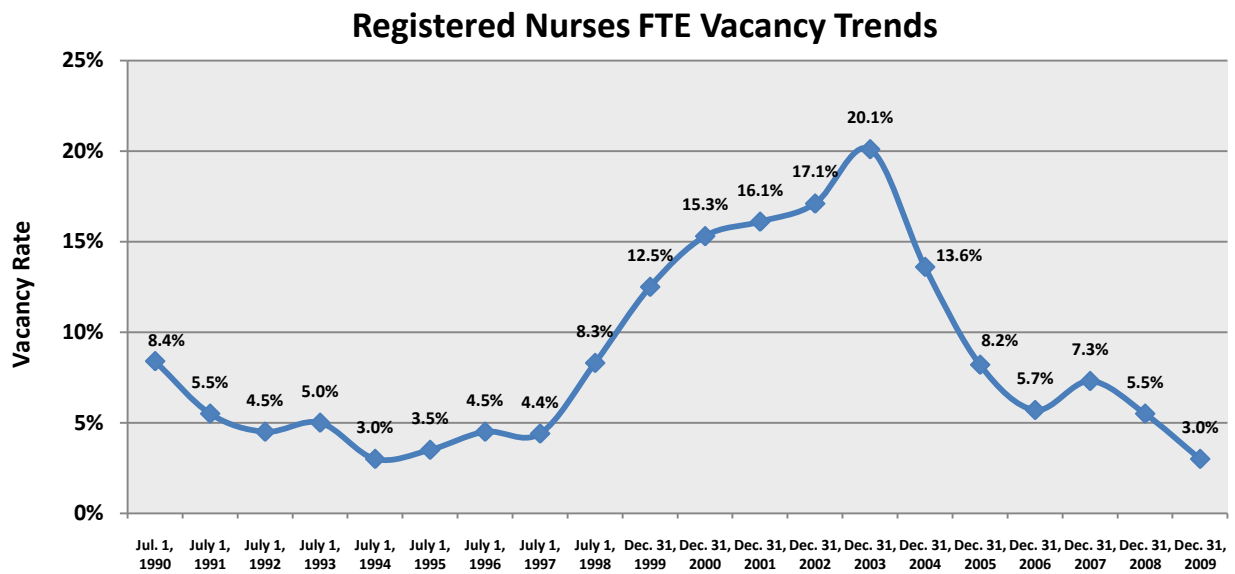


Figure 7. Vacancy rates based on the Health Council's annual vacancy survey

3. RN Staff Positions: Specialty Areas

As forecasted in the 2006 and 2008 surveys, and as shown in the 2010 survey, medical/surgical and critical care positions continue to show the highest demand among RN specialty areas. These two specialty areas will continue to be the primary focus for staffing acute care beds. Changes are shown in Figure 8.

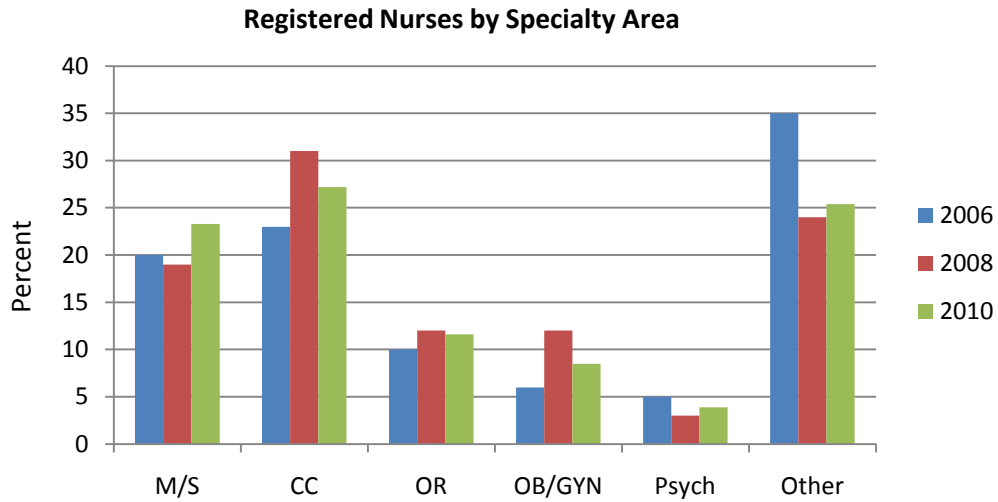


Figure 8. Percent of specialty RN staff for years 2006 and 2008.

4. Staff Positions: Role

The proportions of RN staff by role are consistent from 2006 to 2010 (see Figure 9). Approximately 90 percent of hospital RNs are in direct care roles for all surveys. The ideal ratio of administration, staff education and direct care providers depends on organizational structure and staff characteristics. However, the high ratio of direct care providers of the last four years indicates a strong value for the importance of bedside care, as well as a high level of acuity demanding well-educated and clinically competent nurses. The region is also expecting a continual rise in positions for Advanced Nurse Practitioners as the industry encourages and supports practice to the full extent of nurses’ education and training.

