

**A Profile of Virginia Nursing Education Programs**  
**Results of the 2010 Survey of Virginia Nursing Education Programs**



**July, 2011**

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# **Profile of Virginia Nursing Education Programs**

## **Results of the 2010 Survey of Virginia Nursing Education Programs**

This DHP Healthcare Workforce Data Center report is a compilation of results from the annual survey of Virginia's practical nursing and registered nurse education programs conducted in October 2010 and covering the 2009-10 academic years (August 1 – July 31). Information about program structures, faculty size and characteristics, and student enrollment and graduation patterns are highlighted. Throughout the document, figures may not sum due to rounding.

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## Practical Nursing Educational Programs

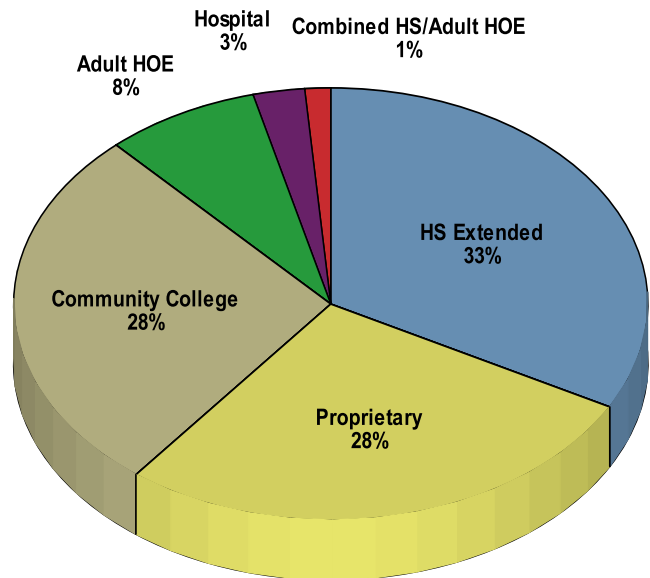
In the 2009-2010 academic year, there were 76 practical nurse programs approved in Virginia. Of these, Tazewell County Career and Technical Center did not provide any responses to the nurse education survey.

### PN PROGRAM STRUCTURE AND DURATION

The Virginia Board of Nursing approved programs of five types in the 2009-2010 academic year: High School Extended, Post-secondary Adult High School Extended, Community College, Hospital Based and Proprietary programs. Most programs are evenly divided among High School Extended, Community College and Proprietary programs. Adult HOEs account for only 8 percent of programs and hospital programs make up the remaining three percent. The Tazewell County Career and Technical Center, which did not provide any data, is a combined High School Extended/Adult HOE.

The duration of programs in months ranges from 12 months to 24 months. The average program duration is 16 months. All Hospital Based programs are 12 months in duration, resulting in the shortest average program duration by type. High School Extended programs tend to be the longest, lasting from 18 to 24 months.

Program Type



Programs		Program Length, Months					
Program Type	Count	Mean	Min	25 %ile	75 %ile	Max	Missing
HS Extended	25	19	18	18	21	24	0
Adult HOE	6	14	12	12	18	20	0
Community College	21	14	12	12	14	21	0
Hospital Based	2	12	12	12	12	12	0
Proprietary	21	14	12	12	15	18	0
HOE/ Adult HOE Combined	1	NA	NA	NA	NA	NA	1
<b>Total</b>	<b>76</b>	<b>16</b>	<b>12</b>	<b>12</b>	<b>18</b>	<b>24</b>	<b>1</b>

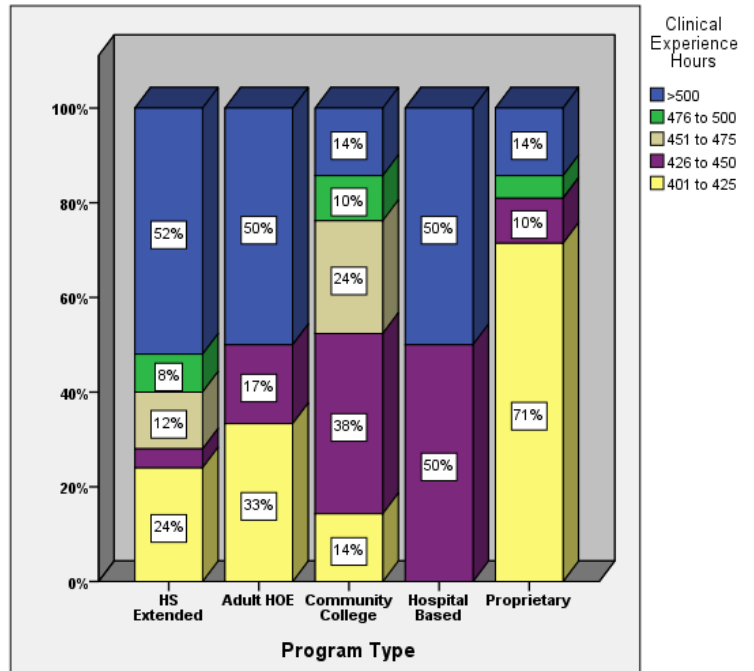
## PN PROGRAM CLINICAL HOURS

The amount of clinical experience required in PN programs varies. Almost one third of programs require over 500 Clinical Experience Hours while another third only requires between 401 and 425 hours. A greater majority of programs require over 300 hours of Direct Client Care. A few programs use over 100 hours of Clinical Simulation.

Clinical Hours		Program Type						
Type	Amount	HS Extended	Adult HOE	Community College	Hospital Based	Proprietary	Total	% of Total
Clinical Experience Hours	Less than 400	0	0	0	0	0	0	0%
	401 to 425	6	2	3	0	15	26	35%
	426 to 450	1	1	8	1	2	13	17%
	451 to 475	3	0	5	0	0	8	11%
	476 to 500	2	0	2	0	1	5	7%
	More than 500	13	3	3	1	3	23	31%
	<b>Total</b>		<b>25</b>	<b>6</b>	<b>21</b>	<b>2</b>	<b>21</b>	<b>75</b>
Direct Client Care Hours	Less than 300	0	0	0	0	0	0	0%
	301 to 325	0	0	0	0	1	1	1%
	326 to 350	1	0	0	0	0	1	1%
	351 to 375	0	0	0	0	1	1	1%
	376 to 400	2	3	4	0	2	11	15%
	More than 400	22	3	17	2	17	61	81%
	<b>Total</b>		<b>25</b>	<b>6</b>	<b>21</b>	<b>2</b>	<b>21</b>	<b>75</b>
Clinical Simulation Hours	Less than 25	17	3	20	1	14	55	73%
	26 to 50	3	1	0	0	5	9	12%
	51 to 75	3	0	0	1	1	5	7%
	76 to 100	1	1	1	0	0	3	4%
	101 to 125	1	0	0	0	1	2	3%
	126 to 150	0	1	0	0	0	1	1%
	151 to 175	0	0	0	0	0	0	0%
	176 to 200	0	0	0	0	0	0	0%
	More than 200	0	0	0	0	0	0	0%
	<b>Total</b>		<b>25</b>	<b>6</b>	<b>21</b>	<b>2</b>	<b>21</b>	<b>75</b>

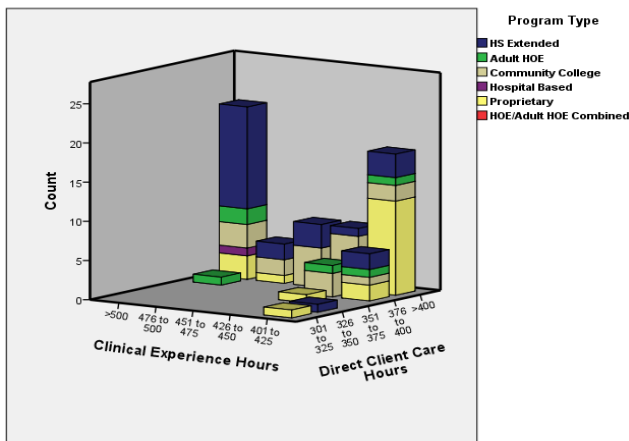
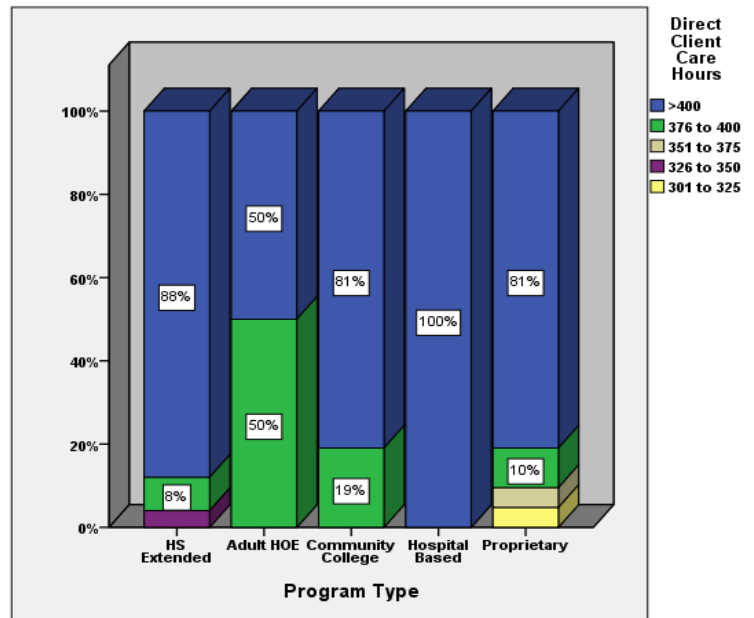
## Clinical Experience Hours

Clinical Experience Hours vary by program type. Proprietary schools tend to have lower clinical experience requirements while High School Extended programs tend to have higher requirements. However, requirements vary widely within all program types. Some Proprietary programs require more than 500 hours of clinical experience while some High School Extended programs require only 401 to 425 hours, the lowest total reported.



## Direct Client Care Hours

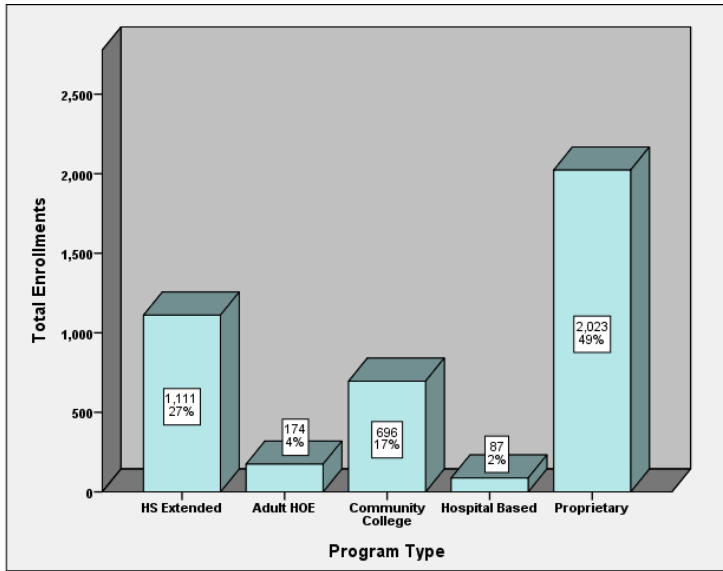
Programs may split Clinical Experience Hours among Direct Client Care and Clinical Simulation, with up to 20 percent of clinical experience hours being simulated. Eighty-one percent of programs offer over 400 hours of Direct Client Care hours. There is no statistically significant difference in direct client care hours by type of program; however, this may be due to the scale of the response categories.



