

ARIZONA STATE BOARD OF NURSING

Doug Ducey
Governor

Joey Ridenour
Executive Director



SUMMARY AND ANALYSIS OF ANNUAL REPORTS FROM ARIZONA NURSING EDUCATION PROGRAMS Calendar Year 2014

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EDUCATION PROGRAMS
CALENDAR YEAR 2014

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INTRODUCTION

The Mission of the Arizona State Board of Nursing is to protect the public health, safety and welfare through the safe and competent practice of nurses and nursing assistants.

ANNUAL REPORTS DATA

Since 2001, the Arizona State Board of Nursing (Board) has requested that pre-licensure nursing program submit an annual report for the purpose of gathering admission and graduation data. Commencing in 2003, programs supplied data regarding open student placements on the first day of class, faculty, post-licensure students, and number of applicants that met qualifications but were not admitted to the semester for which they applied. Attrition data has been provided since 2004. Starting in 2006, programs were asked to identify students who graduated on time, within 100%, 150% or took longer than 150% of the allotted time to complete the program. In 2008, programs were asked to identify the faculty to student ratio for didactic classes. In 2013, programs were asked to report on their faculty and student diversity. The annual reports cover a calendar year from January 1 to December 31. All 37 approved programs that had admissions or graduations in 2013 were provided surveys with all programs returning the survey (100% response rate). Surveys were not anonymous. The final part of each program’s report contains the program administrator’s attestation of compliance with Board education rules (A.A.C. Chapter 4, Title 19, Article 2).

DEFINITION OF TERMS	
Total Enrollment	The number of students enrolled in a pre-licensure nursing program.
Total Admissions	The number of students admitted to the first session of a nursing program, regardless of whether it was fall, spring, or summer.
Students Offered Placement	The number of students offered a placement in an admission cohort.
Students Registered for the First Clinical Course	The number of students that registered the first nursing clinical course—same as admissions for programs with a second admission process (after pre-requisites)—different for those with direct admissions to both the school and nursing program without pre-requisites to clinical courses.
Students Registered Who Did Not Attend	The number of students who registered for the first nursing clinical but never attended classes.
Open Placements in the First Nursing Clinical Course on the First Day of Class	The number of placements that were not filled on the first day of classes; this includes those who registered but did not attend.
Qualified Applicants Not Admitted to the Session for Which They Applied:	Number of applicants who were qualified for admission but were either denied, placed on a wait list, or admitted to a semester other than the one for which they applied.

Advanced Placement Admissions:	The number of students, usually LPNs, admitted to a session, other than the first clinical session, of an RN program.
Capacity	The total number of student placements available in a nursing program.
On-time graduation	The number of students who graduated in the time-frame of the published curriculum plan.
Repeated or dropped back	The number of students who took longer than their admission class to complete a nursing program because they either repeated a course, failed to follow the prescribed curriculum or dropped out/back for a period.
Faculty	Has the same meaning as R4-19-204—anyone teaching didactic and/or clinical nursing courses regardless of educational preparation or title.
Readmission	Means anyone who attended a particular nursing program, dropped out for a period and is now requesting a repeat admission into the program. The original cohort of this individual may have already graduated. The readmitted student would be counted as a person who took more than the ideal time to graduate because they are tied to the first admission cohort.
Session	The academic time period for course offerings; usually a semester (13-15 weeks) or quarter (9-10 weeks) but may vary depending on the institution.

ASSUMPTIONS/EXPLANATORY REMARKS

The following assumptions and explanations were made in compiling and interpreting the data:

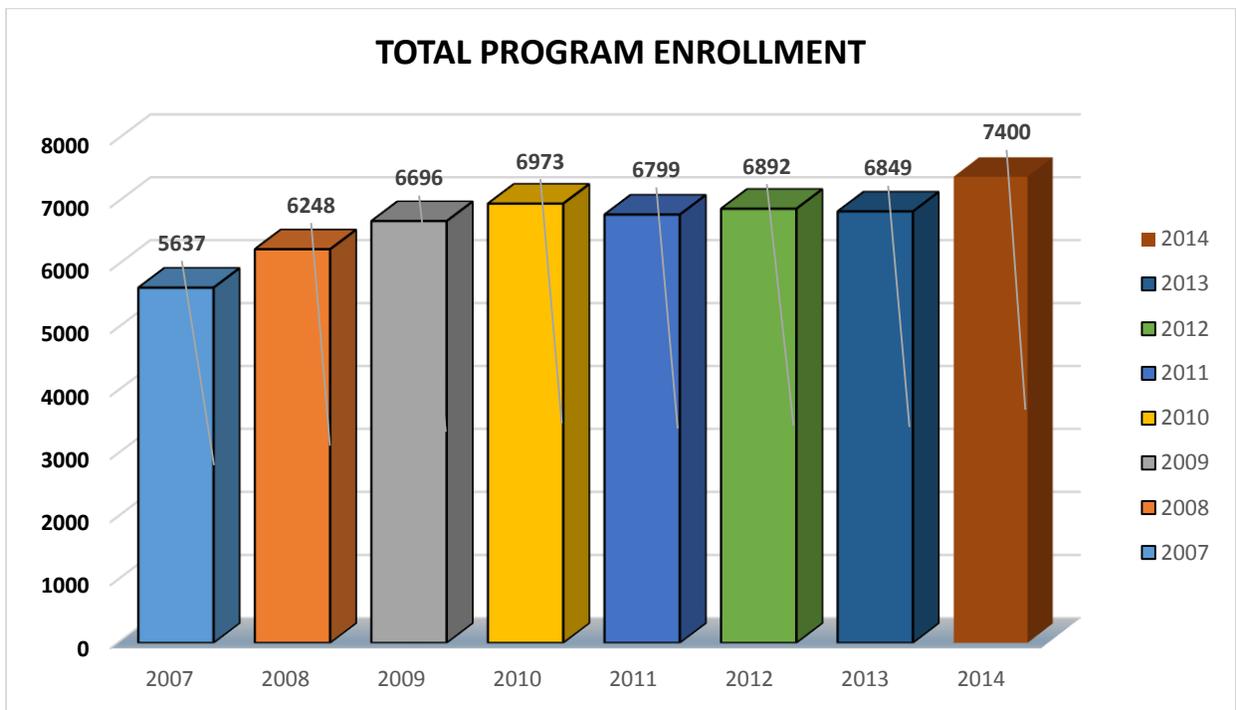
- Practical Nurse (PN) data only applies to traditional PN programs, not RN programs with an optional PN certificate.
- The number of students “qualified but not admitted” to a program does not represent an unduplicated or accurate count of students awaiting admission to a nursing program.
- Number of unfilled placements should not be interpreted to mean that these placements are available to other qualified students.
- These data apply only to in-state schools that offer pre-licensure nursing programs.
- The Board does not have jurisdiction over RN-BSN programs therefore only those with approved pre-licensure programs are included in this report

DATA AND ANALYSIS

All data were entered into an Excel chart and graphic representations were made using PowerPoint and Microsoft Word. Please contact Pamela Randolph pgrandolph@azbn.gov or Lyn Ledbetter lldbetter@azbn.gov for the original data.

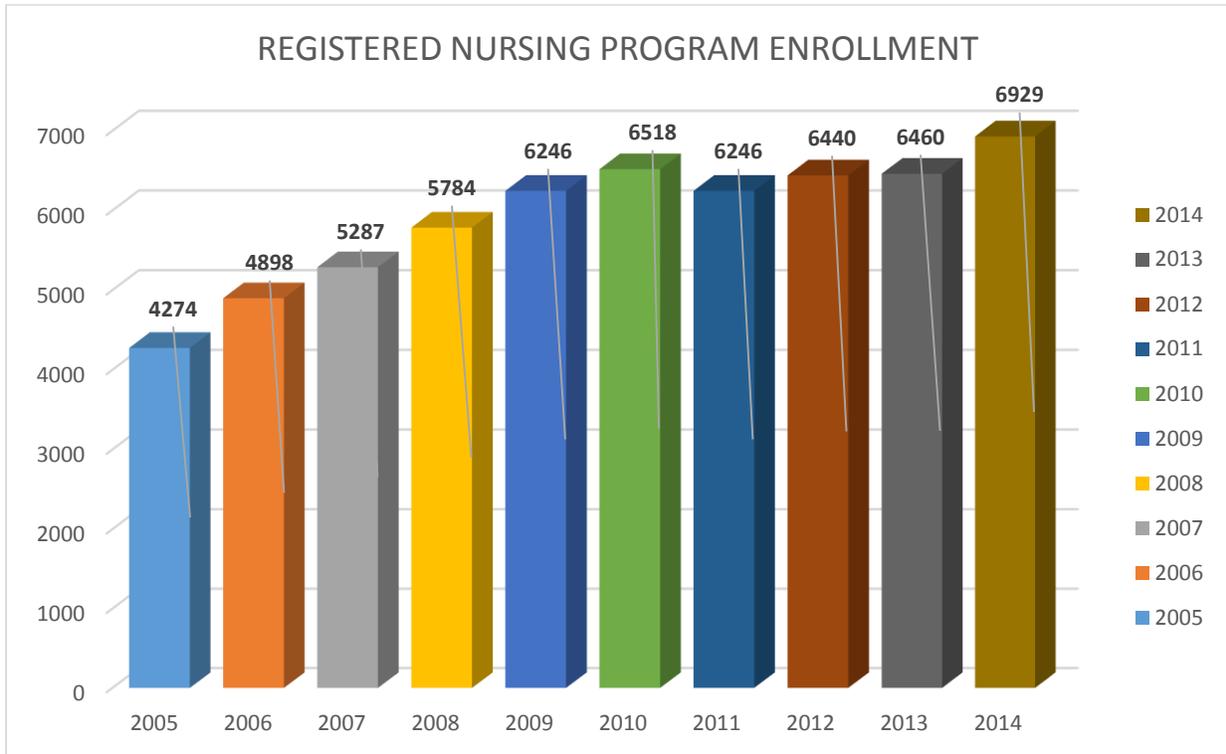
ENROLLMENT

The following figure displays enrollment in all nursing programs (RN/PN and public/private). Prior to 2011, total enrollment increased each year; enrollments stabilized in 2010 and have only varied slightly from year to year. However in 2014, total enrollments jumped by 8% to 7400, an all-time high.



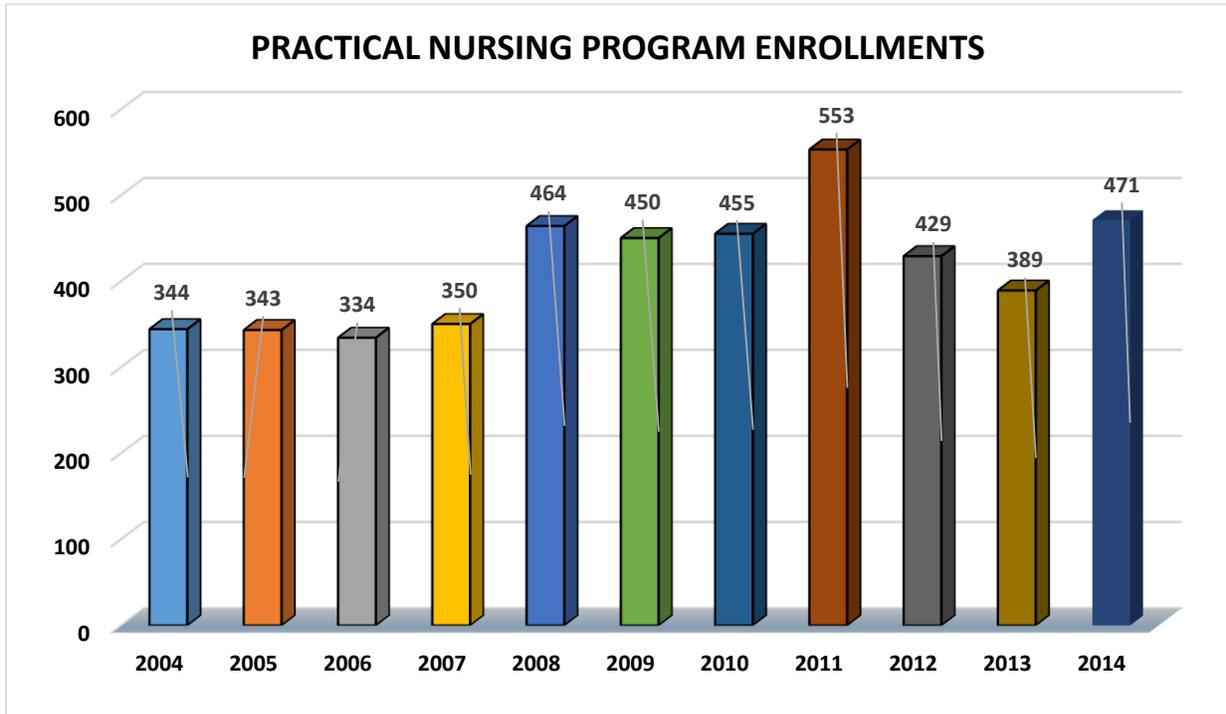
Registered Nurse Program Enrollment

In 2014 RN program enrollment increased from 6440 to 6929 (7.6%).