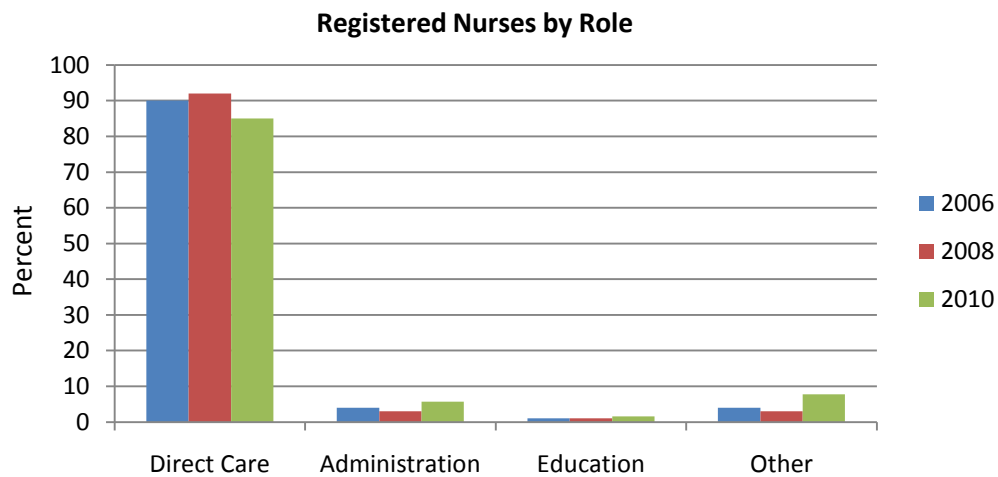


Figure 9. Percent of RN positions by role

C. Registered Nurse Staff Demographics (2006 – 2010 comparison)

1. Age distribution for Registered Nurses

Hospitals have seen a slight increase in nurses in the 55-64 and 65+ age groups, and they have also seen a big jump in nurses 25-34 years. Meanwhile, much of the percentage drop is with middle-aged nurses in the 35-44 and 45-54 age groups. These numbers suggest that there has been a recent influx of new graduate nurses entering the field as well as a larger number of older nurses delaying retirement, likely due to the economy. According to the Health Council's vacancy survey, the average age of RNs who retired in 2009 was 63 in contrast to the previous national figure of 55 years. The expectation is that this upward trend will continue as baby boomers desire to work into their later years at least until deflated retirement accounts level out.

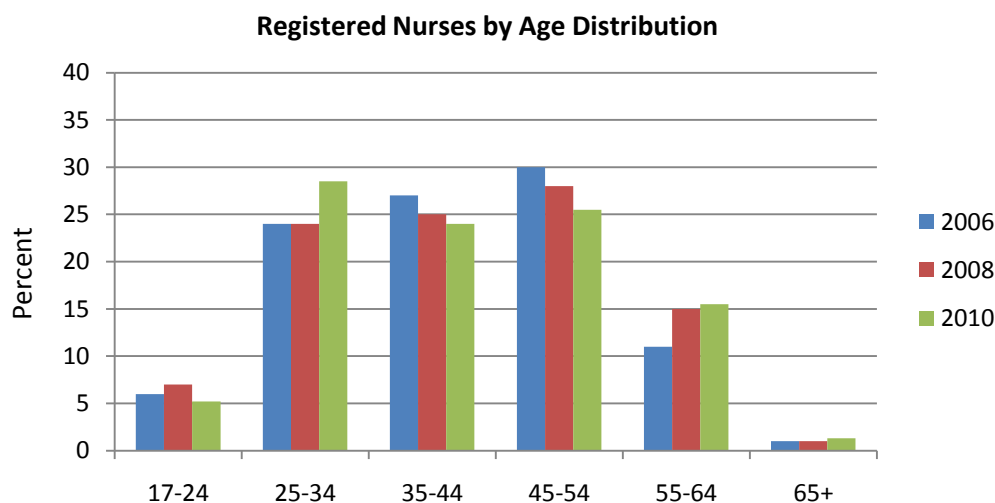


Figure 10. Percent of RN age distribution for years 2006, 2008 and 2010

4. Race and Ethnicity for Registered Nurses

There was little change in race/ethnicity distribution from 2006 and 2008 to 2010, with non-Hispanic white RNs representing over 90 percent of the distribution. (See Figure 11.) Non-Hispanic blacks represent 5 percent, and all other minorities represent 3 percent of the RN population. While there has not been much change in minority nursing positions, the Health Council's Diversity Study shows the number of Hispanic hospital staff increased in 2009. Nationally, according to Minority Nurse.com, approximately 4.2 percent of the RN population are African American (non-Hispanic); 3.1 percent are Asian, Native Hawaiian or Pacific Islander (non-Hispanic); 1.7 percent are Hispanic or Latino; 0.3 percent are American Indian or Alaska Native; and 1.4 percent categorize themselves as two or more races and non-Hispanic.

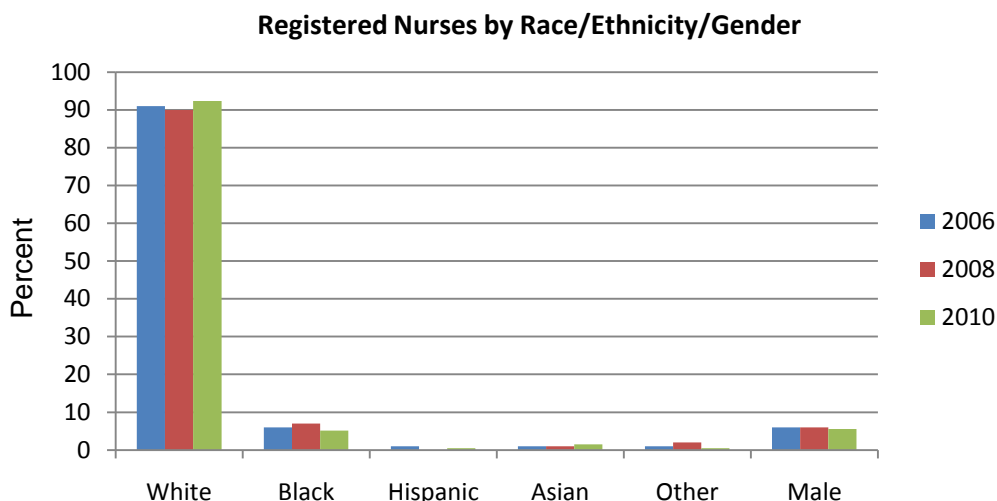


Figure 11. Percentage of Registered Nurses by Race/Ethnicity for 2006, 2008 and 2010