## Clinical Experience by Program Type

Programs with smaller clinical experience requirements tend to focus on direct client care over clinical simulation. Only four programs require less than 375 hours of direct client care. Only two Proprietary schools and one High School Extended program require less than 425 hours of Clinical Experience *and* less than 375 hours of Direct Client Care.

## ENROLLMENT

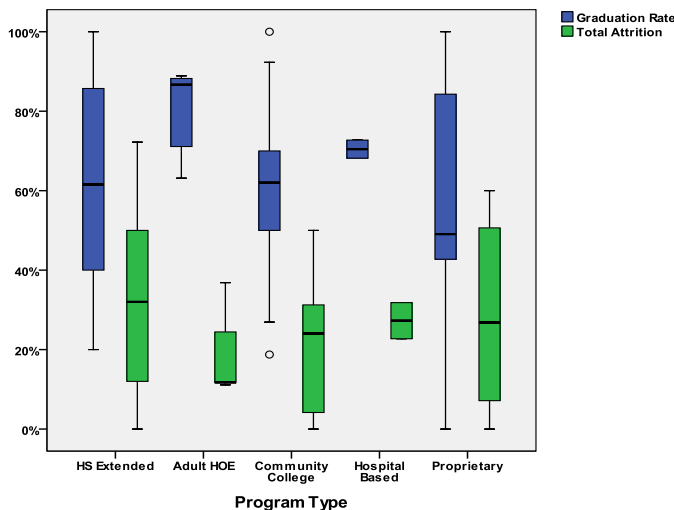


PN programs reported total enrollment of 4,091 students as of October 15, 2010. Of these, 1,002 (24.5 %) were Certified Nurse Aides and 333 (8.1%) were male. Almost half of all PN students are enrolled in Proprietary schools. Just over a quarter are enrolled in High School Extended programs, and seventeen percent are enrolled in Community College programs. Only four percent of PN students are enrolled in Adult HOE programs and only 2 percent in Hospital Based programs.

## Attrition

Only 1674 of the 3336 PN students, or 50 percent, scheduled to graduate in the 2009-2010 academic year actually did so. Of these, 1,214 permanently left their programs, for an overall attrition rate of 36 percent. Statistically, programs do not differ by on-time graduation rate or overall attrition rate. The major program types (HS Extended, Community College and Proprietary) exhibited wide ranges of on-time graduation and attrition rates. Adult HOE and Hospital Based programs reported the highest on-time graduation rates and the lowest attrition rates.

Statistic	Program Type					Total
	HS Ext.	Adult HOE	Comm College	Hosp Based	Pro-prietary	
# of students scheduled to graduate in 2009-2010 academic year	669	210	539	88	1830	3336
Those scheduled who graduated on time	358	171	296	63	786	1674
Overall on-time graduation rate	54%	81%	55%	72%	43%	50%
Students scheduled to graduate who left permanently	265	35	101	22	791	1214
Overall attrition rate	40%	17%	19%	25%	43%	36%



Due to the low number of these programs, however, statistical tests failed to identify a meaningful difference between these and other program types.

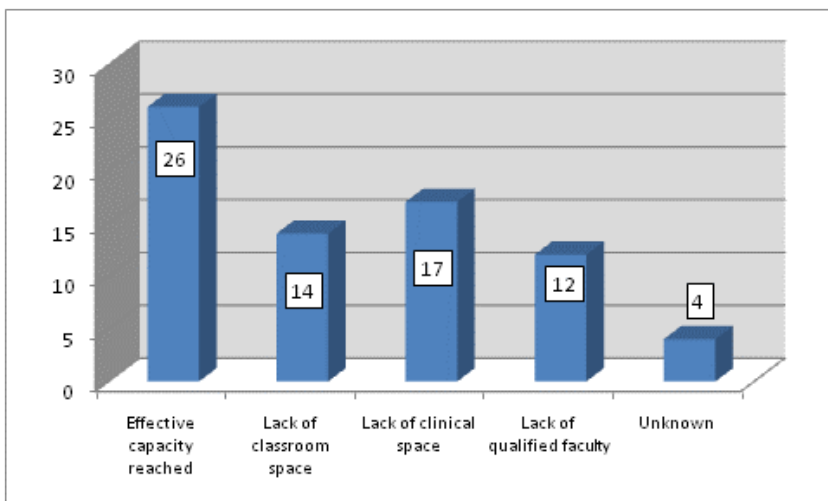
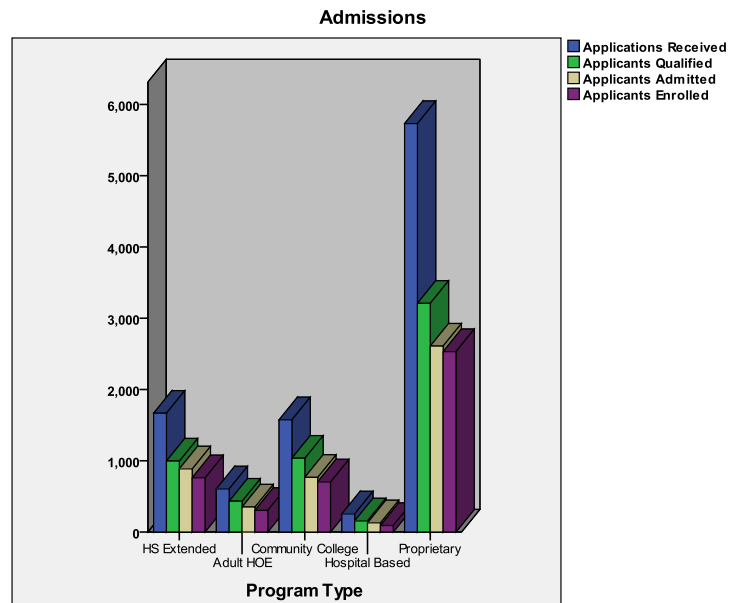


## ADMISSIONS

Program Type	Applications Received	Applicants Qualified	% Qualified	Applicants Admitted	% Qualified Admitted	Applicants Enrolled	% of Admitted Enrolled	% of Applicants Enrolled
<b>HS Extended</b>	1667	996	60%	886	89%	761	86%	46%
<b>Adult HOE</b>	605	433	72%	351	81%	303	86%	50%
<b>Community College</b>	1575	1036	66%	767	74%	703	92%	45%
<b>Hospital Based</b>	254	156	61%	129	83%	91	71%	36%
<b>Proprietary</b>	5731	3209	56%	2609	81%	2531	97%	44%
<b>Total</b>	<b>9832</b>	<b>5830</b>	<b>59%</b>	<b>4742</b>	<b>81%</b>	<b>4389</b>	<b>93%</b>	<b>45%</b>

Virginia's PN Programs received 9,832 applications. Candidates may send applications to multiple schools. Only 59 percent of applications were submitted by candidates qualified for the respective program. Overall, programs admitted 81 percent of qualified candidates, and 93 percent of admitted candidates enrolled. In the end 45 percent of applications resulted in an enrolled student. Admission rates varied little across program type.

Programs cited limits on effective program capacity as a main reason for turning away qualified applicants. Lack of clinical space, classroom space and qualified faculty were also cited. In related comments, six programs mentioned student finances affected enrollment.



## Admission Points/GPA

Program Type	Admission Points				GPA (mean)			
	1	2	3	4 or more	Min	Missing	Ave	Missing
<b>HS Extended</b>	25	0	0	0	2.3000	2	2.7045	2
<b>Adult HOE</b>	5	0	1	0	2.3333	3	2.2967	3
<b>Community College</b>	18	2	1	0	2.2526	2	2.9020	5
<b>Hospital Based</b>	1	1	0	0	2.0000	0	2.8300	0
<b>Proprietary</b>	2	2	2	15	2.2857	14	2.6400	12
<b>Total</b>	<b>51</b>	<b>5</b>	<b>4</b>	<b>15</b>	<b>2.2722</b>	<b>22*</b>	<b>2.7348</b>	<b>23*</b>

\*including online programs

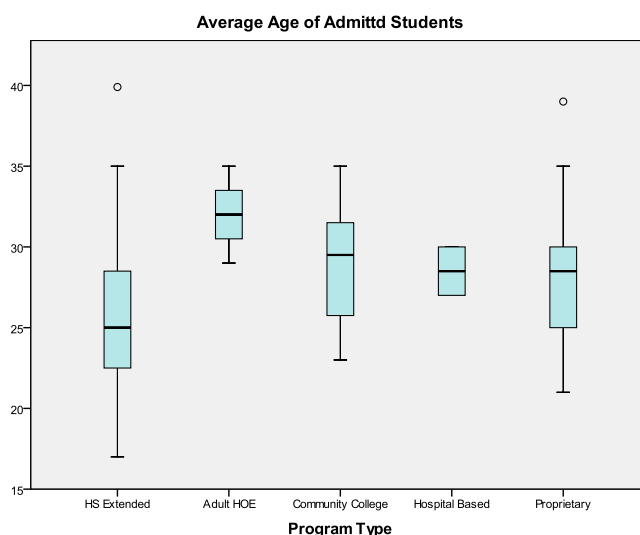
Most programs have only one admission point, including all of the High School Extended programs. However, more than half of Proprietary schools have four or more admission points. Only seven of the 21 Proprietary programs provided valid responses to a question about minimum Grade Point Average (GPA) requirements, and only nine provided valid responses to a question about the average GPA of admitted students.<sup>1</sup> There are statistically significant differences in the average GPA of admitted students by program type. Community College and Hospital Based programs tend to admit classes with higher GPAs, while Adult HOE and Proprietary schools tend to admit the lowest.

## Average Age of Admitted Students

Program Type	Average Age of Admitted Students	Missing
<b>HS Extended</b>	25.8	1
<b>Adult HOE</b>	32.0	2
<b>Community College</b>	29.0	5
<b>Hospital Based</b>	28.5	0
<b>Proprietary</b>	28.4	1
<b>Total</b>	27.8	10*

\*including online programs

Age varies meaningfully by program type. Not surprisingly, High School Extended programs report the youngest admitted class while Adult HOEs report the oldest. The average reported age of admitted classes was 27.8 years of age. Although variation did exist, within the major program types the average age of admitted classes varied widely.



## Unfilled Spaces

Over half of PN programs had unfilled spaces. Programs reported a total of 576 unfilled spaces, representing 13 percent of first year enrollment. A lack of qualified applicants, student financial issues and students cancelling or failing to show were often cited as reasons for unfilled spaces (See next page for response details).

Program Type	Unfilled Spaces			
	No	Yes	Number	% of 1st Year Enrollment
<b>HS Extended</b>	14	11	49	6%
<b>Adult HOE</b>	3	3	61	20%
<b>Community College</b>	9	12	69	10%
<b>Hospital Based</b>	1	1	5	5%
<b>Proprietary</b>	4	17	392	15%
<b>Total</b>	31	44	576	13%

<sup>1</sup> Responses of zero and responses above 4.0 were eliminated in both categories. In most cases, if a "zero" was entered, it was entered for both questions.