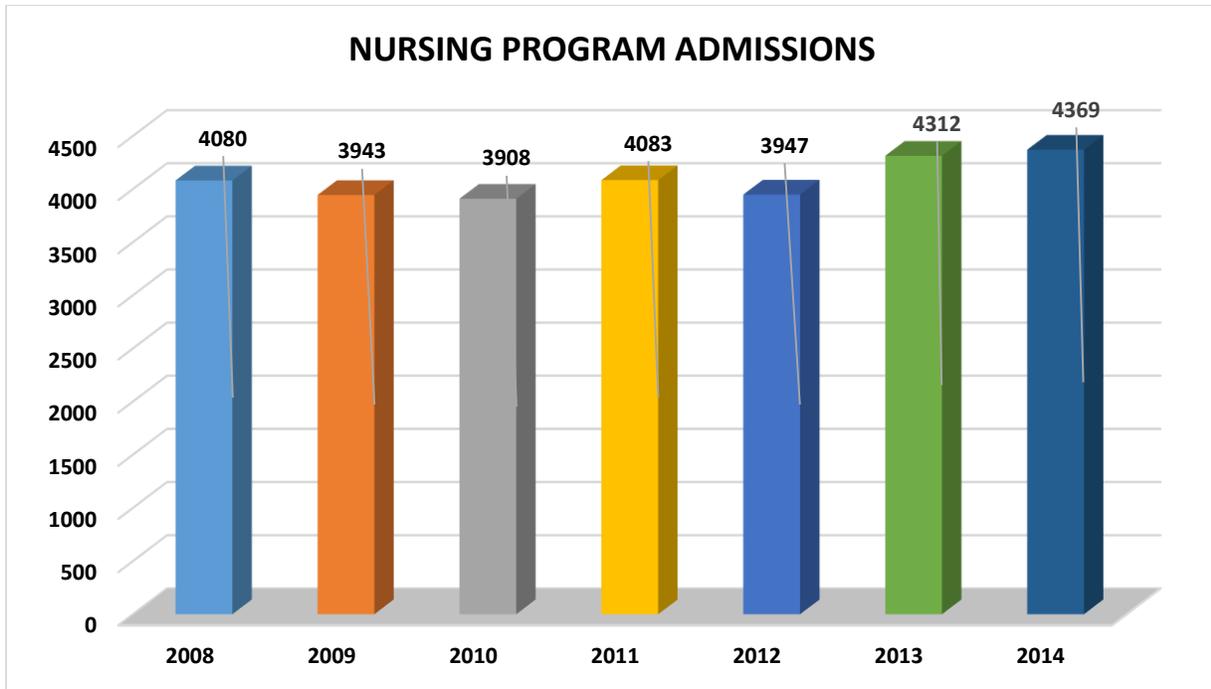
Practical Nursing Program Enrollments

Practical nursing (PN) enrollments increased from 389 in 2013 to 471 in 2014 (21% increase). There appears to be more demand for LPNs by health care industry. One LPN program director informed Board staff that students had job offers before graduation. Despite this, health care facilities are refusing to offer clinical placements to PN students.



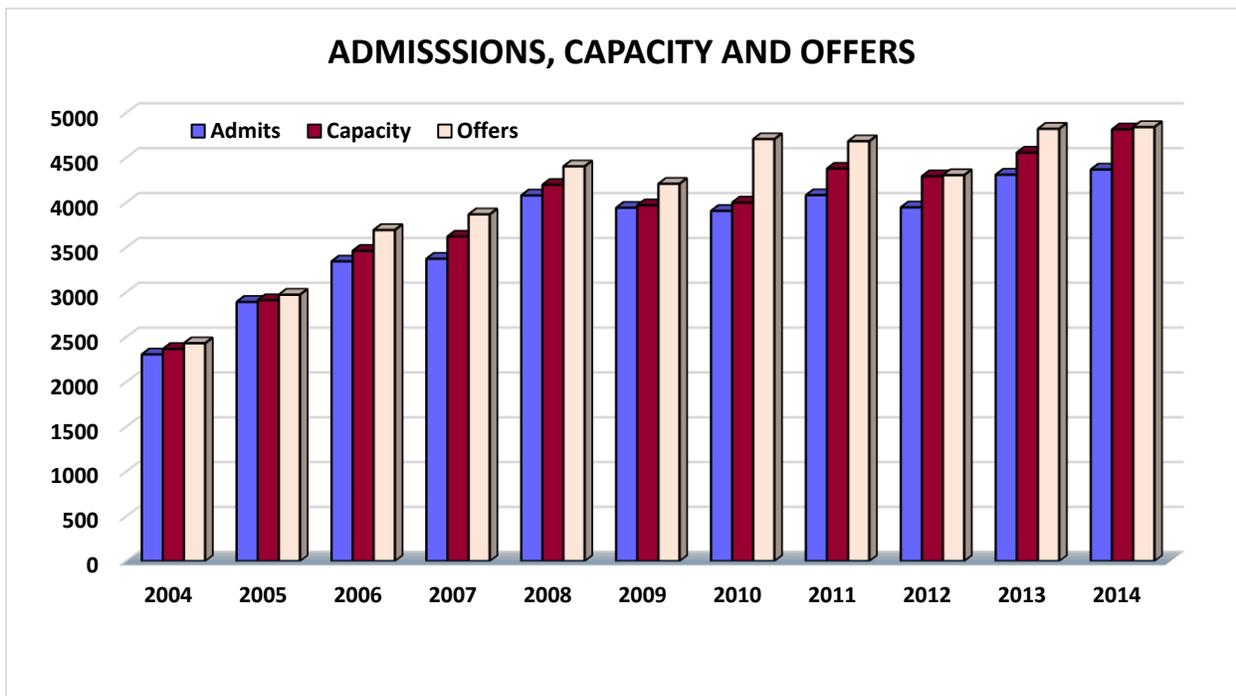
PROGRAM ADMISSIONS

In 2014 overall nursing program admissions increased slightly from 4312 in 2013 to 4369 in 2014 (1.3%)’



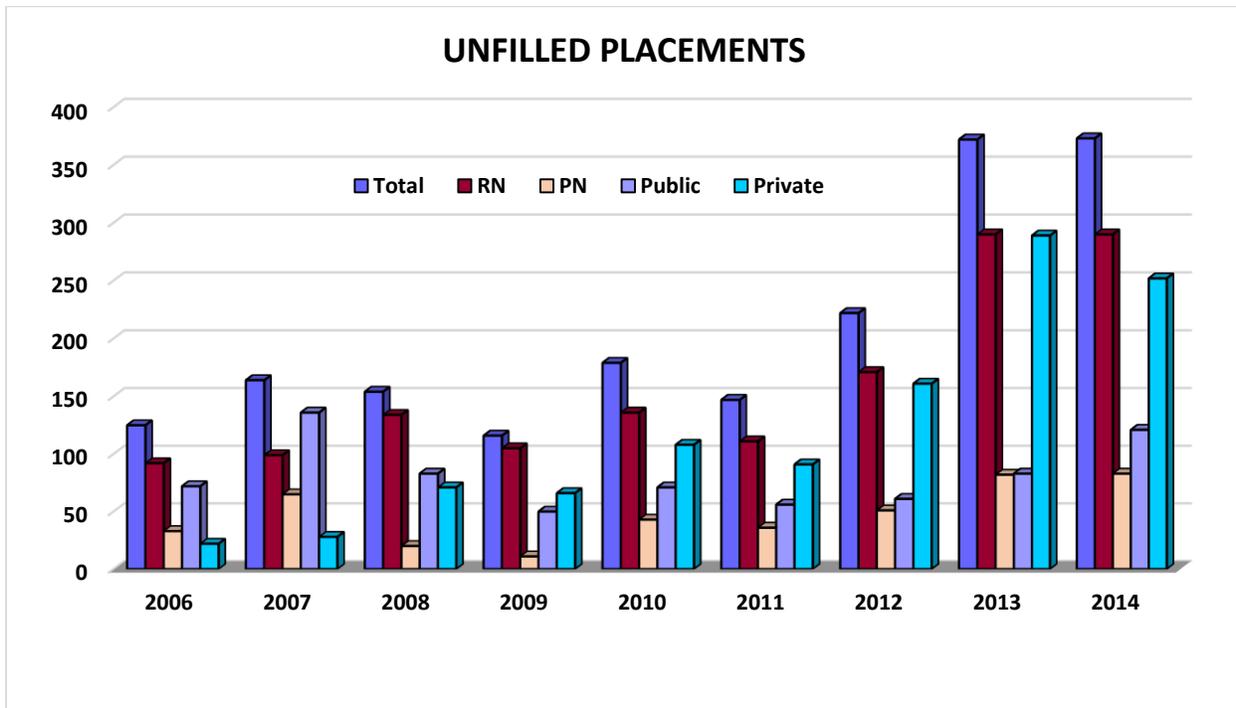
Total Nursing Program Admissions/Capacity/Offers

These admission data did not include students admitted to other than the first session of the program nursing program, such as LPNs enrolled in the 3rd semester of an RN program. For 2004 through 2014, programs were asked to provide data on how many students were offered placements. Placements offered exceeded capacity in all years indicating that programs are over-filling their placements in anticipation that not all students offered a placement will register and attend. In 2013 there were 4842 offers extended by programs having a total capacity of 4817 resulting in 4369 students actually attending the first session (which may be a pre-clinical course, depending on the program).



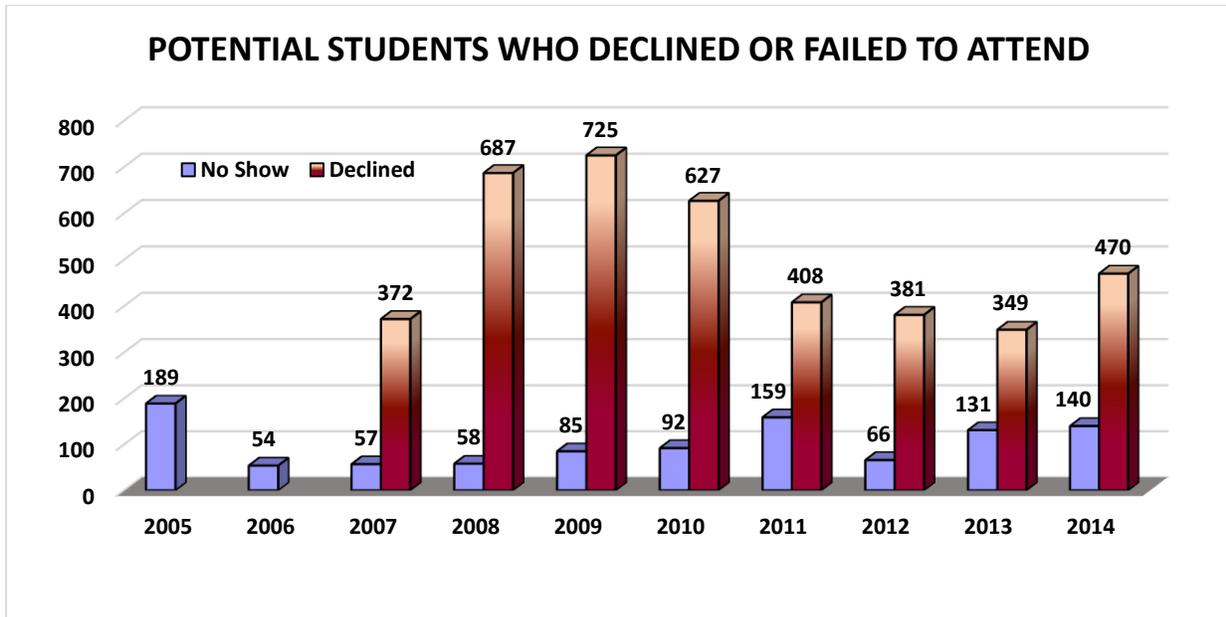
Total Unfilled Placements

There were 373 unfilled placements, nearly identical to the 372 unfilled placements in 2013. Open placements generally occur because persons who register do not attend (no shows) or programs do not attract sufficient qualified candidates to fill their projected enrollments. Of the unfilled placements, 290 were in RN programs and 83 in PN programs. Sixty-eight percent (252/68%) of the vacancies were in private programs (216 RN/36 PN). There were 121 open placements in public programs (74 RN/47 PN).