3. Gender

The percentage of males employed in local hospitals was 5 percent in 2010, which is a slight drop from the 2008 figure of 6 percent. According to the National Sample Survey of Registered Nurses, males comprise 5.4 percent of nurses nationally. Regional initiatives attempting to attract males to RN fields include hospital sponsored explorer programs for males and a local chapter of the American Assembly of Men in Nursing.

4. Hospital RN Educational Level

Education levels for RNs have sharply increased over the last several years. (See Figure 12.) The number of nurses with bachelor's degrees increased to 41 percent in 2010 from 33 percent in 2008. The number of nurses with master's degrees also climbed considerably, up to 12 percent in 2010 from 3 percent in 2008.

With the addition of four Magnet hospitals in our region, the expectation is that nurses in these organizations will endeavor to advance their educational level. Magnet certification requires hospitals to continually increase their numbers of RNs who possess a bachelor's or higher degree of education.

Additionally, some local hospitals now prefer to hire RNs with a bachelor's degree. Nationally, the American Association of Colleges of Nursing (AACN) released preliminary data in December 2010 showing that enrollment into entry-level baccalaureate nursing programs increased by 6.1 percent in 2010 compared to 2009. This marked the 10th consecutive year of enrollment growth in professional RN programs, and the growth of professional RN students suggests that numbers of those with bachelor's degrees or higher are likely to continue climbing

over the next several years. Hospital support of advanced education plus flexible online education will allow nurses additional opportunities to pursue advanced degrees in the coming years.

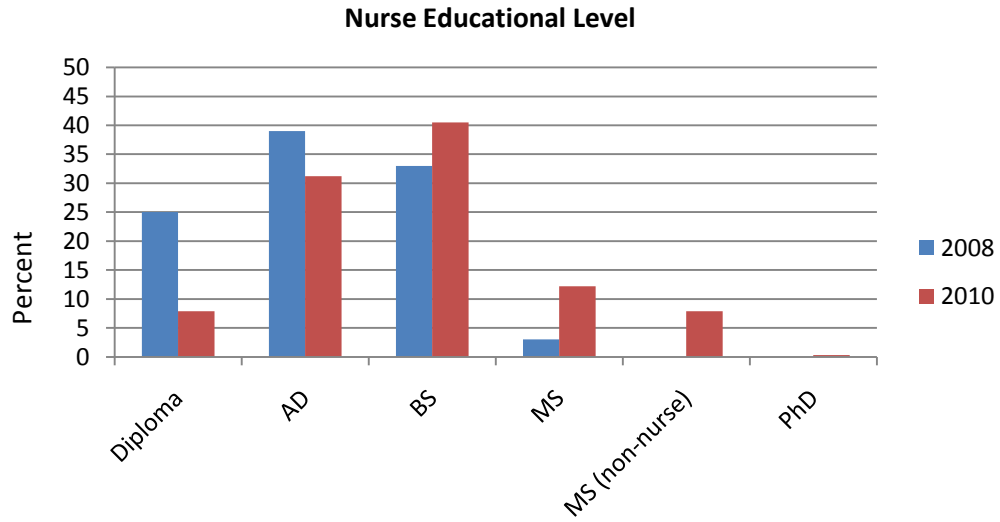


Figure 12. Percentage for educational levels of hospital RNs in 2008 and 2010

III Schools of Nursing Survey (Supply)

A. Students

1. Program Admissions

The number of student admissions increased in 2009 (1,523) but dropped slightly in 2010 (1,127). The distribution of student admissions for 2005-10 is shown in Figure 13. Most programs show a waiting list, which is further indication that the programs have reached and maintained full capacity. A total of 918 applicants in 2009 and 753 applicants in 2010 were placed on a waiting list resulting in 27 percent of qualified applicants denied admission in 2009 and 30 percent of qualified applicants denied admission in 2010.

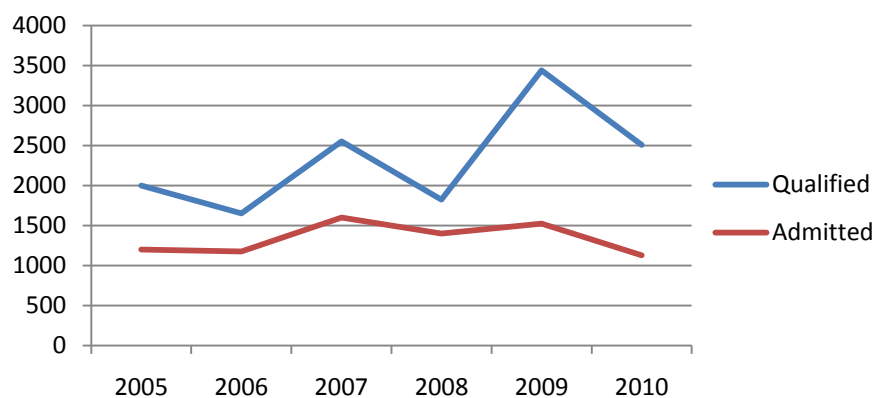


Figure 13. The number of qualified applicants and the number of admitted students to schools of nursing for the years 2005-2010