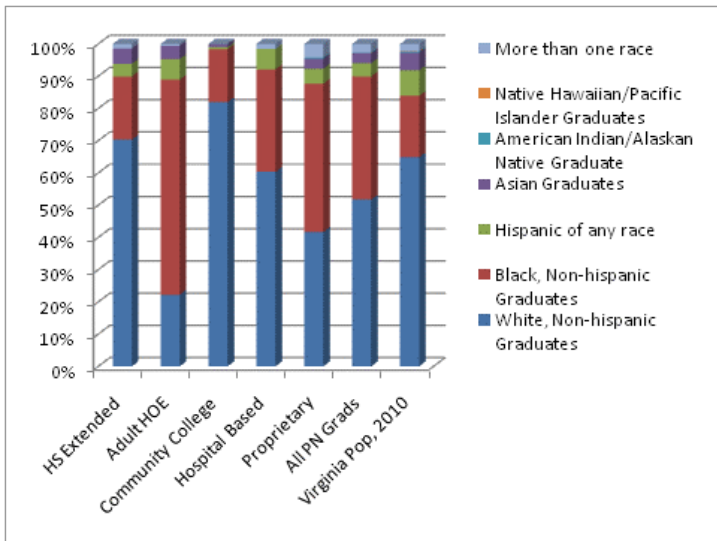
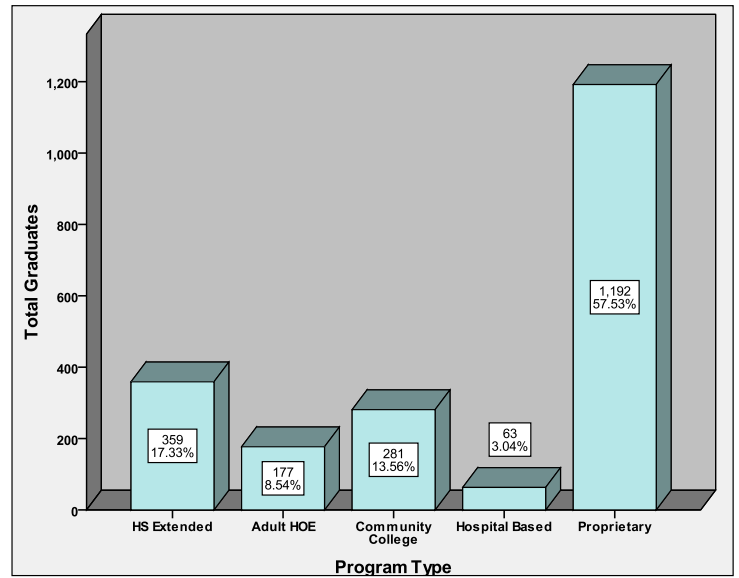
## Reasons for unfilled spaces:

<b>Students declined positions/did not show/cancelled</b>
Accepted students declined positions late in the summer and some were unsuccessful with required summer course work.
Applicants did not respond to offer of acceptance or did not enter school on the first day.
Cancelled Application
Six students accepted decided not to enter the program, other students who completed admission testing did not meet the admission standards set forth by the program.
Cancelled Applications
Student did not show up for orientation, and it was too late to offer the seat to one of the seven students on contingency.
Students did not pass fingerprint/background check.
Students dropped due to various reasons: personal, family, financial.
Students dropped from roster, or never showed up for class. One student transferred to another program.
The applicants cancelled their applications.
Unfilled spaces were due to cancellations, no shows and drops.
We had several students that were accepted not show up at the beginning of the class.
We offered admission to 20 qualified students. Did not have a wait list this year. Only 18 students accepted placement in the program. I would also like to make a comment regarding the GPA. The program does not review the GPA of adults, only the HS students for admission.
<b>Student Financial Issues</b>
Adult students could not acquire funding for tuition.
Lack of financial aid.
Financial Aid issues and cancelled applications.
Due to financial and personal problems. Poor academic performance during the course.
Students were admitted to the program but failed to enroll due to financial constraints. Other reasons not known due to lack of student information.
The one student was offered admission, but did not show up for the first day of class. When contacted, the student could not attend due to financial constraints. Additionally, due to time restrictions, there was no way to admit other students.
Three students were not able to enter due to personal or financial problems.
<b>Not Enough Qualified Applicants</b>
Did not have enough applicants that met the program requirements.
High school student class size was at maximum capacity, this is where we had our waitlist. Adult students not enough qualified applicants.
Lack of qualified applicants.
Lack of qualified applicants and their inability to pay tuition.
Limited number of applications as well as limited number of qualified applicants
Not enough qualified applicants.
Not enough qualified applicants to fill 20 spaces.
Not enough qualified applicants to fill all 30 spaces.
Not enough qualified applicants to fill spots.
Number of applicants decreased for the PN program. Also, possible returning students decided near term starting they would not return and then was too late to enroll additional students
Poor applicant pool, decrease in numbers of applicants who applied. Many applicants did not submit proof of high school Diploma or GED so are not eligible for admission. Number of applicants was decreased.
Some students withdrew from the program in the first trimester mostly due to financial reasons and other personal commitments.
Did not meet the criteria to enter the program.
We did not have enough applicants. In addition, students making application could not pass the admission TEAS Test or they could not pass the criminal background check.
<b>Multiple/Other</b>
Due to students with financial aid issues, back outs, or cancelled their applications.
Either the students were not qualified or they chose not to enter the program. They were out-of-county and could not afford the tuition.
Enrollment placed on hold by Virginia Board of Nursing until September 14th 2010
High schools did not fill all spaces.
It is difficult to project exactly how many seniors will enrol.
No other students on the waiting list were still interested in this program. They were attending another program or just were not interested when the offer was given.
Not given permission to admit students.
RSHT is purposely maintaining enrollment below its benchmark at this time.
Students interested in RN education programs and do not prefer LPN program entry. Employers in acute care arena not hiring this level either.
The program is allowed to enrol 40. We accept about 5 more than what we are allowed in order to cover what we know will be "No Shows". Unfortunately, by the time we learn the number who enrol, it is too late to try to increase the numbers. For the past 3-4 years, it is the secondary students who "change their minds" and enrol in other programs. Still, we have sufficient students to progress and we take all adults who qualify.
The School has developed and implemented a current remediation plan to decrease the amount of students the school admit for the 2010 academic year due to our NCLEX passage.

## GRADUATES

PN programs reported a total of 2072 graduates. Five programs reported having no graduates, and three did not report. Over half of PN graduates were from Proprietary schools. The largest graduating class consisted of 188 graduates, while the smallest had only three. Of the graduates, 662 were Certified Nurse Aides (CNA's) and 148 were male.

Graduates by Program Type



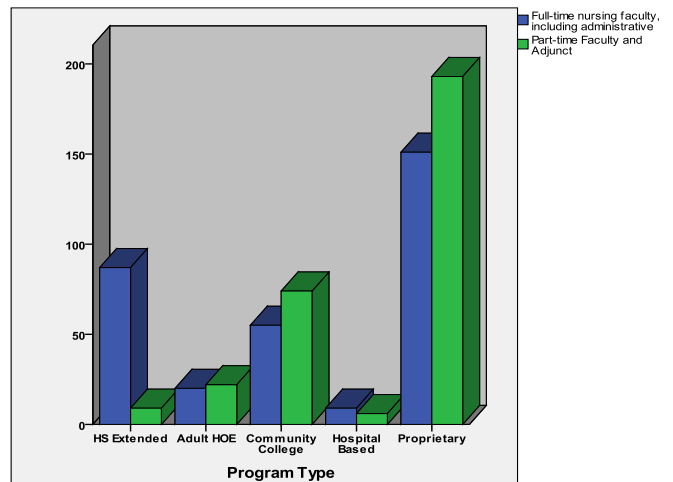
## Race/Ethnicity

Virginia's PN graduates are more diverse than the general population. The largest racial or ethnic group, Non-Hispanic Whites, accounts for just over 50 percent of the PN graduating class, compared to 65 percent of the general population. Non-Hispanic Blacks are overrepresented, accounting for almost 40 percent of PN graduates but only 19 percent of Virginia's population. All other races are underrepresented, including Non-Hispanic Whites. In particular, Hispanics account for almost 8 percent of the general population, but only 4.1 percent of PN graduates.

## FACULTY

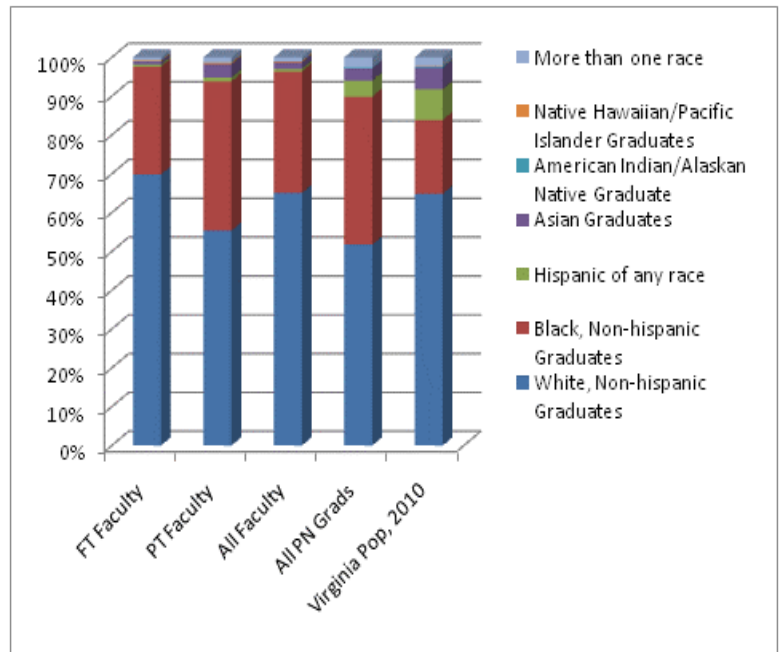
Overall, PN nursing faculty is split evenly between full- and part-time/adjunct work schedules. For most program types, faculty working part-time or in an adjunct capacity fill most positions. High School Extended programs, however, almost entirely employ full-time faculty. Three programs failed to provide information on faculty, including two Community College programs.

Work Schedule



## Faculty Diversity

PN faculty are somewhat less diverse than PN graduates. Non-Hispanic Whites account for 65.1 percent of PN faculty, followed by Non-Hispanic Blacks at 31.3 percent of PN faculty. These two demographic groups account for 96.4 percent of PN faculty. As in the graduating class, Non-Hispanic Blacks are overrepresented among PN faculty compared to the general population, while the proportion of Non-Hispanic Whites matches Virginia's overall population. All other listed racial/ethnic groups are underrepresented. In particular, Hispanics account for almost 8 percent of Virginia's population but only 0.7 percent of PN faculty. Minority groups, including Non-Hispanic Blacks, make up a larger proportion of part-time and adjunct faculty, while Non-Hispanic Whites are underrepresented.