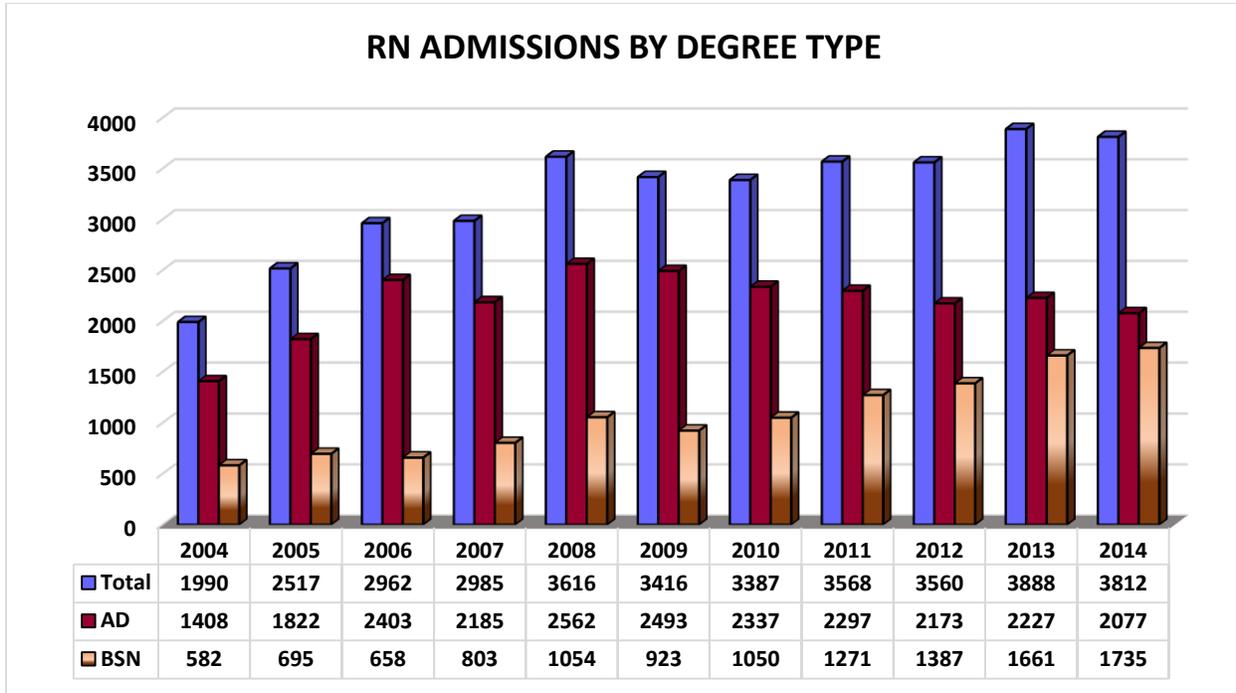
“No shows” and Persons who Declined a Placement

The number of students who registered for the first semester of a nursing course and did not attend (no show) was measured for the first time at 2005 at 189. This statistic has varied from year to year without apparent trending. In 2014, 140 students were “no shows” and 470 students declined a placement. Reasons for declining include: changing to another field, acceptance into another nursing program, inability to afford the program, scheduling conflicts, or insufficient notice to attend at the time of the offered placement. It can be noted that the economic downturn that occurred in 2008-2011 coincides with a high decline rate of prospective nursing students.



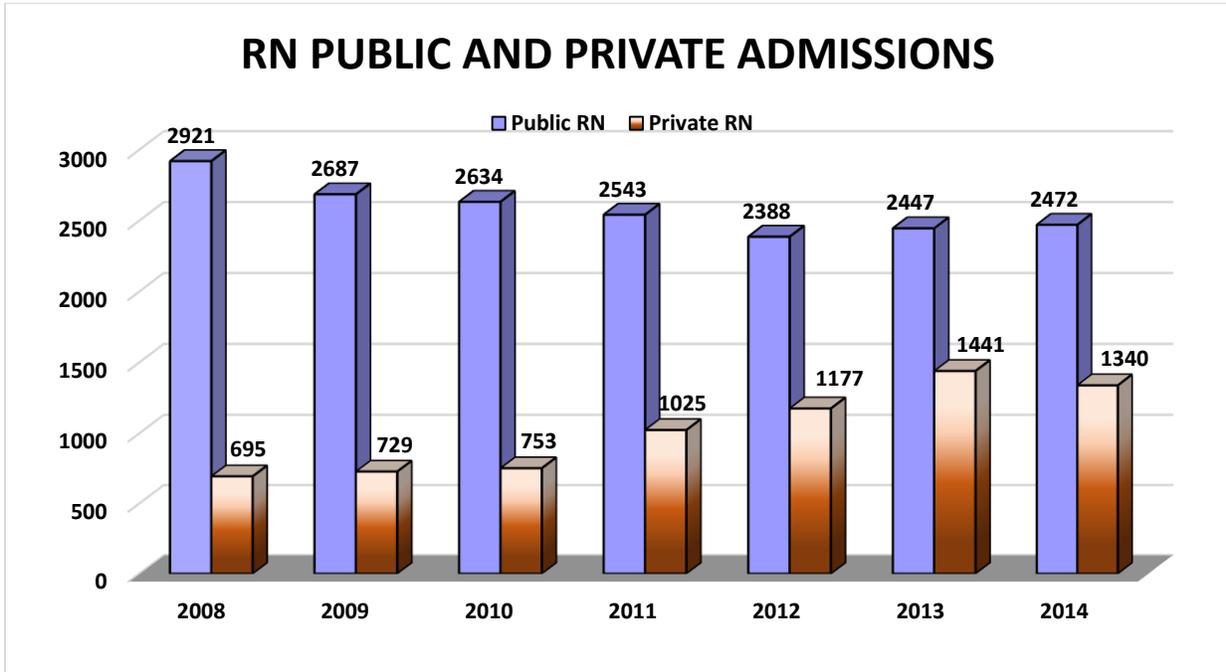
Registered Nursing Program Admissions

Registered nursing program admissions to the first semester of a nursing program (first nursing clinical course) were totaled and classified by type of program (Associate Degree/Baccalaureate). In 2014, admissions to the clinical course decreased from 3888 to 3812, a 2% decrease (76 students). Baccalaureate (BSN) program admissions increased 4.5% from 1661 to 1735 (74 students). Associate degree program admissions decreased 6.7% from 2227 to 2077 (150 students). BSN admissions accounted for 45.5% of total admissions an increase from 2013 where BSN admissions were 43% of the total.



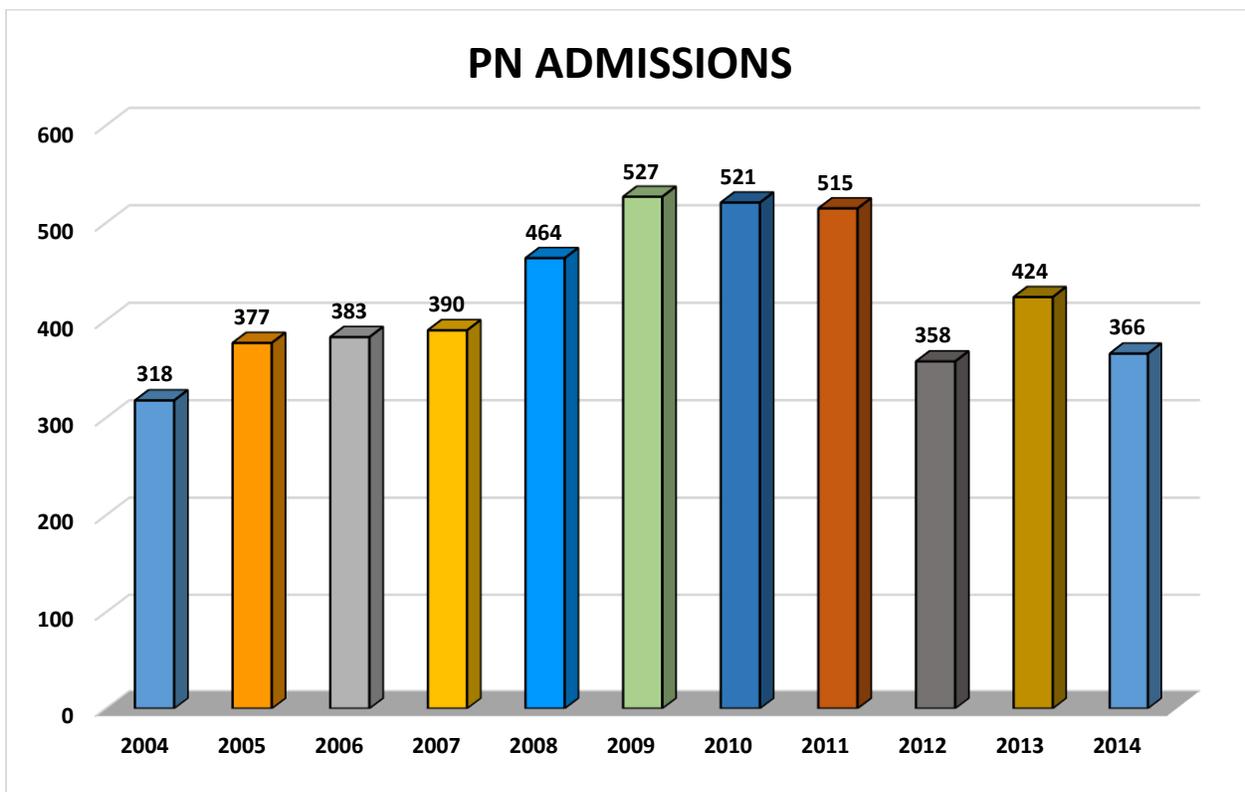
Public and Private RN Admissions

Public RN programs increased admissions from 2447 to 2472 (25 or 1%). Admissions to private RN programs decreased 7% from 1441 to 1340 (101 students). This result reverses a past trend where increases in program admissions were attributed to private programs.



Practical Nursing Program Admissions

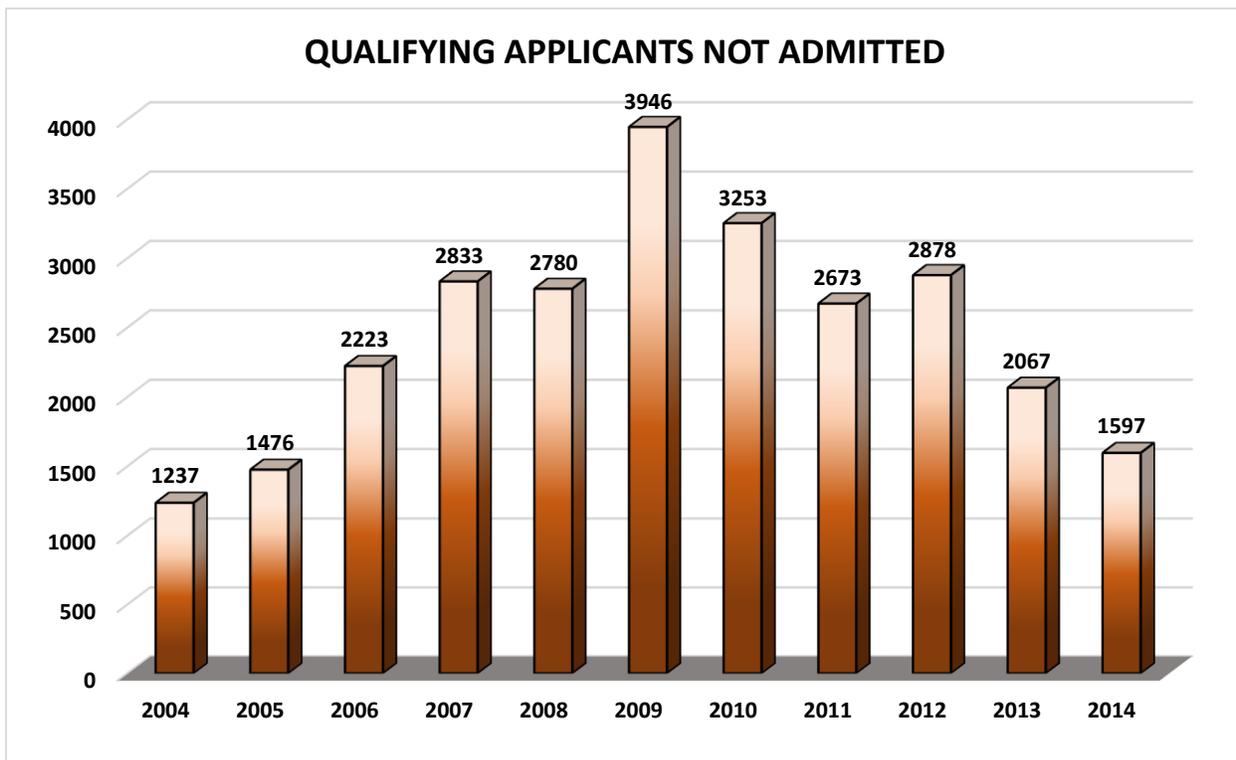
Practical nursing (PN) program admissions decreased 14% from 424 in 2013 to 366 in 2014 (58 students). According to program directors, there is strong demand for LPN graduates, however programs are constrained by lack of suitable clinical sites as more agencies are prohibiting LPN students from engaging in clinical experiences. Consumer demand for LPN education is weak, with only one program, GateWay Fast Track, reporting more than three qualified students who were not admitted (171 students not admitted).