2. Student Demographics (Age / Race/ Ethnicity)

In 2009 and 2010, the age distribution of nursing students showed an influx of older nursing students. Nursing schools saw declines in the number of students between the ages of 17 and 24 and saw increases in the number of students between ages 25 and 34. HRSA noted that in 1985, the average age of a nurse graduate was 24 years, however, in 2004 the average age of a nurse graduate rose to 31 years. National figures also show that registered nurses who graduated with a bachelor's or higher degree tend to be five years younger at graduation than those nurses who graduate with an ADN or diploma. Regionally, hospitals are now beginning to focus on hiring nurses with a bachelor's degree and if the above national trend continues, it is likely that the age distribution of nurses in local nursing schools could lean toward younger nursing students and reverse these latest trends noted in 2009 and 2010.

The race/ethnicity of admitted students remained consistent from 2005 through 2008; however, a greater number of students identified themselves as an “Other” race in 2009 and 2010. (See Figure 15.) The number of admitted white students declined in both 2009 and 2010 whereas the number of Black, Hispanic and Asian students remained fairly consistent.

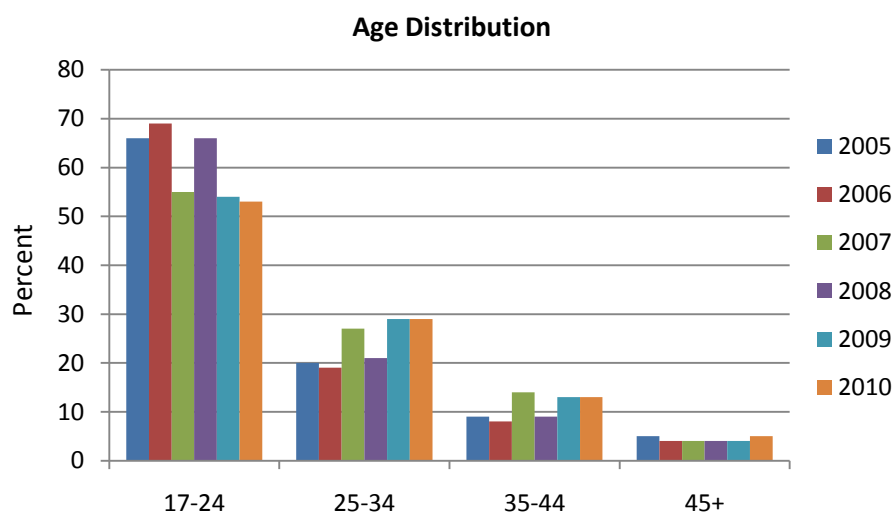


Figure 14. Percent of age groups for nursing students admitted for academic years 2005-2010

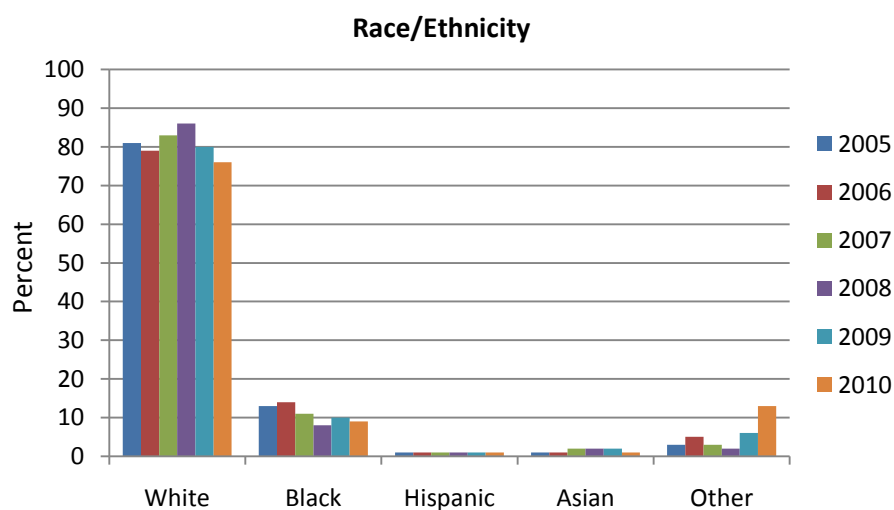


Figure 15. Percent of nursing student admission by race/ethnicity for academic years 2005-2010

3. Student Retention

Retention rates for the academic school years of 2006, 2008 and 2010 are shown in Figure 16.

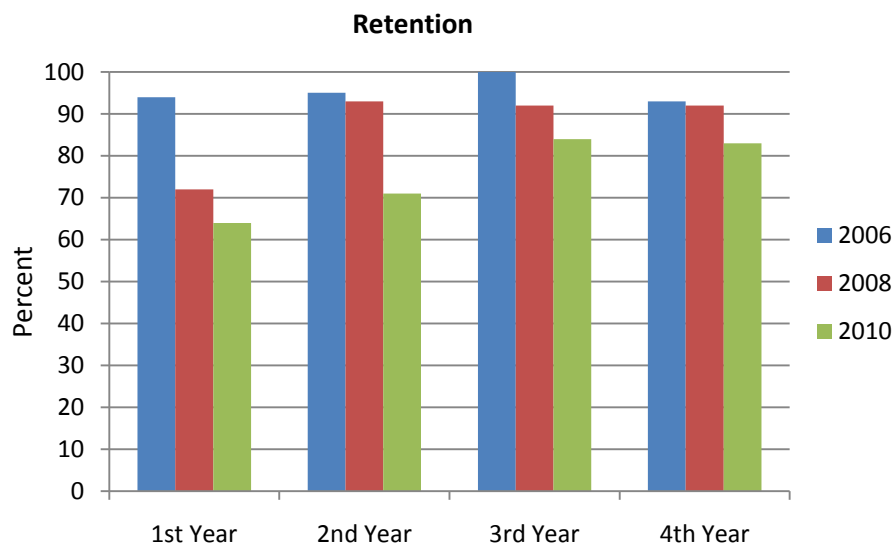


Figure 16. Percent retention for nursing students in Academic Years 2006, 2008 and 2010