## Faculty Age & Gender

Less than a quarter of PN faculty are over the age of 55. Part-time faculty tend to be younger than full-time faculty. Over a third of full-time faculty and almost half of part-time faculty are under age 45. Only ten percent of faculty members are male.

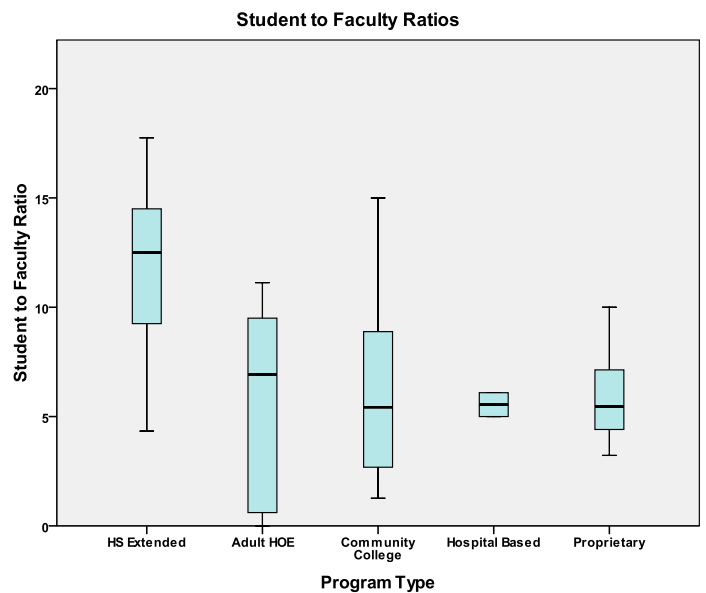
Statistic	Full-time		Part-time		Total	
	Count	Valid %	Count	Valid %	Count	Valid %
<b>Age</b>						
<25	4	1%	1	0%	5	1%
26-34	30	10%	34	12%	64	11%
35-44	79	25%	99	34%	178	30%
45 to 54	97	31%	92	32%	189	31%
55 to 64	90	29%	50	17%	140	23%
65 to 74	13	4%	11	4%	24	4%
75 +	0	0%	3	1%	3	0%
<b>Valid Total</b>	313	100%	290	100%	603	100%
<b>Unknown</b>	2		2		4	
<b>Total</b>	315		292		607	
<b>Gender</b>						
<b>Female</b>	295	92%	259	87%	607	90%
<b>Male</b>	27	8%	38	13%	65	10%
<b>Total</b>	322	100%	297	100%	672	100%

## WORKFORCE ADEQUACY

Program Type	Average Student to Faculty Ratio		
	Full-time Faculty	Part-time Faculty	All Faculty
HS Extended	12.82	32.20	11.98
Adult HOE	9.51	14.04	5.84
Community College	13.88	11.11	6.07
Hospital Based	8.92	16.70	5.55
Proprietary	17.07	11.94	5.82
<b>Total</b>	<b>13.89</b>	<b>14.23</b>	<b>8.02</b>

PN programs reported three open full-time and four open part-time positions, all of them in active recruit. Nine programs reported their full-time staffing is not adequate and seven reported that part-time/adjunct positions are inadequate. Budget problems were the most commonly cited cause of inadequate positions, although one program reported difficulty finding qualified staff for part-time positions.

The average student to faculty ratio, not including vacant positions, is 8.02 students per faculty member. High School Extended programs have the largest number of students per faculty member, but a greater majority of their faculty are full-time. Other than this difference, there is no statistical difference in student to total faculty ratios by program type. There appears to be wide variation in student to faculty ratios in all program types.



## Turnover

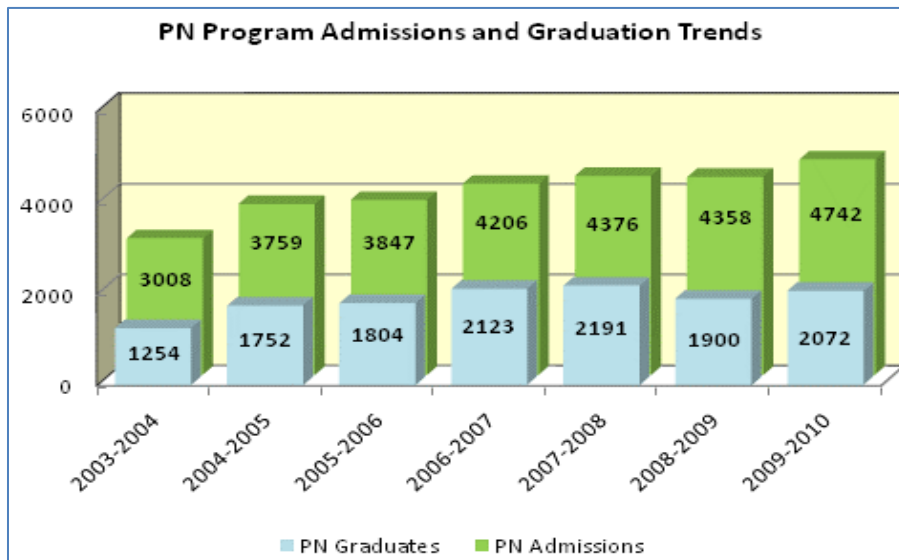
Full-time Faculty	Program Type					
	HS Extended	Adult HOE	Community College	Hospital Based	Proprietary	Total
<b>Total</b>	87	20	55	9	151	<b>322</b>
<b>Newly Appointed</b>	14	15	3	2	52	<b>86</b>
<b>Resignations</b>	12	4	7	2	20	<b>45</b>
<b>Turnover Rate</b>	14%	20%	13%	22%	13%	<b>14%</b>
<b>Proportion Newly Appointed</b>	16%	75%	5%	22%	34%	<b>27%</b>

Turnover information is collected for full-time faculty only. The annual turnover rate for PN programs is about 14 percent. This compares very favorably to 2010 national turnover figures in the educational services industry (25%) and the health care and social assistance industry (27%).<sup>2</sup> However, if figures for part-time/adjunct workers were included, turnover would likely be significantly higher. The vast majority of programs (92.5%) expect turnover to be the same or lower next year.

<sup>2</sup> US Bureau of Labor Statistics Job Openings and Labor Turnover Survey. <http://www.bls.gov/ilt/>. Accessed May 18, 2011.

## LONG TERM TRENDS

PN programs experienced a steady increase in graduates until 2008 and 2009 when the number of graduates dipped by over 13 percent. The number of graduates has almost recovered to 2007-2008 levels. Overall, the number of PN graduates has grown at an annual rate of 8.73 percent since the 2003-2004 academic year. The number of admissions has risen steadily over the same time period, at an annual rate of 7.88 percent. Over the past three years, growth has stabilized, with the number of reported graduates declining slightly along with a 4.08 percent increase in admissions.<sup>3</sup>



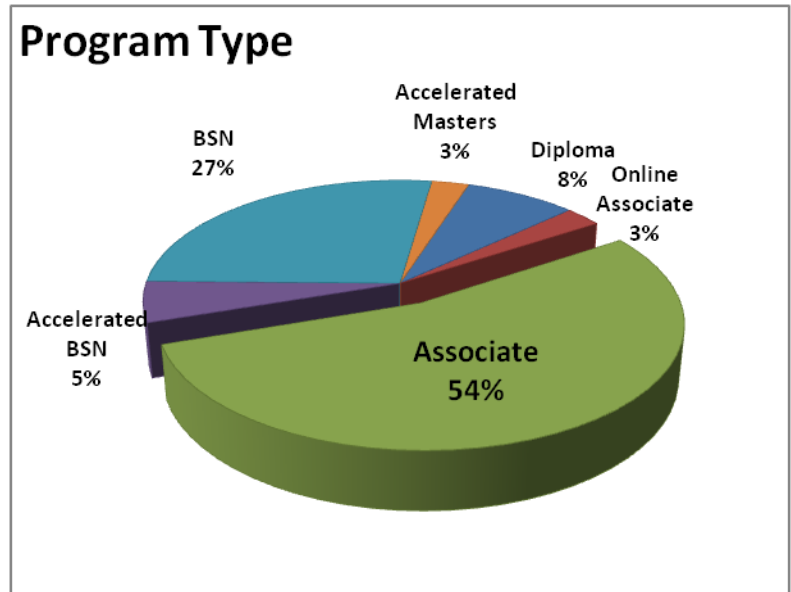
<sup>3</sup> Previous publications reported erroneous figures for the 2006-2007 and 2007-2008 academic years. These errors have been corrected in this chart.

## Registered Nurse Education Programs<sup>4</sup>

### STRUCTURE AND DURATION

Programs for initial licensure as a Registered Nurse confer four types of degrees: Diploma, Associate, Baccalaureate and Masters degrees. Most of these (57%) confer Associate degrees, followed by Baccalaureate degrees (35%, including Accelerated Masters). Only eight percent are Diploma programs. Online programs comprise only three percent of programs, and all of these are associate level programs.

The duration of programs ranges from 15 months (Associate and Accelerated BSN) to 36 months (Baccalaureate). The average program duration is 24 months. Outside of the Accelerated programs, Associate degree programs tend to be of the shortest duration and Baccalaureate degrees the longest.



Programs		Program length, months					
Program Type	Count	Mean	Min	25 %ile	75 %ile	Max	Missing
Diploma	6	25	20	21	30	33	0
Online Associate	2	23	16	16	30	30	0
Associate	40	21	15	19	24	30	0
Accelerated BSN	4	17	15	15	19	20	0
BSN	20	31	20	24	36	36	1
Accelerated Masters	2	22	20	20	24	24	0
<b>Total</b>	<b>74</b>	<b>24</b>	<b>15</b>	<b>20</b>	<b>28</b>	<b>36</b>	<b>1</b>

Diploma programs vary widely in duration with a few programs of extended duration pulling up their mean duration. Half of Diploma programs, however, have durations of 22 months or less.

<sup>4</sup> In the 2009-2010 academic year, there were 74 registered nurse programs licensed in Virginia. Of these, eight provided truncated responses. Two programs provided information on students but closed during the course of the year and did not provide information on existing faculty. Five of the programs provided information on students but did not provide information on faculty for unknown reasons. One program did not provide any answers. The extent of missing data is reported in each section.



## RN PROGRAM CLINICAL HOURS

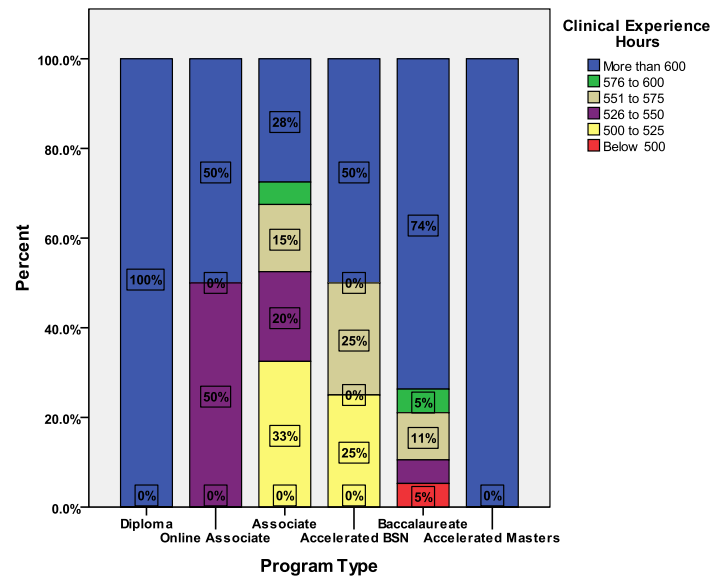
Almost half of RN programs require students to complete over 600 hours of Clinical Care, and over three quarters require over 500 hours of Direct Client Care. Only about 6 percent of programs use more than 100 hours of Clinical Simulation.