Qualified Applicants Denied or Deferred

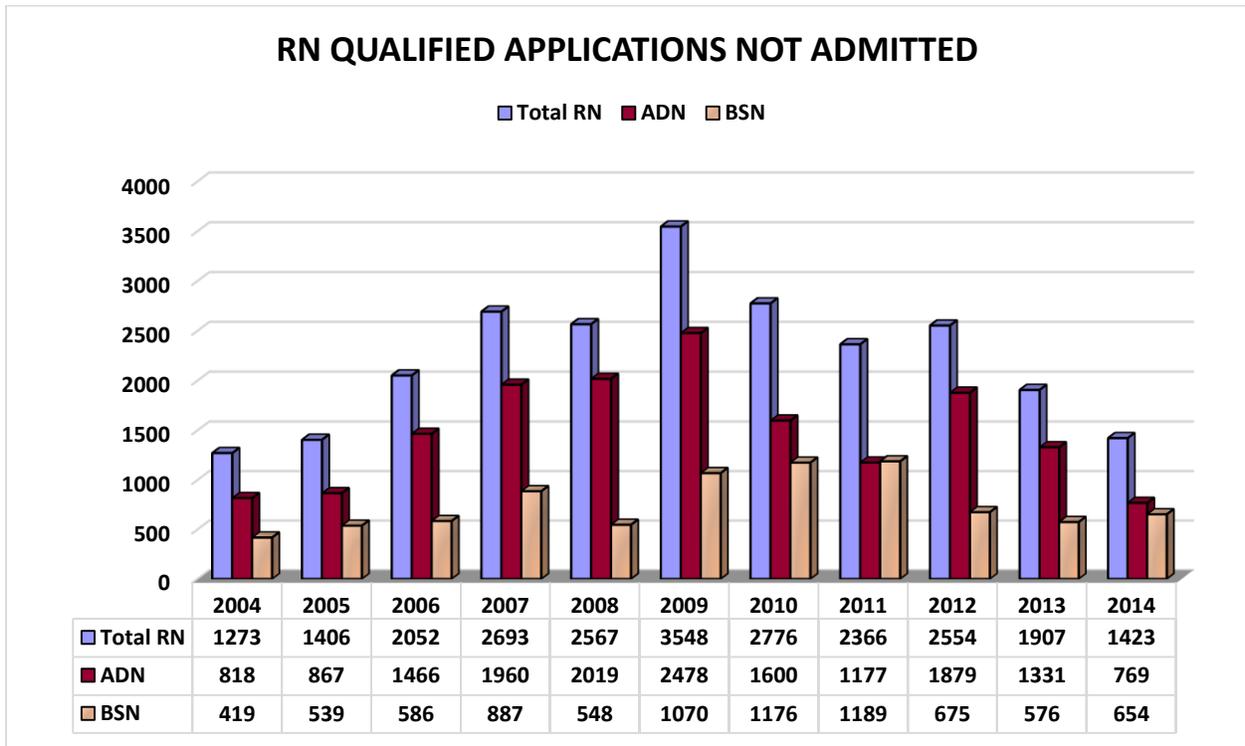
The number of students admitted was compared with the number of qualified applications that nursing programs denied or deferred for admission in a later semester. In 2014 there were 1597 nursing program applications that were not accepted or deferred due to insufficient openings in the program as opposed to 2067 in 2013. This represents another substantial one year decrease of 23% (470 students). A 28% decrease was seen in 2013. Programs are increasingly changing admission policies to decrease the wait time and eliminate the “wait list”. Innovations include merit based admissions and better tracking of wait-listed candidates. As in previous years, the majority of these applications were to RN programs (89%).

Due to differing admission standards, a student may qualify for admission in one program and not qualify for admission in another program. Many students also apply to multiple programs simultaneously. Taking into consideration the above factors, the number of qualified applications reported as denied/deferred is most certainly only an estimate of the number of actual students who were denied/deferred.

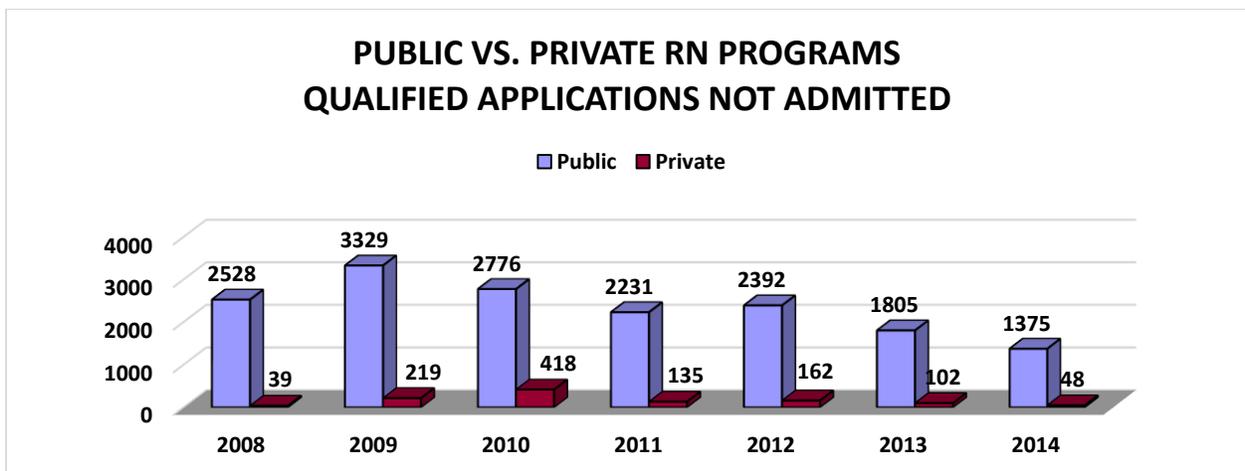


RN Programs

In 2014 there were 1423 qualified RN program applicants who were denied or deferred admission, a 25% decrease from the 1907 reported in 2013. Those programs posting high numbers of denied/deferred applicants were: University of Arizona (446), MaricopaNursing at Mesa Community College (159) and MaricopaNursing at Glendale Community College (139). In 2014 the proportion of ADN to BSN students denied admission was nearly equal with ADN accounting for 54% and BSN accounting for 46%.

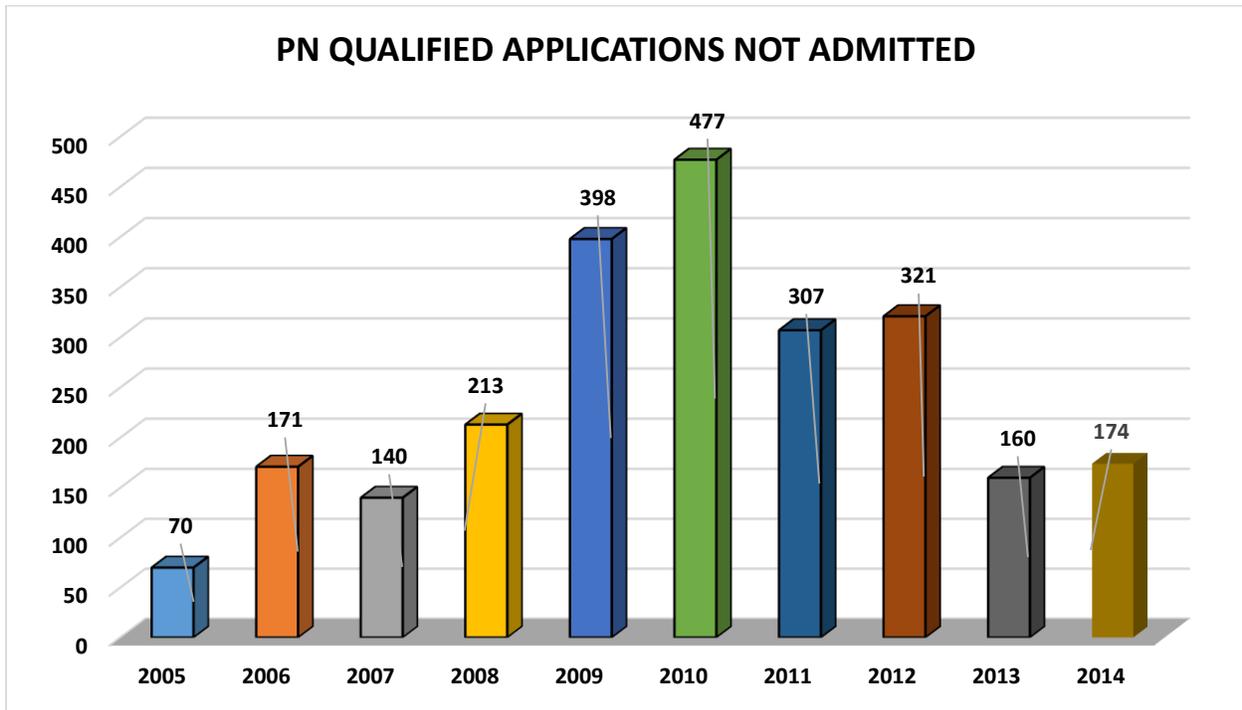


In 2014 as in previous years the greatest number of non-admitted qualified students applied to public RN programs 1423/1597 at 89%. Only three private program reported denying qualified students: Grand Canyon University (31), Chamberlain College (10) and Pima Medical Institute-Mesa Campus (7).



PN Programs

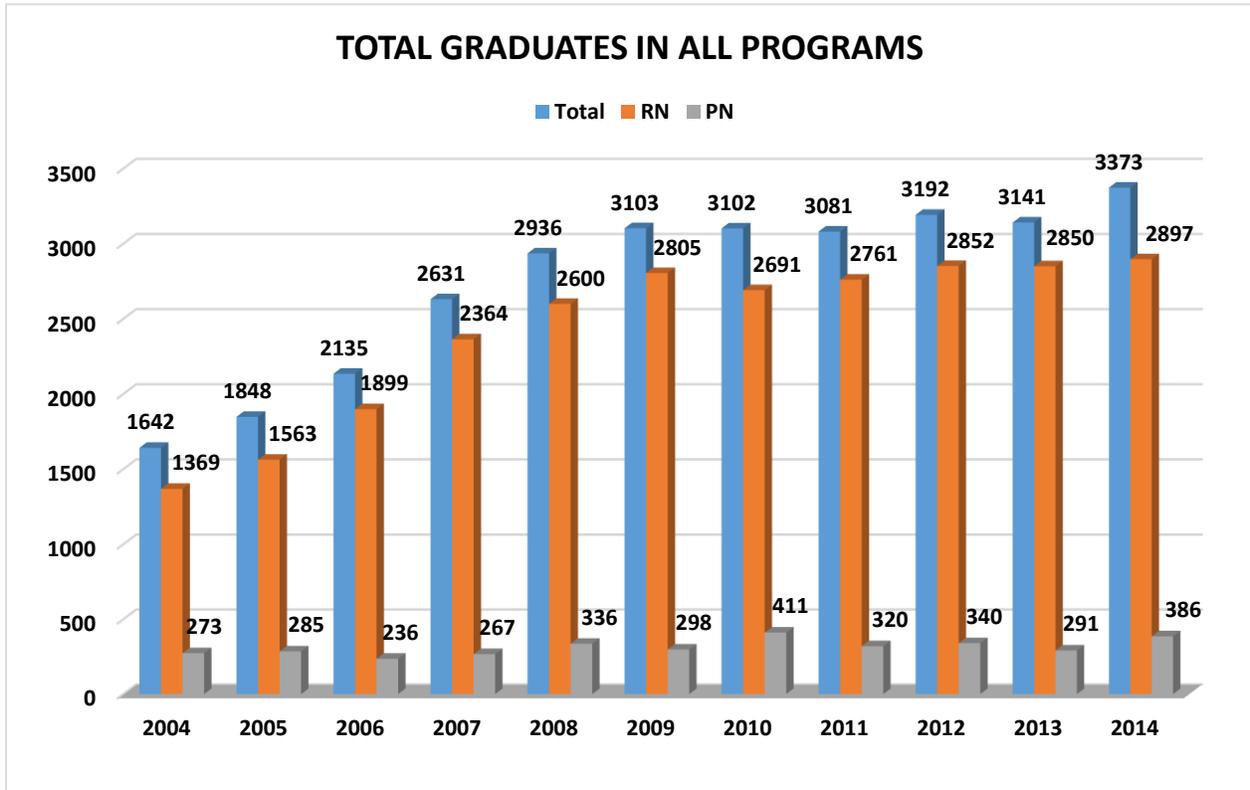
As stated before in this paper, there were 174 qualified applicants who were denied/deferred admission to a practical nursing program in 2014, a 9% increase from the 160 applicants not admitted in 2012. Nearly all (171/174) were applications to GateWay Community College Fast-track Program. This program is unique in that it follows the Maricopa Community College tuition schedule and readily articulates into the GateWay Community College RN nursing program. The only other program to report denied qualified candidates was Mohave Community College (3).