Four schools reported retention data, however, across those participants student retention for all academic years dropped in 2010. Reasons for attrition are: students' inability to meet academic expectations, demands of family and work, financial need, and change in major. This data supports the need for nursing schools to continue their efforts in screening qualified candidates during the admissions process.

4. Pass Rates for the NCLEX Examination

In 2006, 89 percent of graduates passed the NCLEX examination on the first attempt, and 2008 and 2010 saw those numbers decline. By 2010, only 84 percent of graduates passed the NCLEX on the first attempt. These numbers show a downward trend which conflicts with the national trend of a higher percentage of graduates passing the NCLEX on the first attempt. Please see Figure 17 on the following page.

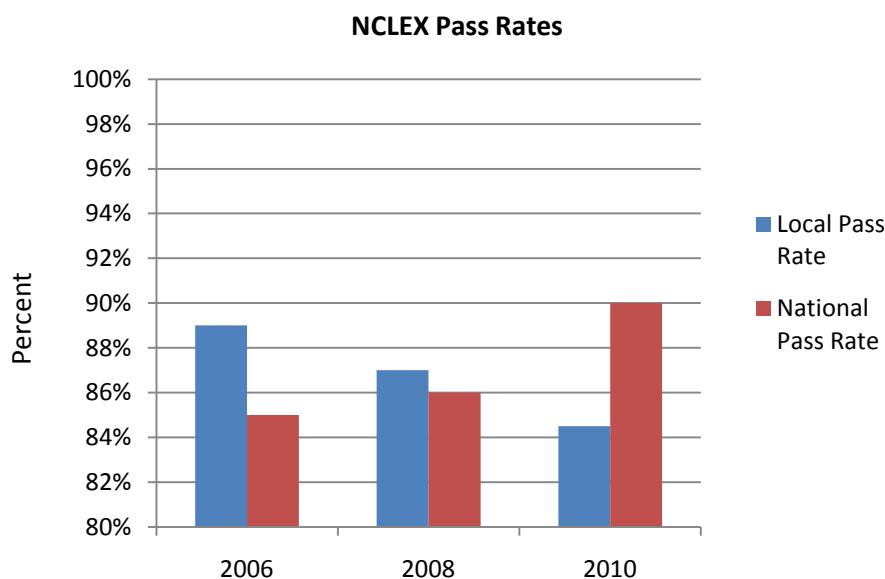


Figure 17. Pass rate of nursing graduates passing NCLEX examination on the first try for the years 2006, 2008 and 2010

5. Placement of Graduates

In 2008, participating nursing schools indicated that 99 percent of their new graduates who elected to remain in the Cincinnati Metropolitan Statistical Area (MSA) and were hired into a health care organization were hired into a hospital. In 2010, that percentage dipped to 80 percent as more new graduate nurses were hired into other health care settings outside the hospital. The expectation is that this trend will continue as health care reform drives more health care services into the community setting with an emphasis on preventive care. Additionally, greater opportunities will be available in long-term care due to the increased numbers of elderly patients needing home or residential care.

The recent economic downturn also impacted the placement of graduates as hospitals reported in 2010 that they had more RN applications from new graduates than available RN positions. The National Student Nurses' Association published an advisory that warns that the market is flooded with experienced nurses who have come back to work out of retirement or delayed retirement. As the economy improves, the number of RN positions available to new graduates is expected to significantly increase. Nationally, the Bureau of Labor Statistics projects that more than 581,000 new RN positions will be created through 2018.

Percentage of Cincinnati MSA New Graduate Nurses Hired in Hospitals

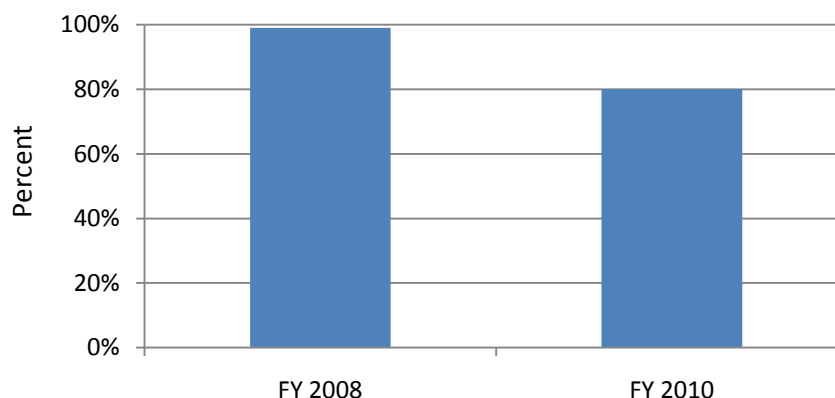


Figure 18. New graduates hired in hospitals

B. Concerns limiting program capacity

Factors limiting program capacity were rated as: 4 (critical), 3 (major), 2 (moderate), 1 (minor) and 0 (none). The comparison of concerns for 2006, 2008 and 2010 are shown in Figure 19. While financial factors and availability of faculty were the primary concerns in 2008, clinical placement concerns have evolved as the greatest concern in 2010.