Clinical Hours		Program Type							
Type	Amount	Diploma	Online Associate	Associate	Accel BSN	BSN	Accel Masters	Total	% of Total
Clinical Experience Hours	500 to 525	0	0	13	1	0	0	14	19.18%
	526 to 550	0	1	8	0	1	0	10	13.70%
	551 to 575	0	0	6	1	2	0	9	12.33%
	576 to 600	0	0	2	0	2	0	4	5.48%
	More than 600	6	1	11	2	14	2	36	49.32%
	<b>Total</b>	<b>6</b>	<b>2</b>	<b>40</b>	<b>4</b>	<b>19</b>	<b>2</b>	<b>73</b>	<b>100.00%</b>
Direct Client Care Hours	451 to 475	0	0	1	0	1	0	2	2.74%
	476 to 500	2	0	11	0	2	0	15	20.55%
	More than 500	4	2	28	4	16	2	56	76.71%
	<b>Total</b>	<b>6</b>	<b>2</b>	<b>40</b>	<b>4</b>	<b>19</b>	<b>2</b>	<b>73</b>	<b>100.00%</b>
Clinical Simulation Hours	0 to 25	4	2	28	2	7	0	43	58.90%
	26 to 50	0	0	8	2	6	2	18	24.66%
	51 to 75	1	0	1	0	3	0	5	6.85%
	76 to 100	0	0	2	0	0	0	2	2.74%
	101 to 125	0	0	0	0	3	0	3	4.11%
	126 to 150	0	0	1	0	0	0	1	1.37%
	More than 200	1	0	0	0	0	0	1	1.37%
	<b>Total</b>	<b>6</b>	<b>2</b>	<b>40</b>	<b>4</b>	<b>19</b>	<b>2</b>	<b>73</b>	<b>100.00%</b>

**Note:** Response categories with a zero result for all program types are not included in this table.

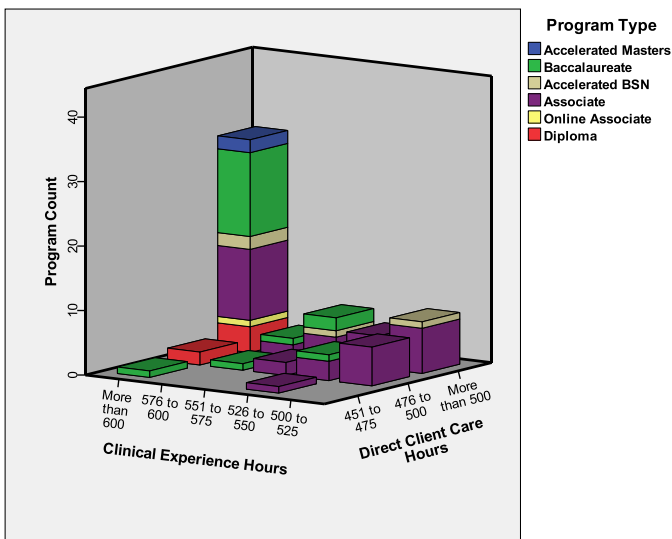
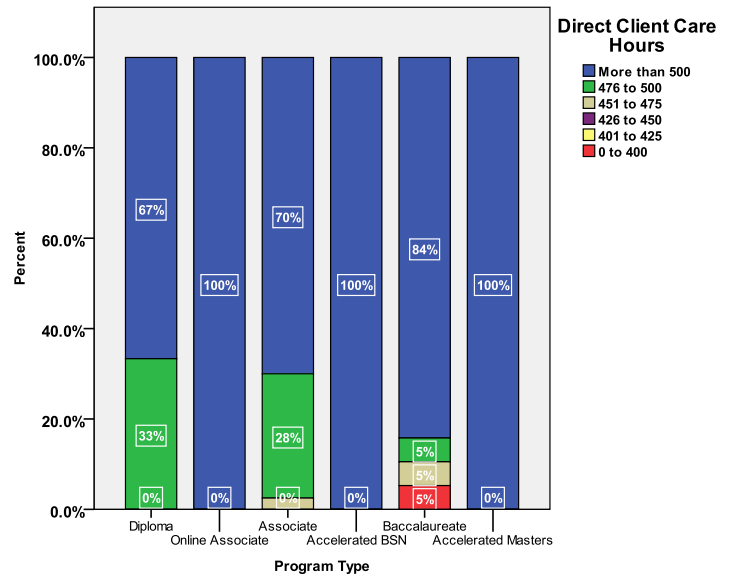
## Clinical Experience Hours

Clinical Experience hours seem to vary<sup>5</sup> by program type. Diploma and the two Accelerated Masters programs tend to require the most Clinical Experience hours, followed by Baccalaureate programs. Associate and Accelerated Baccalaureate programs tend to require the least. However, requirements vary widely over the scale used. Over a quarter of Associate programs and half of Baccalaureate programs require more than 600 hours of Clinical Experience.



## Direct Client Care Hours

Programs may split Clinical Experience Hours among Direct Client Care and Clinical Simulation, with up to 20 percent of Clinical Experience Hours being simulated. The number of Direct Client Care hours needed for graduation does not vary meaningfully among programs over the scale used. Three quarters of all programs offer over 500 hours of Direct Client Care. An additional 20 percent offer between 476 and 500 hours. A third of Diploma programs, all of which require over 600 hours of Clinical Experience, offer less than 500 hours of Direct Client Care. All of the Accelerated Baccalaureate programs offer over 500 hours of Direct Patient Care, even though half offer only between 500 and 575 hours of Clinical Experience.



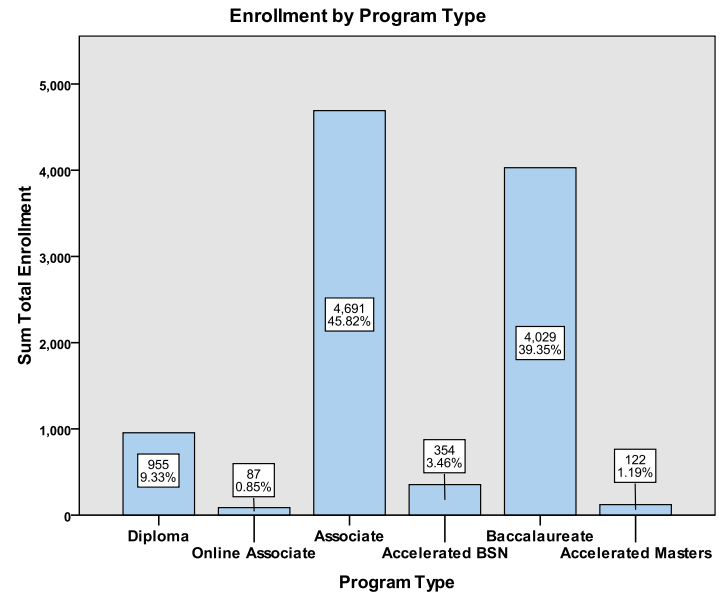
## Clinical Experience by Program Type

Programs requiring fewer Clinical Experience hours tend to focus on Direct Client Care. Only two programs mandate less than 476 hours of Direct Client Care. The remainder of their Clinical Experience Hours are simulated care. A large number of programs offer more than 500 hours of Direct Client Care and over 600 Clinical Experience Hours including Clinical Simulation Hours.

<sup>5</sup>Pearson Chi-Square Significance of .106. The scale of possible responses related to clinical experiences limits the use of statistical tests in this section.

## ENROLLMENT

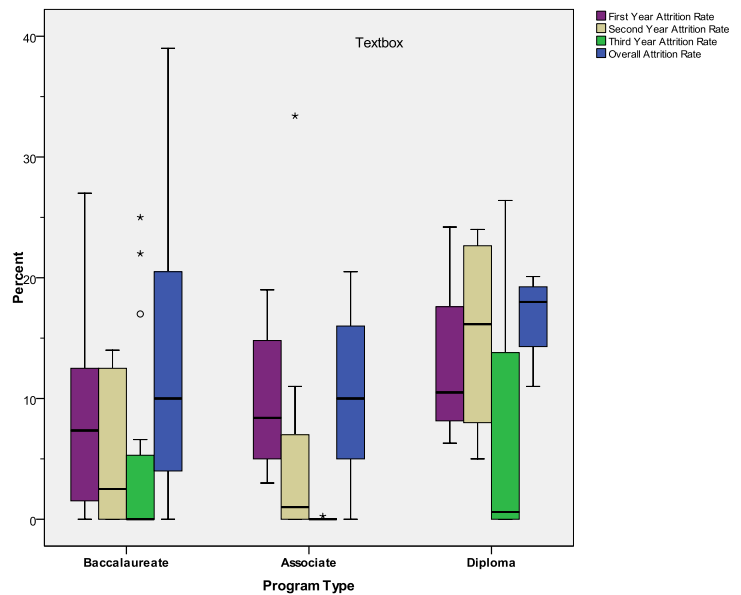
RN programs reported a total enrollment of 10,238 students. Of these, 871 (8.5%) were Licensed Practical Nurses and 936 (9.1%) were male. Over 85 percent were enrolled in either Associate (46%) or Baccalaureate programs (39%). Slightly fewer than ten percent were enrolled in Diploma programs. Just over five percent were enrolled in Accelerated or Online programs.



Type	Year	Avg	Min	Max	Missing
Diploma	1st Year Attrition	19	6	33	0
	2nd Year Attrition	17	5	24	0
	3rd Year Attrition	7	0	26	2
	<b>Overall Attrition</b>	<b>17</b>	<b>7</b>	<b>25</b>	<b>0</b>
Online Associate	1st Year Attrition	25	20	30	0
	2nd Year Attrition	5	5	6	0
	3rd Year Attrition	.	.	.	2
	<b>Overall Attrition</b>	<b>30</b>	<b>25</b>	<b>35</b>	<b>0</b>
Associate	1st Year Attrition	16	0	45	1
	2nd Year Attrition	10	0	33	2
	3rd Year Attrition	0	0	0	27
	<b>Overall Attrition</b>	<b>20</b>	<b>0</b>	<b>63</b>	<b>3</b>
Accelerated BSN	1st Year Attrition	5	1	11	0
	2nd Year Attrition	6	2	13	1
	3rd Year Attrition	10	10	10	3
	<b>Overall Attrition</b>	<b>5</b>	<b>2</b>	<b>9</b>	<b>0</b>
Baccalaureate	1st Year Attrition	8	0	27	2
	2nd Year Attrition	5	0	14	2
	Third Year Attrition	5	0	25	4
	<b>Overall Attrition</b>	<b>11</b>	<b>0</b>	<b>39</b>	<b>2</b>
Accelerated Masters	1st Year Attrition	0	0	0	0
	2nd Year Attrition	0	0	0	0
	3rd Year Attrition	.	.	.	2
	<b>Overall Attrition</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>
Total	1st Year Attrition	13	0	45	3
	2nd Year Attrition	9	0	33	5
	3rd Year Attrition	3	0	26	40
	<b>Overall Attrition</b>	<b>16</b>	<b>0</b>	<b>63</b>	<b>5</b>

## Attrition

The average overall attrition rate for RN programs is 16 percent. Attrition is highest in the first year, also with an average rate of 16 percent. For some programs, attrition is exceedingly high, up to 63 percent overall. Attrition in the final or third years remains elevated, representing a substantial loss of educational investment and a substantial reduction in the potential nursing workforce. There is no statistical difference in attrition rates between program types.