PROGRAM GRADUATES

Total Graduates

In 2014 total pre-licensure graduates increased 7% from 3141 to 3373 (232 graduates). There was a 4.7% (137 graduates) increase in RN graduates (2850 vs 2987) and a 33% increase in PN graduates from 291 to 386.

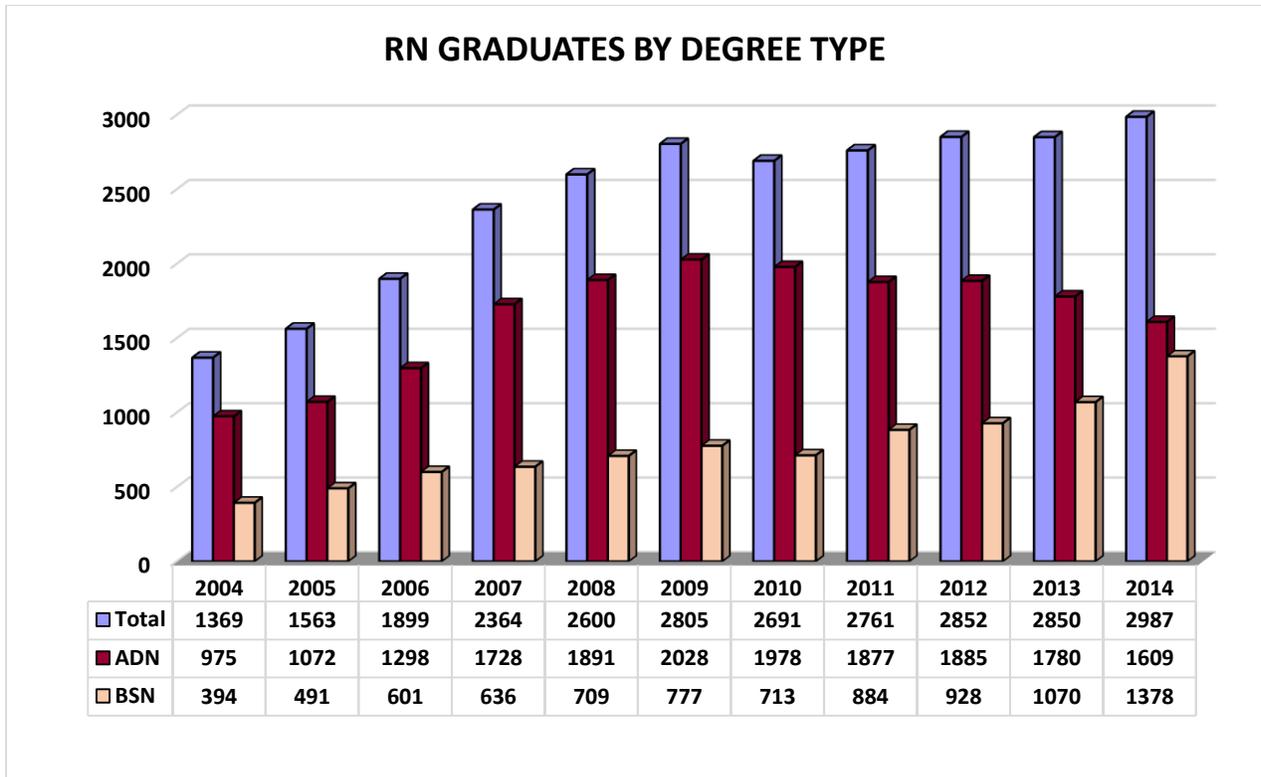


RN Graduates

There was a 7% increase in RN graduates with a 9.6% decrease in in associate degree graduates (171 graduates) and a moderate 28.8% increase in baccalaureate degree graduates (308 graduates).

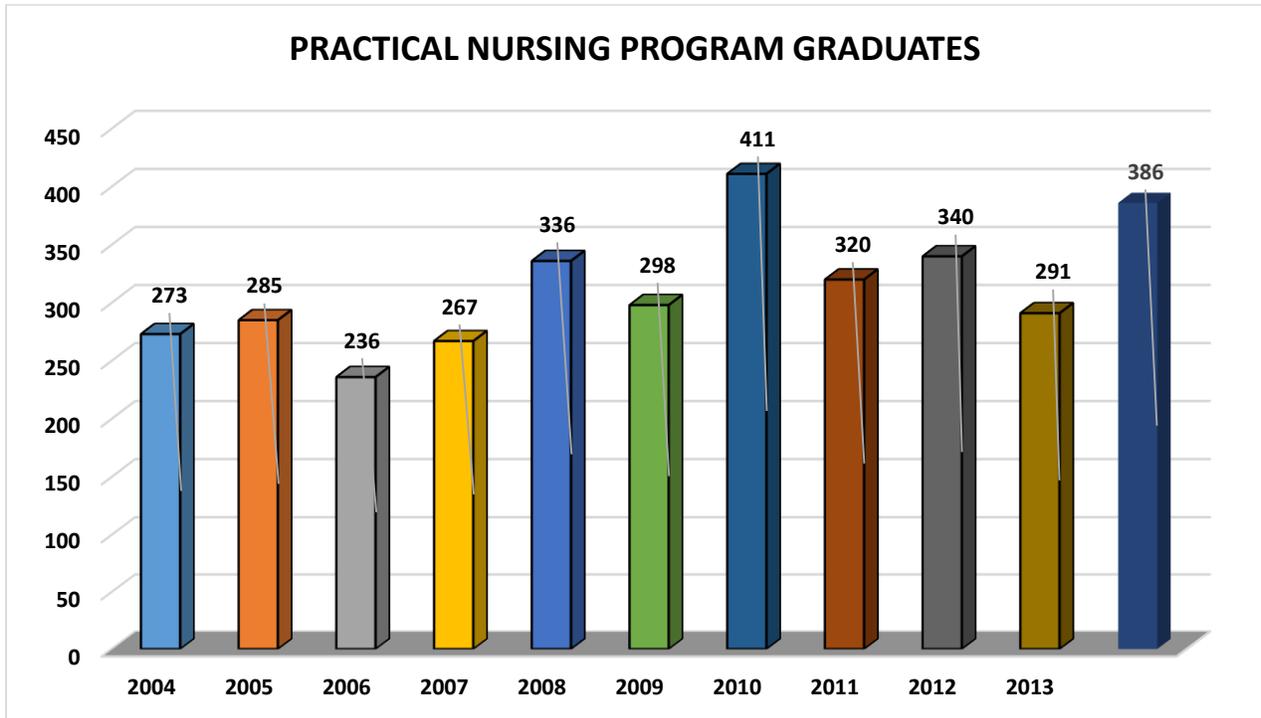
The percent of Arizona RN graduates earning a BSN in 2014 was 46.1% an increase from the 37.5% reported in 2013. Nationally, BSNs accounted for 43.3% (68191/157357) of RN first-time test takers (NCLEX Reports – 2014). This is the first time since collecting this data that Arizona has exceeded the national ratio of BSN vs AD/Diploma graduates. The IOM Report on *The Future of Nursing* (2011) calls for an increase in the percent of nurses with a baccalaureate degree to 80% by 2020. Aiken (2003) suggested that the minimal ratio of bachelor level nurses to associate level nurses should be 60/40. The National Advisory Council on Nurse Education and Practice (NACNEP), policy advisors to Congress and the US Secretary for Health and Human Services on nursing issues, recommend that two-thirds of the nursing workforce hold baccalaureate or higher degrees in nursing by 2010 (AACN, 2007). Benner, Stuphen, Leonard, and Day (2010) opined that overall nurses are undereducated. They called for master’s degree preparation within 10 years of initial licensure for those licensed after 2012. It is heartening to know that the Arizona BSN/AD ratios are increasing and are probably underestimated by this report as some AD graduates are also

earning a BSN concurrently in a concurrent enrollment program (CEP). In 2013 approximately 54% of all RNs were educated at the Bachelor’s level or higher, not necessarily in nursing (Data from AZBN licensing database, June 7, 2013—N=70,926). In 2015, 59% of all active RNs in Arizona hold a bachelor’s degree or higher. In 2013, 46% percent of all RNs in the database reported the highest degree being associate or diploma; in 2015, 40% of RNs in the database reported their highest degree diploma or associate degree. However approximately 10% of nurses reported holding bachelor’s degrees in another field (not nursing), therefore approximately 50% of RNs in Arizona have bachelor’s or higher in nursing degrees, an increase from 2011 (37-41%) and 2013 (45%).



PN Graduates

Practical nursing program graduates increased 33% from 291 in 2013 to 386.