Regionally, a centralized clinical placement system within the Tristate Nursing Resource Center (TNRC) assists with real-time availability tracking and notable efficiencies in cost and time commitments to scheduling students in clinical rotations. In 2010 there were 13,554 placements utilizing the Health Council's TNRC system, which represents a 57 percent increase from 2009.

Nationally, there is a trend to utilize high-fidelity simulated clinical experiences due to the decrease of available hospital settings. Locally, two-year programs averaged 11.4 high-fidelity simulation hours in the first year and 12.8 high-fidelity simulation hours in the second year. However, four-year programs offered much less high-fidelity simulation hours during their first two years – 1.43 hours in the first year and 3.67 hours the second year. Four-year programs elected to have the bulk of their high-fidelity simulation hours occur during the third and fourth years with an average of 7.6 hours in the third year and 8.6 hours in the fourth year.

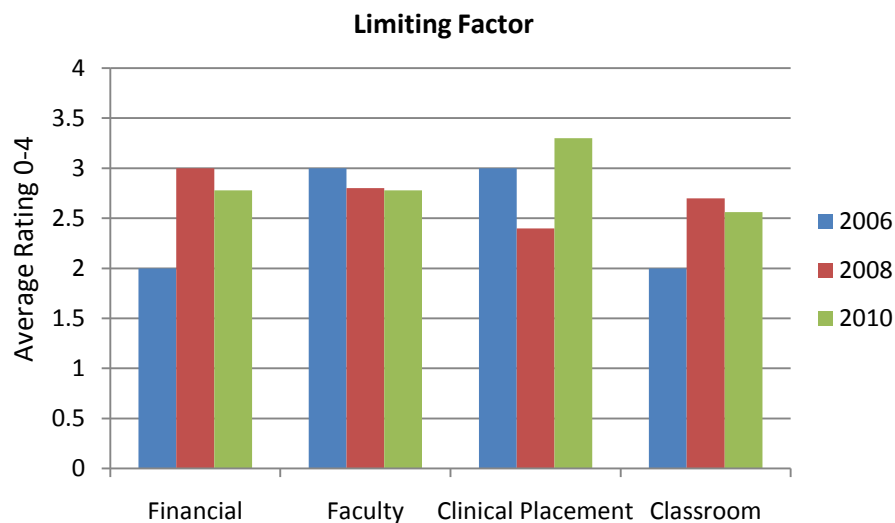


Figure 19. Average rating (0 – 4) for concerns limiting program capacity for Academic Years 2006, 2008 and 2010

C. Faculty

1. Positions

In 2010, there were 465 faculty positions available (full and part-time positions) with a vacancy rate of only 3 percent. The vacancy rate has dropped considerably since 2006 when it was as high as 12 percent, though it has likely followed the economic trend of other health care positions as vacancy rates across the industry have declined significantly through the economic downturn. Meanwhile, part-time faculty saw increased numbers while full-time faculty saw decreased numbers. Part-time faculty have been needed and are available to supervise the large number of regional clinical students while available full-time faculty fell due to a lack of qualified (masters and PhD prepared) candidates.

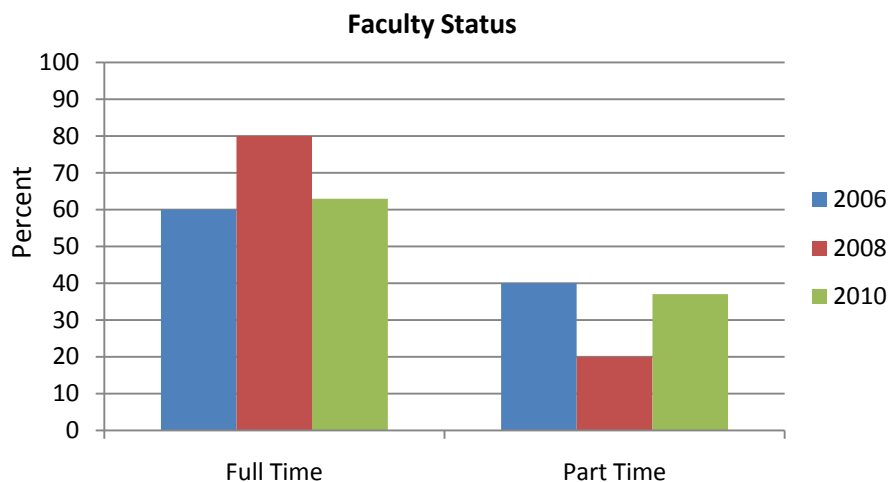


Figure 18. Percent full-time and part-time faculty status for 2006, 2008 and 2010

2. Demographics (Age / Race/ Gender)

The age distributions for 2010 indicate an aging of the population (see Figure 19). Faculty members age 60 and over increased to 18 percent in 2010 from 12 percent in 2008, and faculty members age 50-59 increased to 35 percent in 2010 from 33 percent in 2008. This trend highlights the need for advanced education in the region to replace soon-to-be retiring faculty.