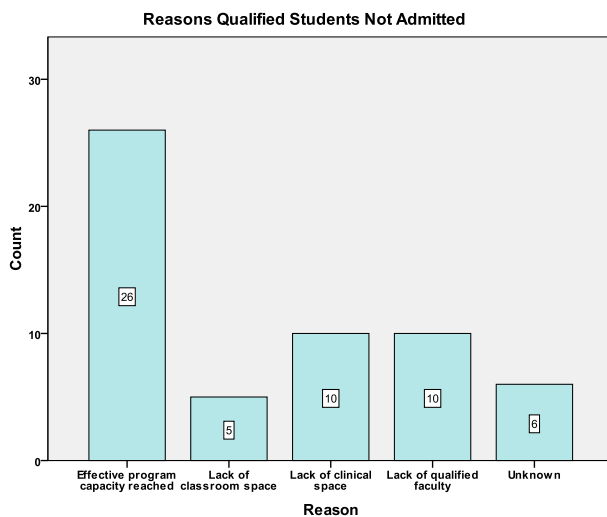
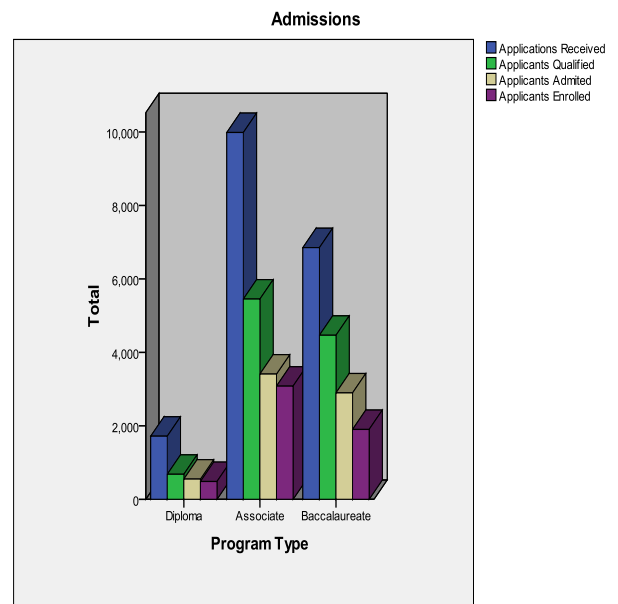


## ADMISSIONS

Type	Applications Received	Applicants Qualified	% Qualified	Applicants Admitted	% of Qualified Admitted	Applicants Enrolled	% of Admitted Enrolled	% of Applicants Enrolled
Diploma	1719	682	40%	551	81%	485	88%	28%
Online Associate	137	99	72%	78	79%	71	91%	52%
Associate	9986	5452	55%	3410	63%	3081	90%	31%
Accelerated BSN	864	636	74%	321	50%	256	80%	30%
BSN	6852	4466	65%	2897	65%	1902	66%	28%
Accelerated Masters	234	211	90%	81	38%	48	59%	21%
<b>Total</b>	<b>19792</b>	<b>11546</b>	<b>58%</b>	<b>7338</b>	<b>64%</b>	<b>5843</b>	<b>80%</b>	<b>30%</b>

Virginia's RN programs received 19,792 applications. As with PNs, RN candidates may send applications to multiple schools. Only 58 percent of applications were from candidates who were qualified for the respective programs. Programs admitted 64 percent of qualified applicants, and 80 percent of admitted applicants enrolled. In the end, 30 percent of applications resulted in enrolled students.

Admissions statistics varied greatly by type of degree. Diploma and Associate programs had the smallest proportion of qualified applications, at 40 and 55 percent respectively. Accelerated BSN and Accelerated Masters programs had a large proportion of qualified applicants but were unable to admit more than half of qualified applicants. Online Associate programs had large proportions of qualified applicants in their application pools, were able to admit a large proportion of qualified applicants, and actually enrolled a large proportion of admitted students. Online Associate programs were able to enroll 52 percent of all applicants—a significantly greater proportion than other types of programs.



In most cases, qualified students were not admitted due to the effective program size being reached. A lack of clinical space, a lack of qualified faculty and a lack of classroom space were also commonly cited. In related comments, four programs noted financial aid and budget issues. Another program noted a shrinking job market in its service area.

## Admission Points/GPA

Program Type	Admission Points				GPA (mean)	
	1	2	3	4 or more	Min	Ave
Diploma	2	3	1	0	2.25	2.89
Online Associate	1	1	0	0	2.50	3.03
Associate	21	8	6	5	2.35	2.95
Accelerated BSN	2	2	0	0	2.63	3.22
BSN	9	8	1	1	2.67	3.25
Accelerated Masters	2	0	0	0	2.85	3.53
Total	37	22	8	6	2.46	3.05

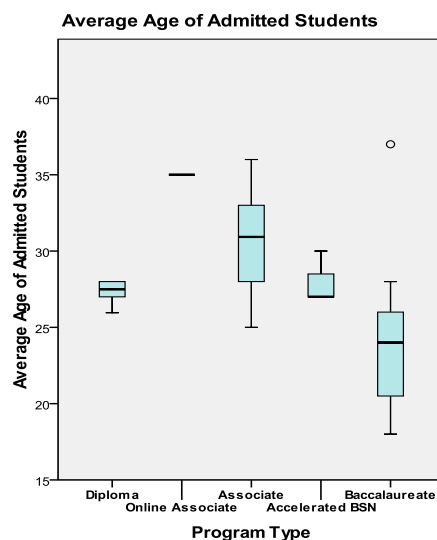
Most programs had only one or two admission points per academic year. Eight programs had three admission points and six had four or more. Most Associate programs had only one admission point; however, eleven Associate programs had three or more admission points, providing the widest diversity in this category.

GPA requirements and average GPA of enrolling students varied by program type. Diploma programs had the lowest GPA requirements and the lowest average student GPA. Both figures were highest for Accelerated Masters classes.

## Average Age of Admitted Students

Program Type	Average age of admitted students
Diploma	27
Online Associate	35
Associate	31
Accelerated BSN	28
Baccalaureate	24
All Programs	29

Age varies meaningfully by program type. Baccalaureate programs admit the youngest freshman class while Associate degree programs admit the oldest. Only one online program provided information on average age. It was at the very high level of 35. The youngest reported admitted class age was 18 years, while the oldest was 37—both to Baccalaureate programs.



## Unfilled Spaces

Over half of RN programs had unfilled spaces. Programs reported a total of 277 unfilled spaces, representing five percent of first year enrollment. No shows, cancellations, and a lack of qualified applicants were the most cited reasons for unfilled spaces. Unfilled spaces represented over 10 percent of first year enrollment in Online Associate and Accelerated BSN programs.

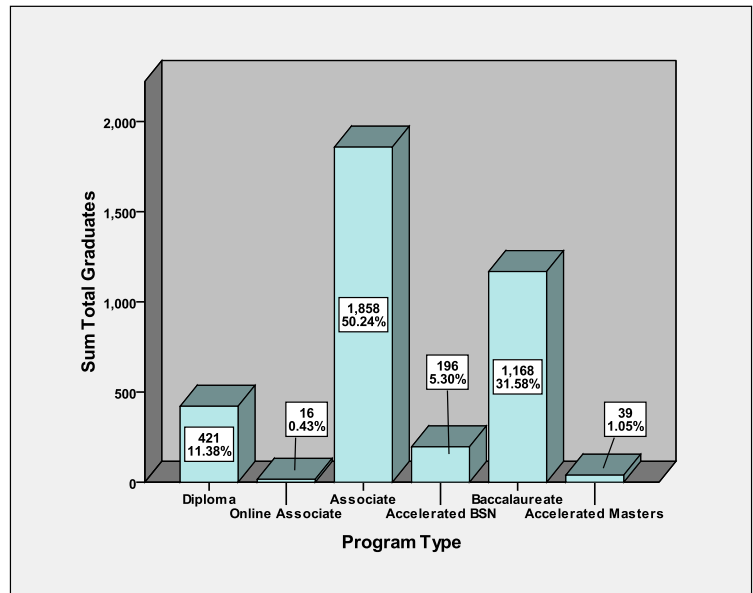
Program Type	Unfilled Spaces				
	No	Yes	Missing	Number	% of 1 <sup>st</sup> Year Enrollment
Diploma	1	5	0	30	6%
Online Associate	1	1	0	7	10%
Associate	22	18	0	146	5%
Accel. BSN	1	3	0	27	11%
BSN	13	5	2	67	4%
Accel. Masters	2	0	0	0	0%
All Programs	40	32	2	277	5%

## Reasons for unfilled spaces:

<b>Accepted students did not attend/dropped</b>
A student dropped out during the 2-week Drop/Add period at the beginning of the semester and although the slot was offered to 2 other students, they were not able to change their plans at the last minute.
Accepted students did not attend.
Cancelled application.
Last minute decisions not to enroll in the program; the enrollment requirements take too much time, e.g., background checks, immunizations (Hep B) and prohibit us from admitting/accepting additional students within a few days of classes beginning; other available slots were filled by returning students who had to repeat coursework.
Qualified students enrolled in another program, primarily the local Community College's new AD program.
Some students declined the offer. Part-time evening weekend program for non-LPNs still has more spaces than filled.
Student admitted but was a no call no show for the semester.
Students dropped last minute.
Students qualified were accepted; however, three students did not come for orientation and class.
Students who were accepted and confirmed didn't show up for class.
Students withdrew, and there were no students waiting to fill those slots.
The students who were admitted changed their minds at the last minute. Also, students were aware the ADN program was closing with the graduating class of 2010.
These students were accepted but did not enrol nor did they notify us until it was too late to fill the position.
Two students dropped as soon as classes started.
<b>Students/applicants did not meet requirements</b>
Applicants did not meet requirements at start of semester.
Due to students not successfully passing the HESI Requirements for admissions into the program.
Lack of qualified applicants.
Lack of qualified applicants who had met all of the prerequisites for admission to the Accelerated program.
No additional qualified applicants.
Raised admission standards. This especially affected transfer students.
Several students tested positive on drug screens, and several had issues on criminal background checks that precluded them from being accepted into our program.
Unqualified applicants.
Newly approved program. Numerous individuals in the D.C. Metro area were unaware of existence of program. Nursing leads did not meet program admission requirements.
<b>Lack of Funding</b>
Most of the qualified applicants did not have means of financing or paying for their tuitions. The college is new and still not able to participate with Title IV program.
<b>Other/Multiple</b>
During this time period we were assimilating the former CNP students into our Hybrid Program. We limited as closely as possible the numbers based on 20 per semester as agreed to with the BON, but we had to bring in the CNP students who had been granted admission already.
Application pool was smaller than usual and also had fewer qualified applicants. This was likely related to changes in the admission requirements to the program.
First cohort admitted was only 14 in number, we did not create openings for new students based on attrition due to clinical placement issues.
Students decide not to attend for a variety of reasons like financial, family, etc.
Students did not complete pre-requisites, chose another nursing program, financial considerations.
The program closed.
We are currently on provisional approval.