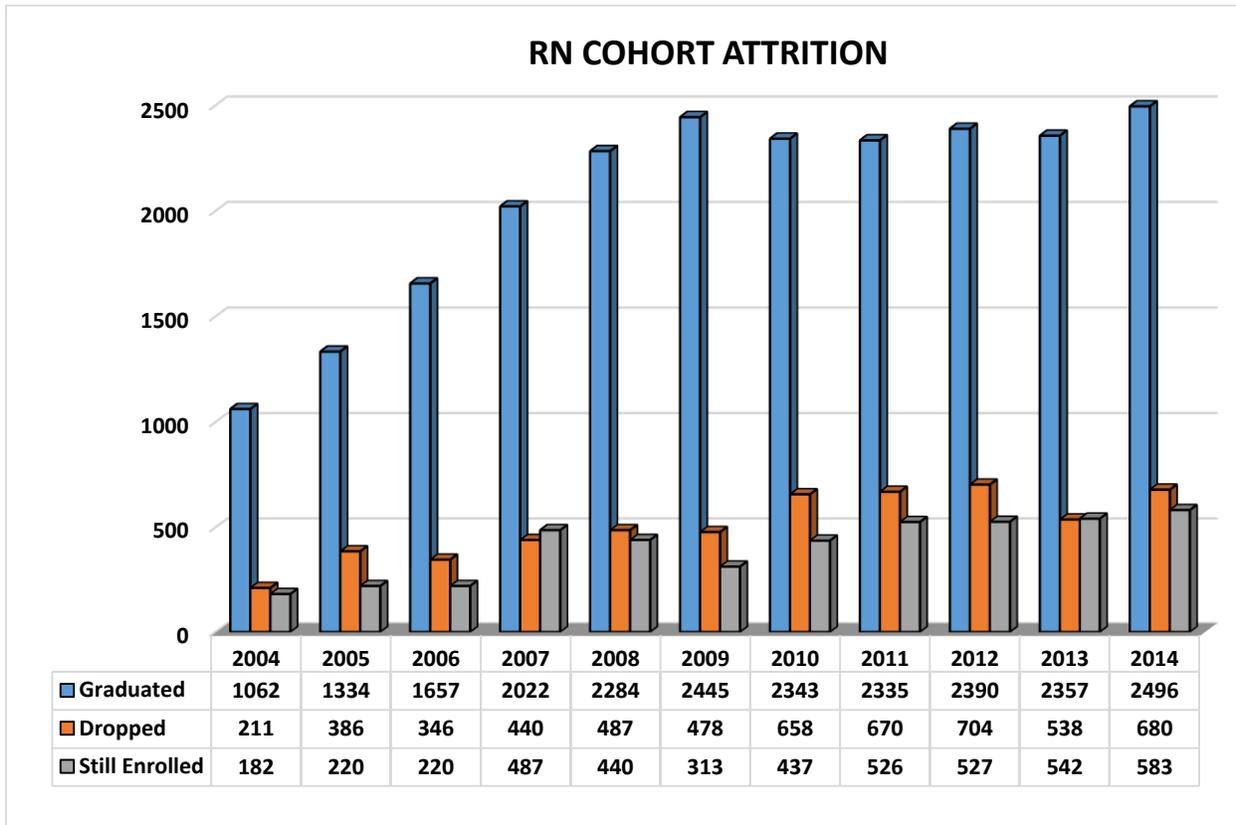


ON-TIME GRADUATION

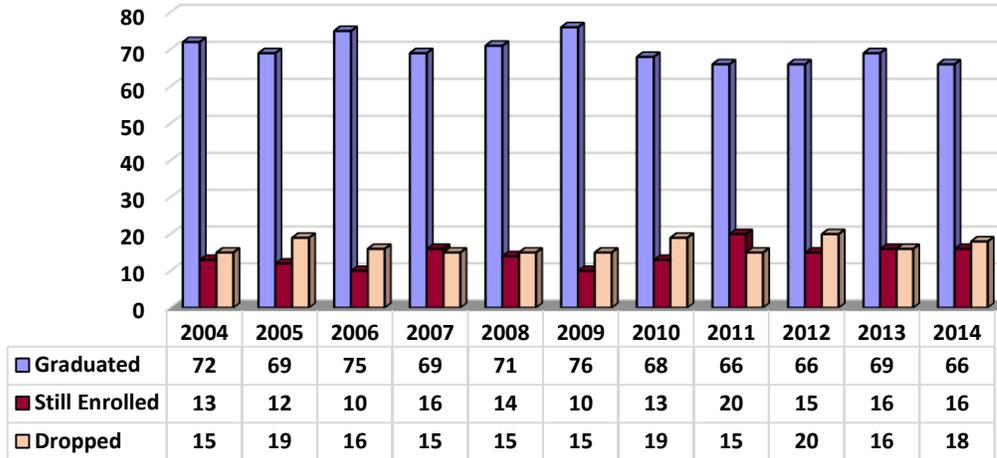
On-time graduation (OTG) is computed by comparing cohort admission to the first clinical nursing courses with cohort graduation according to the program of study. (Divide the on-time graduates by the number of students admitted to their first clinical course). For 2014, 2817 students graduated on-time among a total of 4232 students admitted to the clinical portion of the program, giving an overall OTG for all types of programs of 66.6%. Of those that did not graduate, slightly less than half, 46%, (673/1415) are persisting in the program, with the other 54% dropping the program. On-time graduations ranged from a high of 100% to a low of 7%. The minimum Board standard for OTG is 45%.

RN On-Time Graduation

RN OTG means have fluctuated between 76% and 65% in the past several years. In 2014, of a total of 3756 students admitted, 2496 (66%) graduated on time, 583 are still enrolled and 680 dropped the program, indicating that approximately half of those that do not graduate on time, persist in the program.

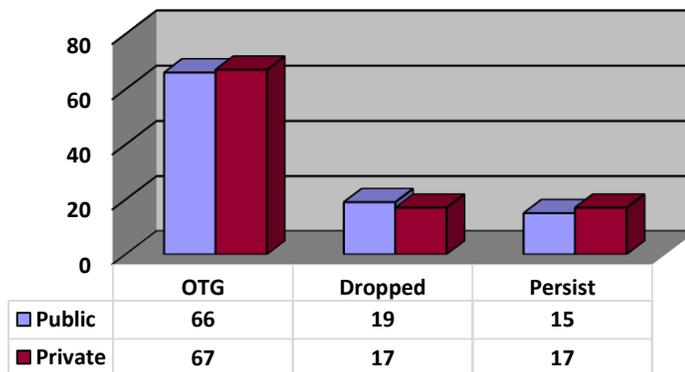


**RN COHORT ATTRITION
PERCENT OF COHORT GRADUATED ON
TIME/LAGGED/DROPPED**



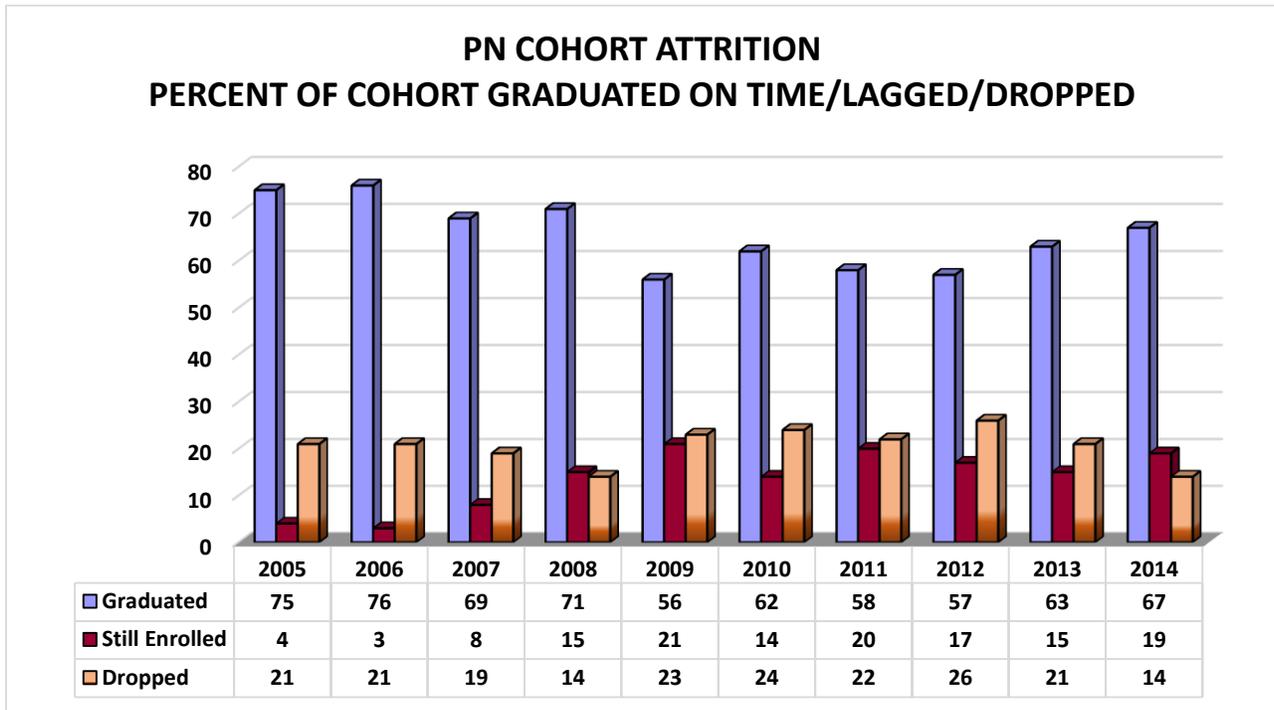
There was little difference in on-time graduation (OTG) rates between public and private programs, with both public programs being calculated at 66.3% and private programs at 66.7%. Persistence rates (percent of students who are still enrolled but are behind their admission cohort) appear equivalent or slightly better for private programs (17%) versus public programs (15%). Additionally, fewer of the students in private programs were lost to the program (17%) vs. public (19%).

**ATTRITION PRECENT PUBLIC AND PRIVATE RN PROGRAMS
2014**



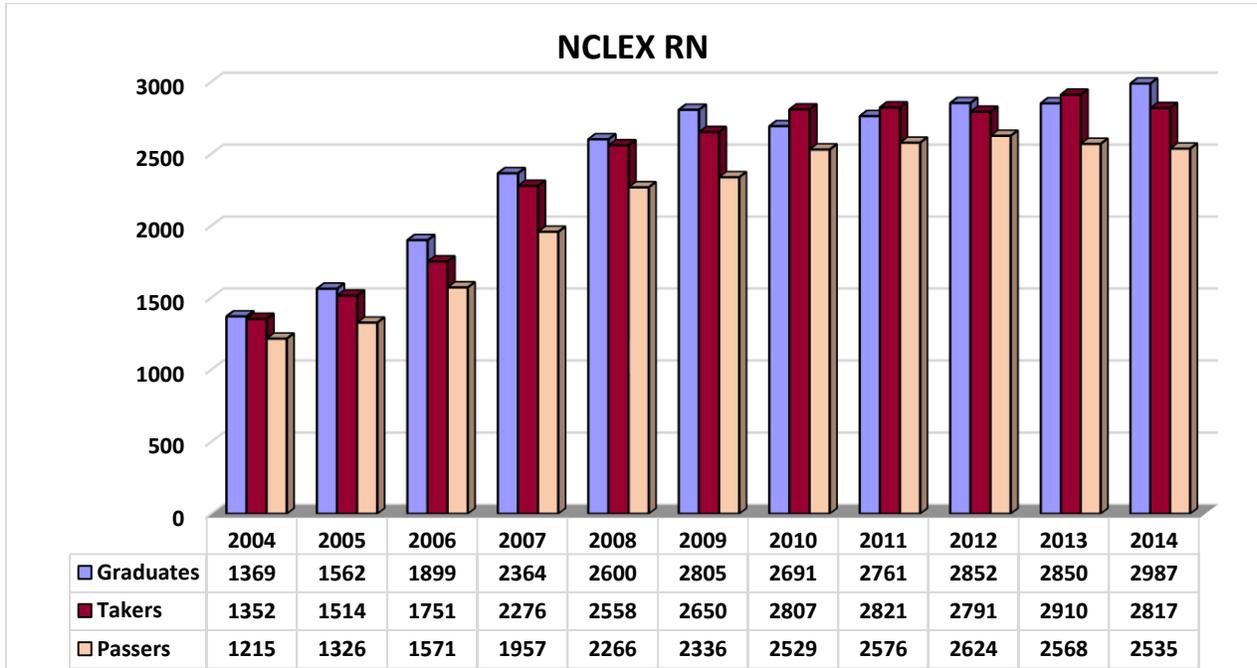
PN On-Time Graduation

In the 2014 graduating class for the PN programs (N=7), 67% percent completed on time; 19% are still enrolled and 14% dropped the program. This is an improvement from 2013 where 63% graduated on time. Percent on-time graduations in individual programs varied from a low of 61% to a high of 100%.



NCLEX ® RN EXAM

In comparing takers and passers of the National Council Licensure Examination for Registered Nurses (NCLEX-RN), there were fewer NCLEX takers in 2014 than in 2013, with a first time pass rate of 89.99%, which was the highest of any jurisdiction. The national first time pass rate in 2014 was 81.79%. In comparing numbers of persons taking the exam with numbers of graduates it should be remembered that the number of students graduating in any year will differ from the number of NCLEX takers as students graduating in December do not take NCLEX until the following year. There are very few graduates who do not take the NCLEX exam.



PROGRAM OUTCOME INDEX©

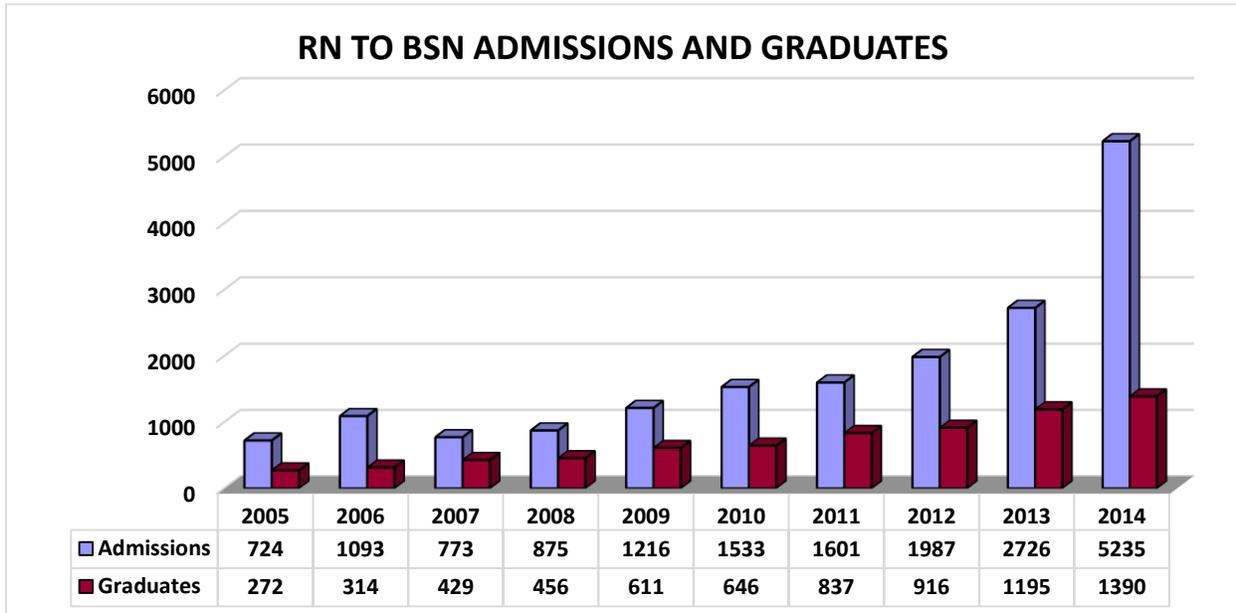
While first time NCLEX® pass rates are viewed by stakeholders as a measure of quality, if a program does not graduate the majority of admitted students in the prescribed time, the pass rate can become a measure of individual aptitude and self-teaching capacity, not overall program educational performance. Giddens (2009) points out, “*Is there anything really to celebrate with a nursing program with only a 50% persistence to graduation rate boasts of a 100% first time NCLEX-RN pass rate?*” The public and certifying agencies are interested in knowing attrition and persistence of students in programs. Starck, Love and McPherson (2008) call for measuring “on time” (e.g. according to the published curriculum plan) graduations as opposed to graduations within 150% of the allotted time. Conversely just taking “on time” graduate percentages without licensure exam results may reflect lack of rigor or grade inflation in programs. Combining and giving equal weight to these numbers provides a measure of both how the educational programs meet the learning needs of students and the academic rigor of the program. The Board is well aware that admission policies may also affect pass and completion rates as students who are not well grounded in essential reading and math skills will have difficulty attaining a deep understanding of nursing knowledge. The Arizona Administrative Code (R4-19-204), requires program faculty together with the nursing program administrator to set the admission and

progression standards of the program. Faculty and administrators should provide educational opportunities sufficient to ensure that all admitted students graduate on schedule, pass NCLEX on the first attempt, and practice safely.