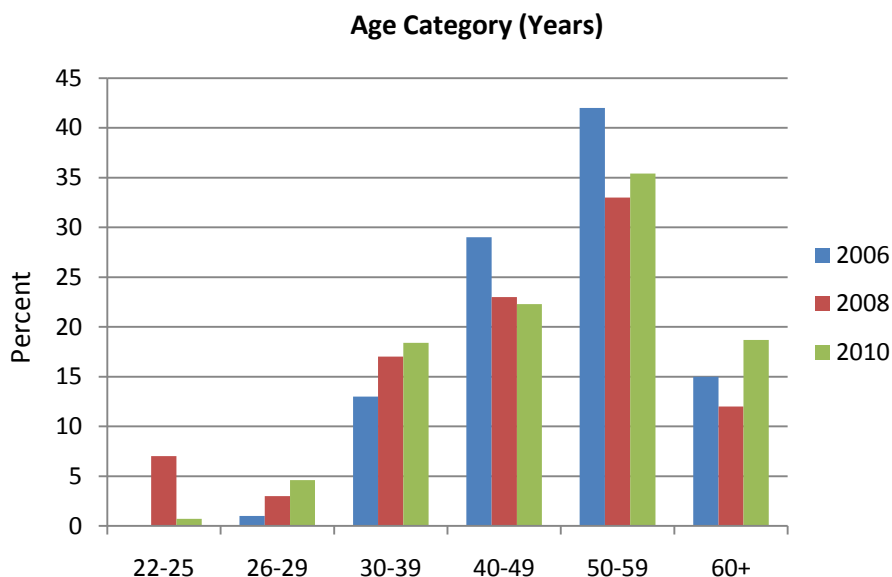


Figure 19. Percent of faculty in age categories for years 2006, 2008 and 2010

3. Faculty Compensation

The average starting salary for full-time faculty in 2010 was \$55,986 compared to \$55,019 in 2008. The average hourly rate for part-time faculty in 2010 was \$33.00 compared to \$33.75 in 2008. Low salaries are historically considered as one of the primary reasons nurses with masters and doctorates have not been attracted into nursing education.

4. Faculty Changes & Expected Retirements

More faculty members retired in 2010 as compared to 2008, and these retirement numbers are worrisome in regards to future nurse supply. Faculty retention continues to be a growing issue, especially since a large portion of the current faculty is nearing retirement age. According to the AACN, the impact of faculty age and retirement timelines coupled with a small pool of younger faculty are the primary influences on potential future faculty availability. The Tristate region recognizes the continual need for competent and properly prepared nursing faculty to educate the nurses of tomorrow.

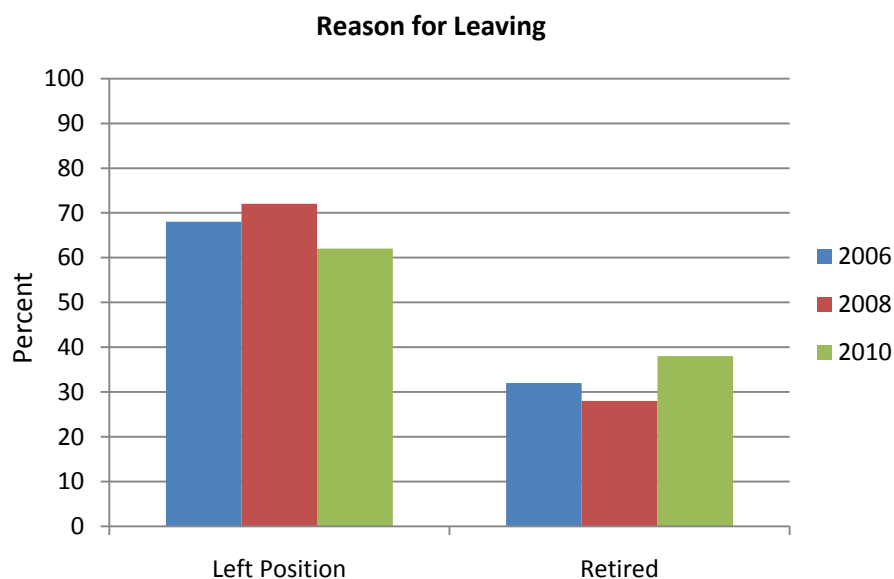


Figure 20. Percent of educators who left the position or retired for academic years 2006 and 2008

IV. Estimates of RN Supply/Demand

For this year's survey, three scenario projection models were used in order to attempt to measure the effectiveness of various supply factors by schools. Each scenario projection is based on assumptions from local data collected for the 2010 survey and from national reports. Due to several economic and socioeconomic variables that the survey results are unable to measure, it is important to note that these scenarios are merely estimates for what may transpire over the next several years. Also, please note that these models are based on hospital supply and demand and does not account for community health settings, which are projected to increase demand based on healthcare reform.

Assumptions for All Scenarios

- 1) The baseline number of RNs is 12,007, which is the number of full and part-time RN positions in participating hospitals.
- 2) Demand for RNs increases annually at 1 percent beginning in 2011. This rate is based on recent survey data suggesting that RN job growth has slowed in recent years and may continue to slow as health care reform may push more patients to non-acute care hospital settings.
- 3) The percentage of nurses leaving the workforce in 2011 is 9 percent and increases by a half percent annually until reaching a plateau of 11 percent in 2015. This rate and incremental increases are based on recent survey data and national aging data indicating that an increasing number of "baby boomer" RNs may be retiring in the next decade; the earliest baby boomers will be turning 65 in 2011. Reasons for leaving the workforce includes retirements, taking nursing positions out of the hospital and "other" categories reported in survey data.