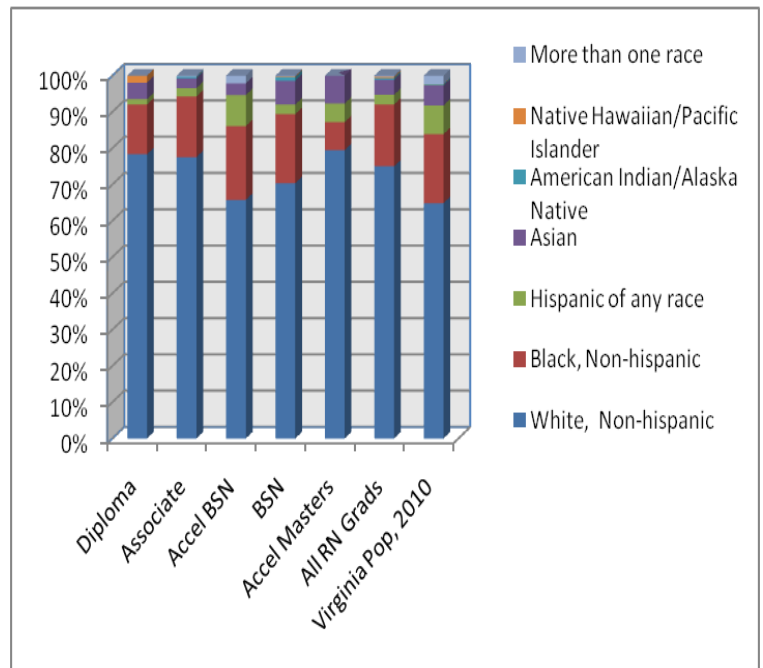
## GRADUATES

RN Programs reported a total of 3,698 graduates. Ten programs, mostly new programs, reported having no graduates during the reporting period, and three did not report. The largest graduating class consisted of 176 graduates; the smallest only four. Of the graduates, 404 were Licensed Professional Nurses at the time of admission, and 284 were male.



## Race/Ethnicity

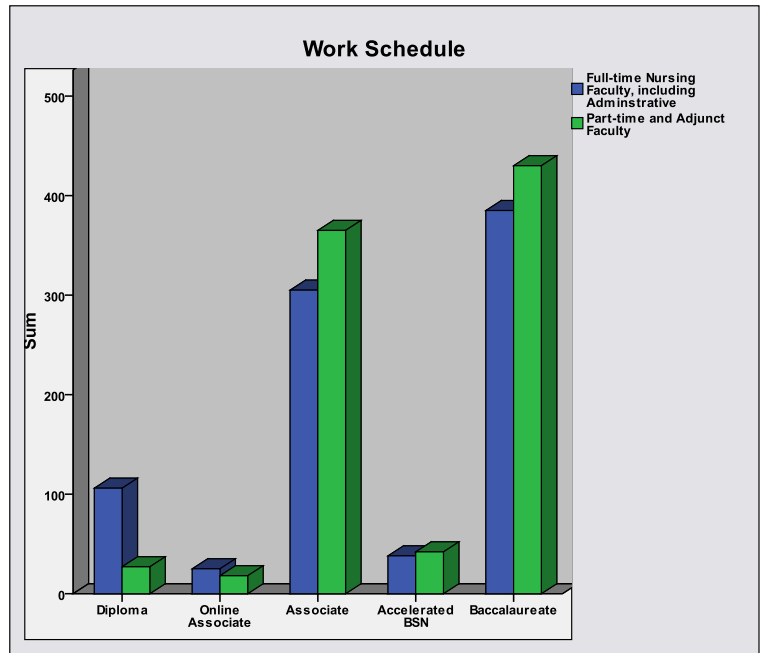
Virginia's RN graduates are less diverse than the general population. According to the 2010 US Census, Non-Hispanic Whites make up 65 percent of Virginia's population but they make up 75 percent of all graduates. Non-Hispanic Blacks are well represented, making up 17 percent of all graduates compared to 19 percent of Virginia's population. Other races/ethnicities are underrepresented. Hispanics, in particular, make up eight percent of the population, but less than three percent of RN graduates.



## FACULTY

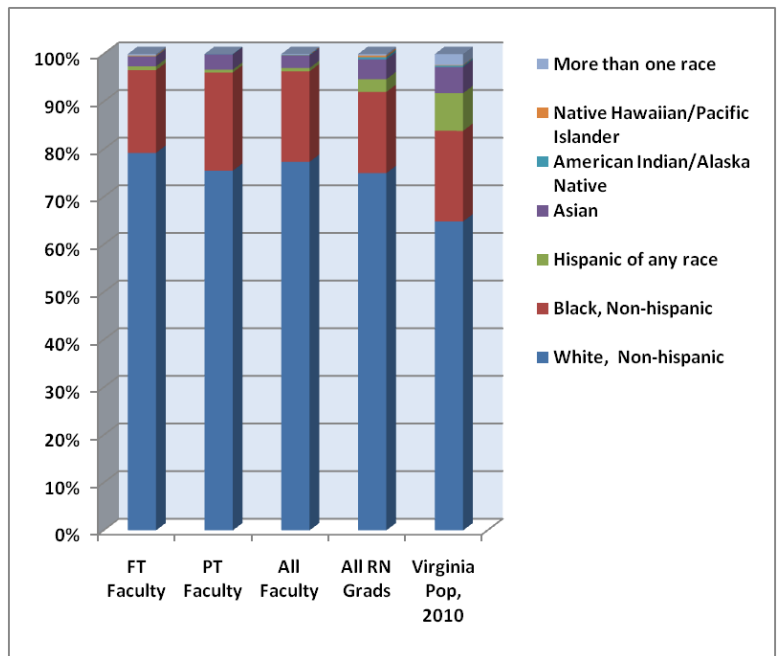
Associate, Baccalaureate and Accelerated Baccalaureate programs employ more faculty on a part-time or adjunct basis than on a full-time basis. Diploma programs employ more full-time than part-time faculty by a wide margin.

As reported earlier, eight programs failed to provide information on faculty. No Accelerated Masters programs and only one Online Associate program included information on faculty.



## Faculty Diversity

RN program faculty are less racially and ethnically diverse than RN graduates and the general population. Notable, however, is the large proportion of Non-Hispanic Black part-time/adjunct faculty. Non-Hispanic Black faculty make up over 20 percent of part-time/adjunct faculty but only 17 percent of RN graduates. Hispanics are severely underrepresented in faculty, making up eight percent of the population, almost three percent of RN graduates, but less than one percent of faculty.





## Faculty Age & Gender

Statistic	Full-time		Part-time		Total	
	Count	Valid %	Count	Valid %	Count	Valid %
<b>Age</b>						
≤25	0	0%	2	0%	2	0%
26-34	87	7%	87	9%	173	8%
35-44	197	17%	289	31%	486	23%
45-54	373	32%	307	33%	680	33%
55-64	440	38%	189	20%	629	30%
65-74	57	5%	53	6%	110	5%
75+	1	0%	3	0%	4	0%
<b>Valid Total</b>	1155	100%	930	100%	2084	100%
<b>Unknown</b>	33		200			
<b>Total</b>	1188		1130			
<b>Gender</b>						
		%		%		%
Female	1055	95%	988	95%	2043	95%
Male	45	4%	49	5%	94	4%
Unknown	5	0%	0	0%	5	0%
<b>Total</b>	1105	100%	1037	100%	2142	100%

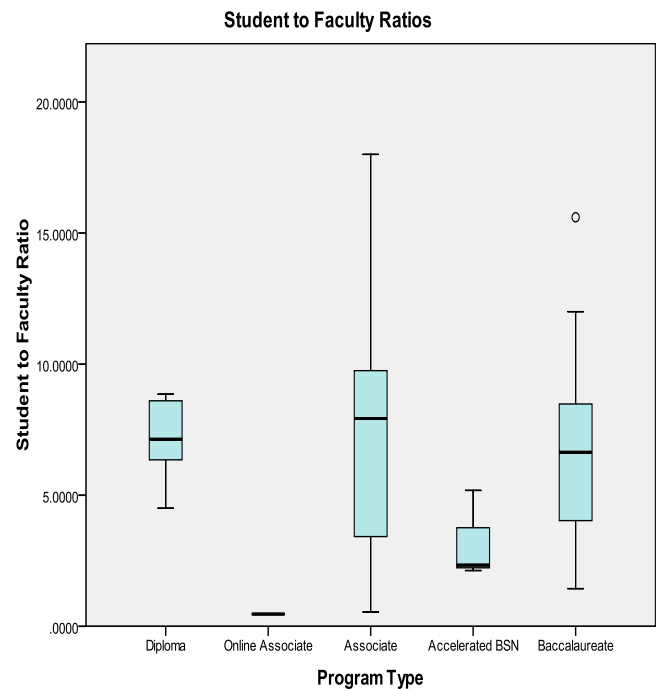
Thirty-five percent of faculty are age 55 or older. Part-time/adjunct faculty tend to be younger. Only 26 percent of part-time/adjunct faculty are age 55 and older while 43 percent of full-time faculty are over the age of 55. About a third of faculty in both groups are age 45 to 55.

## WORKFORCE ADEQUACY

RN programs reported 64 open full-time positions, of which 46 were in active recruit, and 21 open part-time/adjunct positions, all of which were in active recruit. Twelve programs reported their full-time staffing is not adequate and six reported that part-time/adjunct positions are inadequate. Budget issues were the main cause of staffing inadequacy. Two programs mentioned faculty turnover, and one cited high student to faculty ratios as a cause. Two programs noted difficulty recruiting adjuncts, and one cited the “high volume use of faculty by Proprietary schools” as a cause.

Program Type	Average Student to Faculty Ratio		
	Full-time Faculty	Part-time Faculty	All Faculty
Diploma	9.16	40.04	7.10
Online Associate	.80	1.11	.46
Associate	14.84	15.24	7.10
Accel. BSN	5.60	12.10	3.21
BSN	12.55	19.96	6.61
<b>Total</b>	13.01	18.56	6.68

The average student to faculty ratio, not including vacant positions, is 6.68 students per faculty member. Statistically, there is no difference in overall student to faculty ratios by program type. Only one Online Associate degree program, with an extremely low student to faculty ratio, reported faculty information, and so was not included in statistical analyses of workforce adequacy. Within groups, there is wide variation in student to faculty ratios, and programs with low student to faculty ratios exist in all program types.