Board staff calculated on-time graduation rates from each program's reported data and added that to the NCLEX first time 2014 pass rate obtained from NCLEX Reports to calculate a "Program Outcome Index©. The "Program Outcome Index"© is a measure of the program's ability to educate, and make eligible for licensure, admitted students in an optimal time-frame. The maximum index is 200 (100% NLCEX first-time pass rate and 100% on-time graduation). The mean index in 2014 was 152 with RN at 151 and LPN at 160. Index scores ranged from a high of 188 to a low of 50. The top three programs under these criterion were: Mohave Community University of Arizona (188), Pima Medical Institute-Mesa (186) and Estrella Mountain Southwest Skill Center LPN (185). See Appendix A for a breakdown by school. Further study is warranted to determine trends and factors that influence the outcome index of nursing programs.

RN TO BSN PROGRAMS

In 2014, Arizona RN to BSN programs admitted 1378 traditional RN-BSN students and 1238 concurrent enrollment program (CEP) students. Therefore a total of 5235 students were admitted to RN-BSN track programs, a 91% increase from 2013 (2726). Traditional students decreased but CEP students increased. Admissions are underestimated for the state as only pre-licensure programs with an RN to BSN track were surveyed.

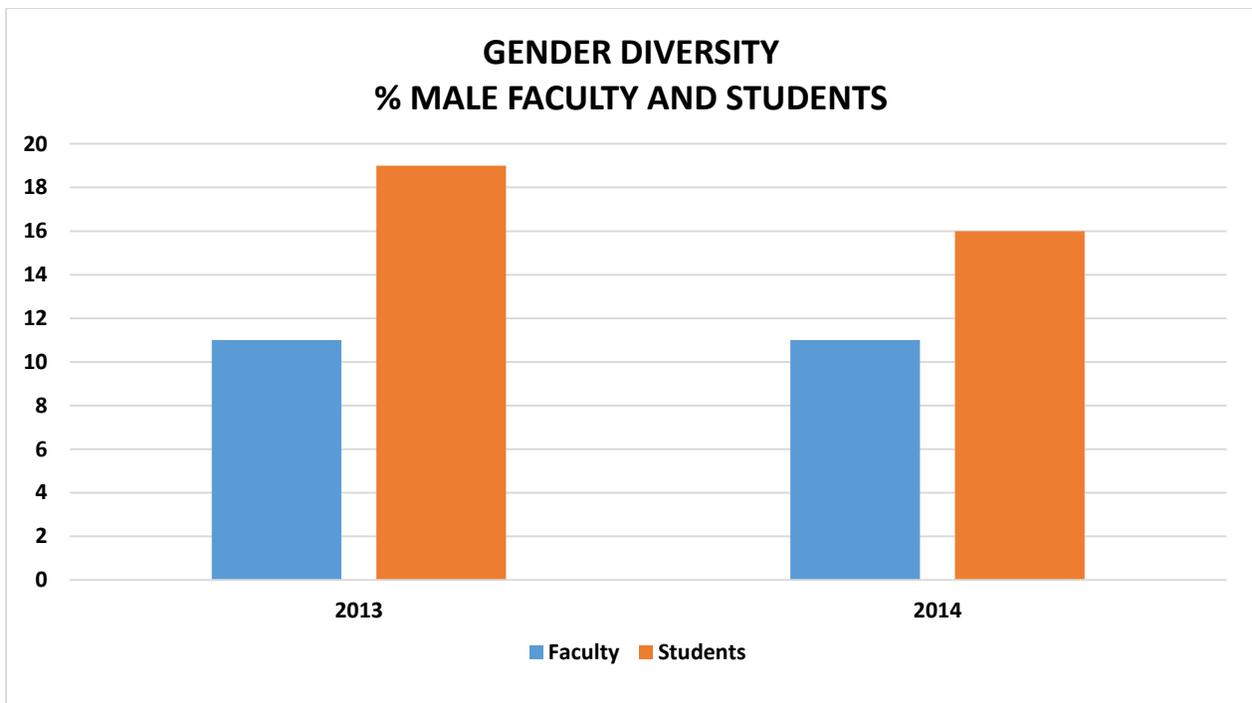


Graduates – RN to BSN

In 2013 there were 1390 graduates of RN-BSN programs, a 16% increase from 2013. The majority of students graduated from a traditional program (1240), with 150 being CEP graduates. This significant increase in RN to BSN enrollments and graduates appears to be a sustainable trend, especially in light of increasing numbers of AD nursing programs opening CEP cohorts.

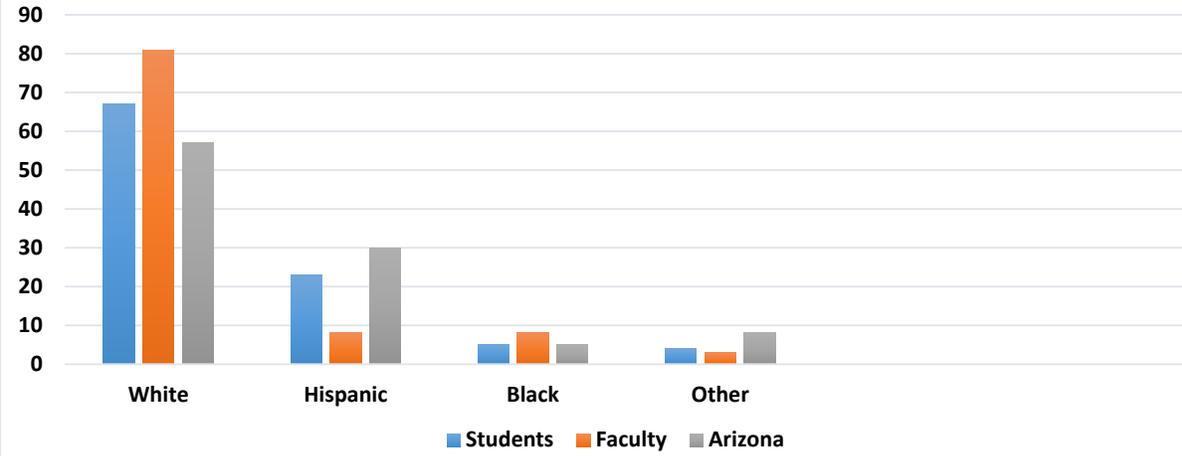
Student and Faculty Ethnicity

In 2013 the Board started asking programs to provide ethnicity data for both students and faculty. Programs were instructed to include all students and faculty, not just pre-licensure program participants. It is important to gather and report this data as a measure of diversity in nursing programs and as part of the national minimum data set. The first chart below compares student and faculty diversity in gender. The second chart compares student and faculty ethnicity with that in Arizona. For comparison purposes, raw numbers were converted to percentages. In 2014, gender data was provided for 7042 students and 2078 faculty. In terms of gender, females still make up the majority of both faculty and student populations and neither group is representative of the state as a whole, which according to the 2012 census report (US Census Bureau, 2012), is 50.3% female. Males are more prevalent in the student population as compared to the faculty population (11% vs 16%). The proportion of males in nursing programs decreased in 2014.



In 2014, race/ethnicity was provided for 6764 students and 1914 faculty. The category “other” includes the categories of Asian, American Indian/Alaska Native, Native Hawaii/other Pacific Islander, and “more than one”. In terms of race and ethnicity, students are more diverse than faculty. However, neither faculty nor students are as diverse as the Arizona general population. Faculty remain overwhelmingly white with “Black/African American” populations being slightly over-represented proportional to the population. Students are closer to the Arizona population demographics in Hispanic and Black/African American representation. “American Indian/Alaska Native” populations are underrepresented in both students and faculty.