Scenario 1: Supply Remains Constant

Assumptions for Scenario 1

- 1) Nursing schools make very little changes to numbers of student enrollments and graduations with only a two percent increase in graduations in 2011 and slight increases in graduations each year thereafter due to current limitations in RN education programs.
- 2) Current graduate numbers include the number of RNs who have passed the NCLEX examination. The migration into the region is considered a constant and is a part of the estimate for supply based on local survey data. The baseline supply is 1,108 nurses.

Year	Demand (1% annual increase)	Total RNs in workforce	Leaving Workforce	Demand plus leaving workforce	RNs entering the local workforce	Percent shortage
2011	90	12,097	1,089	1,179	1,130	4.13%
2012	91	12,188	1,158	1,249	1,132	9.32%
2013	92	12,280	1,228	1,320	1,135	14.03%
2014	93	12,373	1,299	1,392	1,137	18.32%
2015	94	12,466	1,371	1,465	1,139	22.24%
2016	95	12,561	1,382	1,476	1,142	22.68%
2017	96	12,657	1,392	1,488	1,144	23.12%
2018	97	12,753	1,403	1,499	1,146	23.56%
2019	98	12,851	1,414	1,511	1,148	24.00%
2020	98	12,949	1,424	1,523	1,151	24.44%

Scenario 1 Comments

The recent economic downturn has limited the impact of a nursing shortage in recent years with vacancy rates dropping to 3 percent. If nursing schools show only slight increases in graduations over the next decade, however, it is projected that a nursing shortage will begin to impact the region once again starting in 2012 and then peak at significant levels above 20 percent from 2015 to 2020.

Scenario 2: Supply Expanded Moderately

Assumptions for Scenario 2

- 1) Nursing schools make moderate changes to numbers of student enrollments and graduations with a 2 percent increase in graduations in 2011, a slight increase in graduations in 2012 and then greater increases in graduations occurring every other year starting in 2013.
- 2) Current graduate numbers include the number of RNs who have passed the NCLEX examination. The migration into the region is considered a constant and is a part of the estimate for supply based on local survey data. The baseline supply is 1,108 nurses.

Year	Demand (1% annual increase)	Total RNs in workforce	Leaving Workforce	Demand plus leaving workforce	RNs entering the local workforce	Percent shortage
2011	90	12,097	1,089	1,179	1,130	4.13%
2012	91	12,188	1,158	1,249	1,132	9.32%
2013	92	12,280	1,228	1,320	1,189	9.91%
2014	93	12,373	1,299	1,392	1,191	14.40%

2015	94	12,466	1,371	1,465	1,251	14.61%
2016	95	12,561	1,382	1,476	1,253	15.10%
2017	96	12,657	1,392	1,488	1,316	11.54%
2018	97	12,753	1,403	1,499	1,319	12.04%
2019	98	12,851	1,414	1,511	1,385	8.36%
2020	98	12,949	1,424	1,523	1,388	8.89%

Scenario 2 Comments

This scenario projection is based on the premise that nursing schools will begin to take some steps to increase graduates but may only be able to sustain these increases every other year rather than every year. If nursing schools show moderate increases in graduates every other year during the next decade, it is projected that a nursing shortage will begin to impact the region once again starting in 2012 with a peak shortage of approximately 14 percent in 2015 and 2016. Moderate increases in graduates would lessen the shortage beginning in 2017, but a moderate shortage would still exist through 2020.

Scenario 3: Supply Expanded Significantly

Assumptions for Scenario 3

- 1) Nursing schools make significant changes to numbers of student enrollments and graduations with a 2 percent increase in supply in 2011, a slight increase in graduations in 2012 and then a 5 percent increase in graduations beginning in 2013 and occurring each year through 2016. After four years of rapid graduation increase from 2013 to 2016, nursing schools reduce their graduation increase to 2 percent each year from 2017 to 2020.
- 2) Current graduate numbers include the number of RNs who have passed the NCLEX examination. The migration into the region is considered a constant and is a part of the estimate for supply based on local survey data. The baseline supply is 1,108 nurses.

Year	Demand (1% annual increase)	Total RNs in workforce	Leaving Workforce	Demand plus leaving workforce	RNs entering the local workforce	Percent shortage
2011	90	12,097	1,089	1,179	1,130	4.13%
2012	91	12,188	1,158	1,249	1,132	9.32%
2013	92	12,280	1,228	1,320	1,189	9.91%
2014	93	12,373	1,299	1,392	1,248	10.30%
2015	94	12,466	1,371	1,465	1,311	10.52%
2016	95	12,561	1,382	1,476	1,376	6.77%
2017	96	12,657	1,392	1,488	1,404	5.63%
2018	97	12,753	1,403	1,499	1,432	4.49%

2019	98	12,851	1,414	1,511	1,461	3.33%
2020	98	12,949	1,424	1,523	1,490	2.16%

Scenario 3 Comments

This scenario projection is based on the premise that nursing schools will begin to take significant steps to increase the number of graduates from 2013 to 2016 before lowering their graduation increases in 2017. If nursing schools show 5 percent increases in graduations every year from 2013 to 2016 and then lower their graduation increases to 2 percent from 2017 to 2020, then it is projected that a nursing shortage may peak at only 10 percent from 2013 to 2015. Significant increases in graduations would be able to lessen the shortage beginning in 2016 and would further improve efforts that may eliminate a nursing shortage by 2020.

About the Greater Cincinnati Health Council

The Greater Cincinnati Health Council is a widely recognized association that provides a unique forum for hospitals and health care leaders to collaborate and create a stronger health care community. For more than 50 years, the Council has served as a trusted voice on hospital and health care issues for the Tri-state region.