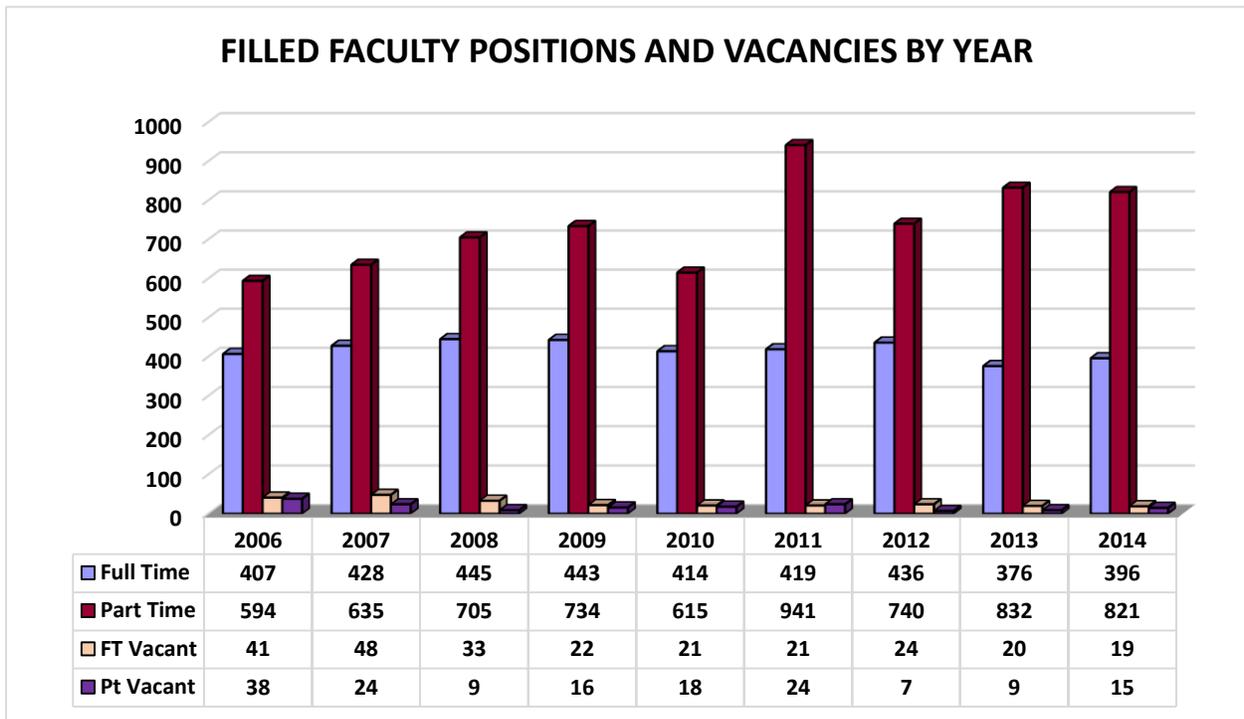
ETHNICITY NURSING PROGRAMS COMPARED TO ARIZONA CENSUS



NURSING PROGRAM FACULTY

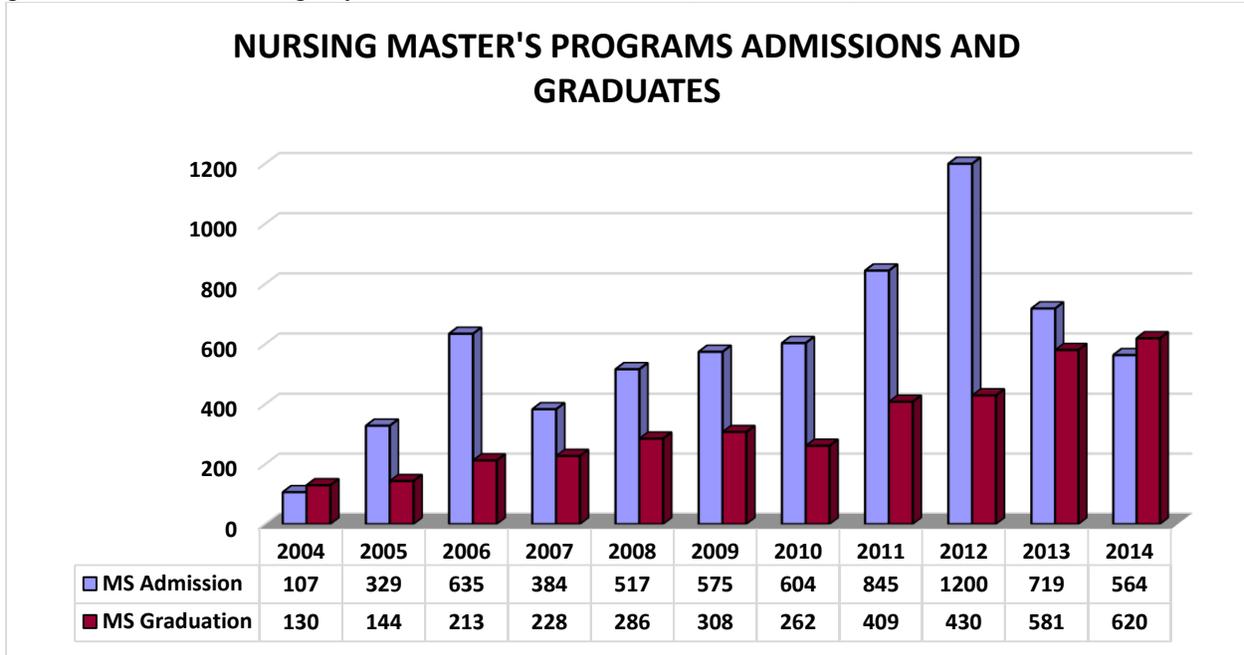
In 2014, there were 396 full-time faculty members in AZ nursing programs, 5% more than the 376 in 2013. There were 821 part-time faculty, nearly the same as the 832 part time faculty reported in 2013.

Full faculty vacancies remained essentially unchanged in 2014. There were 19 unfilled full-time positions in 2014 vs. 20 in 2013. Part time faculty vacancies increased from 9 in 2013 to 15 in 2014. Programs were asked to provide their average faculty-to-student ratio in didactic courses. Full-time (didactic) faculty to student ratios ranged from a high of 1:45 to a low of 1:3. The average ratio was 1:21, identical to the ratio in 2013.



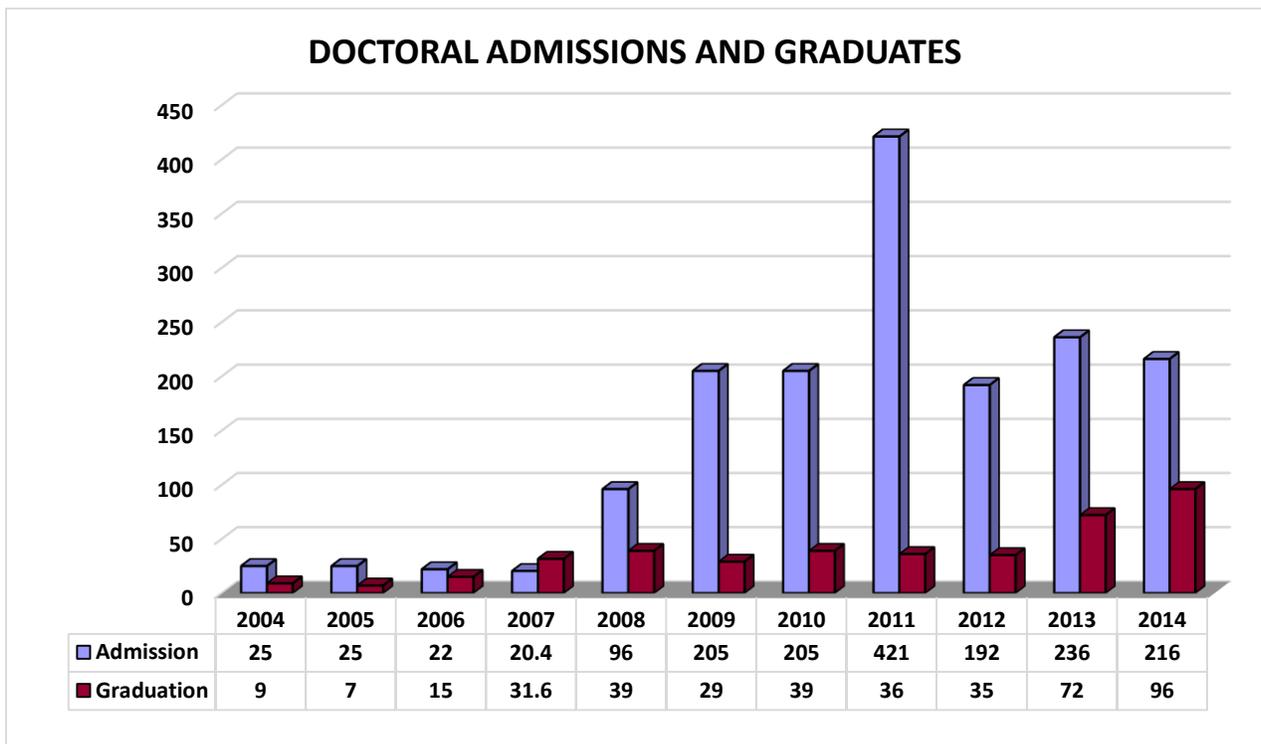
GRADUATE NURSING EDUCATION

Admissions to master’s degree nursing programs decreased in 2014 from 719 to 564, which represents a 22% decrease. This decline in Master’s program admissions is not unexpected, due to many schools offering APRN education exclusively at the doctoral level (DNP). Master degree graduates increased slightly in 2013 from 581 to 620 (7% increase).



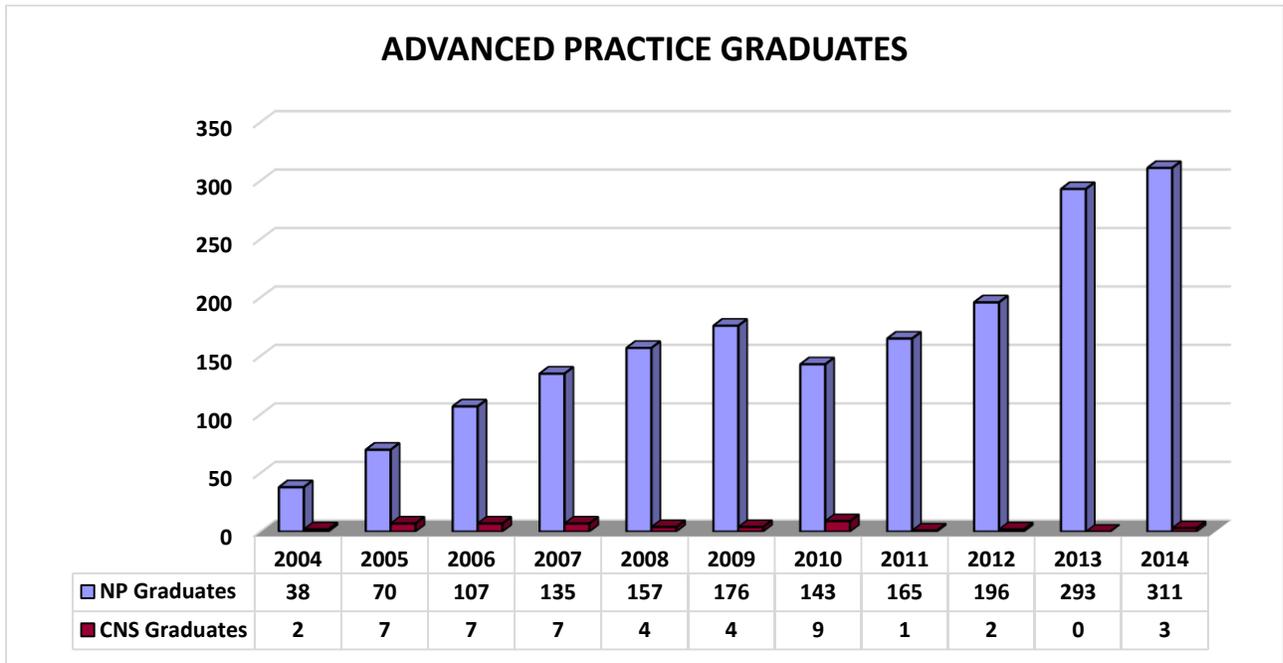
Doctoral Admissions and Graduates

Four AZ nursing programs admitted doctoral students in 2014: Arizona State University, University of Arizona, Northern Arizona University, and Grand Canyon University. Admissions to doctoral programs doubled in 2009 and again in 2011 although that was thought to be due to an error in reporting by a program with a large national presence. Doctoral admissions remain nearly the same as 2013. Doctoral graduates increased 33% from 72 in 2013 to 96 in 2014. Seventy-five percent (n=72) of doctoral degrees were doctoral in nursing practice (DNP) degrees. The IOM Future of Nursing Report (IOM, 2011) recommends doubling the number of doctoral degrees by 2020. As with master-level education, admissions attrition and graduation do not track with any degree of certainty.



Advanced Practice Graduates

There were three Clinical Nurse Specialist graduates in 2014. CNS graduates have numbered less than 10 each year while graduates of nurse practitioner programs more than quadrupled from 38 in 2004 to 176 in 2009. In 2014 there were slightly more NP graduates with 311 graduating from either a master's degree (220), post-master's certificate (32) or doctoral degree (59).



SUMMARY

The systematic and routine collection of nursing program data assists the Arizona State Board of Nursing, nursing programs, nurses, and the public in understanding nursing education enrollment trends. Such data informs public policy. Overall the 2014 data is encouraging as more nurses are investing in attaining bachelor and graduate degrees. A better educated nursing workforce is associated with increased patient safety (Aiken, . Another bright spot, is that the number of Hispanic and Black nursing students are increasingly reflective of the Arizona population. It is postulated that a diverse health care workforce will alleviate racial and ethnic health care disparities. Highlights of the report include.

- Total nursing program enrollments reached an all-time high of 7400
- Increases were in both RN and LPN programs
- New admissions remained stable
- There are unfilled placements in all types of programs with the majority in private programs
- The number of qualified students who were not admitted decreased by 23%; since 2009 this number has decreased 59% (3946 vs 1597); 97% of these students applied to public programs
- Private programs have not admitted to capacity
- RN graduates increased slightly; PN Graduates increased by 33%
- 46% of RN graduates received a BS, exceeding the national percentage of BSN to non BSN graduates for the first time (46% vs 38%).
- 66% of RN and 67% of PN nursing students graduated in the optimal time frame according to the published curriculum
- BSN completion admissions increased by 91%; graduates increased by 16%
- Gender of nursing students does not match the population of Arizona: there is overrepresentation of white and female students; 23% of nursing students are Hispanic which is closer to the Arizona population which is 30% Hispanic (increased from 19% in 2013)
- Master degree graduates increased by 50%; Doctoral graduates increased by 33%

This report provides additional evidence that Arizona is well positioned to meet shortages of nurses with basic RN preparation. With the decreasing number of programs and graduates, and a rapidly aging demographic profile, there may be shortages of LPNs in the future. The increasing number of nurses advancing their education in BSN and higher programs is encouraging in terms of sustainability of growth; these graduates will be educationally prepared to take faculty positions. According to other reports and anecdote, graduates finding employment in nursing easier than in previous years (Randolph, 2015).

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**APPENDIX A
ARIZONA NURSING
PROGRAM OUTCOME INDEX©
2014**

University of Arizona	188
Pima Medical Institute - Mesa Campus	186
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East Valley Institute of Technology	152
MaricopaNursing @ Phoenix College	151
Pima Community College - West Campus	151
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Everest College	148
MaricopaNursing @ Chandler-Gilbert CC	148
Central Arizona College	148
MaricopaNursing @ Scottsdale Community College	145
MaricopaNursing @ Paradise Valley CC	139
Arizona Western College	137
University of Phoenix	136
Brookline College - BSN	135
Fortis College	134
Cochise College	126
Eastern Arizona College	126
Carrington College	123
Brown Mackie College - Phoenix	114
Breckinridge School of Nursing/ITT Technical Institute	50
Arizona College	N/A
Mean	150.4

The Program Outcome Index© is the program's self-reported "on-time" graduation rate plus the first time NCLEX pass rate within the calendar year. A maximum score of 200 is possible.