## Turnover

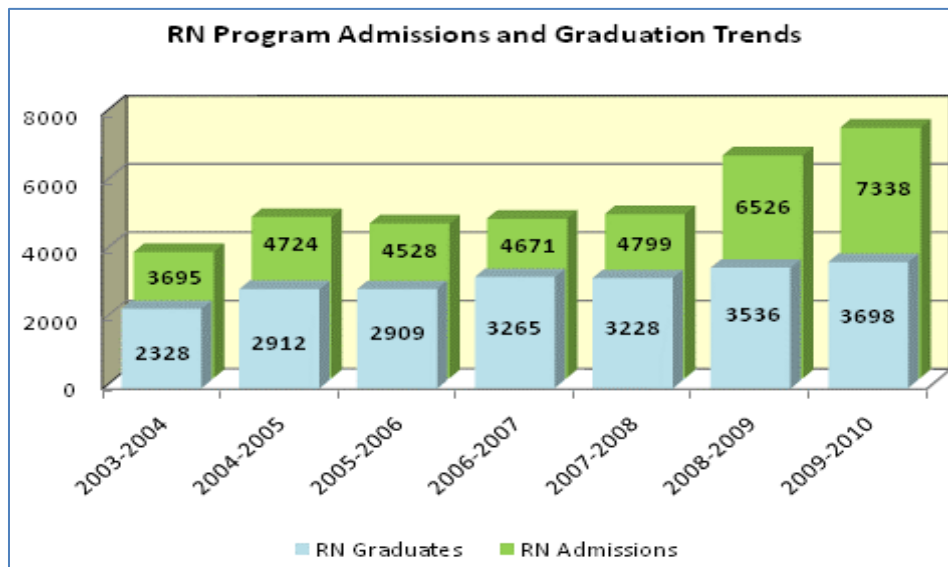
Turnover information is collected for full-time faculty only. The annual turnover rate is ten percent. This compares very favorable to 2010 national turnover figures in the educational services industry (25%) and health care and social assistance industry (27%).<sup>6</sup> However, if figures for part-time/adjunct workers were included turnover would likely be significantly higher. The greater majority of programs (92%) expect turnover to be the same or lower next year.

Full-time Faculty	Program Type					Total
	Diploma	Online	Associate	Accel BSN	BSN	
<b>Total</b>	106	25	305	38	385	<b>859</b>
<b>Newly Appointed</b>	7	2	49	10	38	<b>106</b>
<b>Resignations</b>	19	1	26	4	34	<b>84</b>
<b>Turnover Rate</b>	18%	8%	9%	11%	9%	<b>10%</b>
<b>Proportion newly appointed</b>	7%	4%	16%	26%	10%	<b>12%</b>

<sup>6</sup> US Bureau of Labor Statistics Job Openings and Labor Turnover Survey. <http://www.bls.gov/jlt/>. Accessed May 18, 2011.

## LONG TERM TRENDS

RN programs have seen a steady increase in graduates since the 2003-2004 graduation year. Since that time, the number of graduates has increased by 1370 graduates, an annual growth rate of 8.02 percent. The number of admissions jumped in 2008 and 2009 after remaining stable for several years. This may be due to economic conditions and an increased focus on employment in the health care sector among the public and the media. Between 2003 and 2010, admissions have increased at an annual rate of 12.11 percent. This increase mostly occurred in the last two years, which saw an annualized increase of 23.66 percent. The number of graduates increased at an annualized rate of 7.03 percent over the same period. An increase in the number of graduates will necessarily lag any increase in admissions, and we expect a corresponding increase in graduates in the coming years.



## NCLEX Pass Rates and Virginia's Educational Programs

The Board of Nursing requested that the Healthcare Workforce Data Center examine the NCLEX pass rates of nursing students by program type. The HWDC did find some statistical support for a difference in NCLEX pass rates by LPN program type. However, the HWDC also identified potential confounding variables that may have greater influence on pass rates. The HWDC did not find a statistically significant difference in NCLEX pass rates by RN school type, or by degree type, except that both master's level programs have 100 percent pass rates. Considering the importance of NCLEX pass rates to nurse education programs, a more thorough treatment of this subject may be warranted.

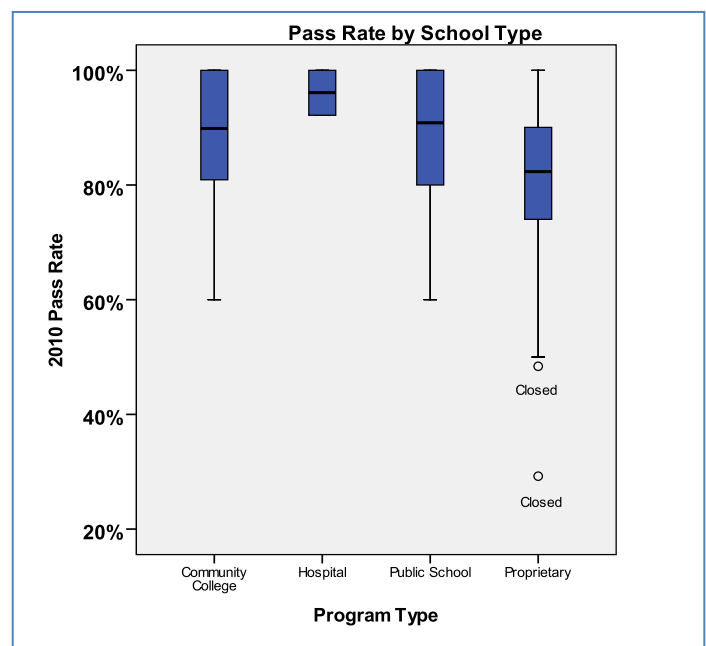
### LICENSED PRACTICAL NURSING PROGRAMS

#### Overview

This section examines the effectiveness of LPN educational programs by program type by looking at 2010 NCLEX pass rates. The analysis includes currently open programs and two closed programs. Although these programs are closed, candidates who graduated from these programs prior to closure sat for the 2010 NCLEX exam. Both closed programs were proprietary programs. Overall, there were 75 programs within the study period, two of which are currently closed. There are only two hospital-based programs, but over twenty programs in each of the other program types (see table). Students from the twenty-one proprietary programs accounted for over 75 percent of all NCLEX candidates, including two-thirds of candidates from open programs in 2010.

Program Type	Number of Programs	2010 NCLEX Candidates (open Programs)	2010 NCLEX Candidates (closed Programs)
Public School (K-12 & Adult Education)	30	412	0
Community College	20	317	0
Hospital Based	2	67	0
Proprietary	21	1287	315
<b>Total</b>	<b>73</b>	<b>2083</b>	<b>315</b>

Within all program types there is great variation in NCLEX pass rates. The boxplots to the right demonstrate that for all program types, almost 75 percent achieved pass rates of 80 percent or higher in 2010. Programs within all three categories achieved pass rates of 100 percent. Programs within both the community college and local government categories had pass rates as low as 60 percent. Within proprietary programs, a few open programs had pass rates as low as 50 percent. The two closed programs had pass rates of 48% and 29% in 2010.



## Statistical Tests

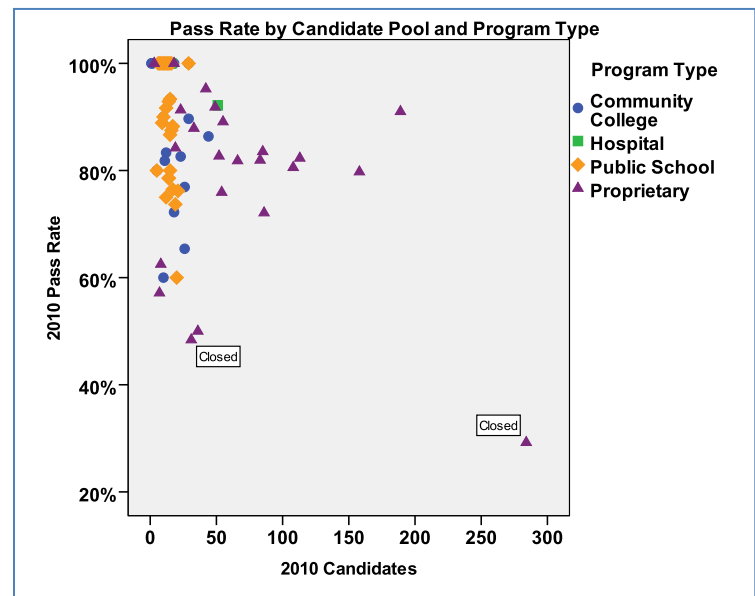
Statistical tests were run to determine if there is a statistically measurable difference between program types as measured by 2010 pass rates.<sup>7</sup> When measuring all programs, a statistically significant difference was identified between proprietary schools and all other types of schools. There was no statistically significant difference among hospital, public school or community college programs.<sup>8</sup> The same tests were run removing currently closed programs, leaving only the open programs in the sample. A generalized test did not reveal a statistically significant difference between program types, however it did hint that there *may* be a difference.<sup>9</sup> Further tests comparing individual program types suggest a statistically significant difference between proprietary programs and public school programs and between proprietary and hospital programs. They did not identify a statistically significant difference between the other program types, including between proprietary and community college programs.

Program Type	Open Programs		All Programs	
	Median	Mean	Median	Mean
Hospital	96%	96%	96%	96%
Public School	91%	90%	91%	90%
Community College	90%	88%	90%	88%
Proprietary	83%	82%	82%	78%
All Programs	89%	87%	84%	85%
Kruskal-Wallis Test Significance	.118	NA	.043	NA

## Discussion of the Results

These tests suggest that proprietary programs do have lower NCLEX pass rates than other types of programs and that students from proprietary programs have a lower rate of success on NCLEX exams. However, readers are cautioned against drawing conclusions as to the magnitude or causes of differences among programs. Considering the wide variation in pass rates *within* program types, it is unlikely that program type explains much of the difference in pass rates among programs.

The size of the candidate pool from each program, for instance, provides an indication of one potential confounding variable. A quick look at the graph to the right shows a wide variation in pass rates among programs with fewer than 75 candidates. Among programs with 75 or more candidates, however, there is little variation in pass rates—most hover just above the 80% threshold, or just below the weighted mean for all programs. Large classes may simply mean that the large candidate pools' rates regress towards the mean of the entire candidate population. In other words, the large student populations of these schools are a cross-section of the students in all other LPN programs. These programs account for the majority of proprietary programs and candidates and strongly influence the statistical results.



<sup>7</sup> Distributions in both weighted and unweighted samples are non-normal, limiting us to the use of non-parametric tests. We first ran a Kruskal-Wallis Analysis of Variance test in PASW to determine between-group differences among all categories. Mann-Whitney-U tests were run to determine differences between pass rates from Proprietary and other program types specifically.

<sup>8</sup> At the 90% confidence level

<sup>9</sup> For scientific purposes, we would reject the idea that there is a difference between program types. However, for practical purposes further examination is useful.

## REGISTERED NURSES

### Overview

This section examines the effectiveness of RN educational programs by program type by looking at 2010 NCLEX pass rates. Only candidates from currently open programs took the NCLEX in 2010, so no programs were removed. Overall, candidates from 65 Virginia RN programs took the NCLEX. Community colleges make up over 40 percent of programs. Unlike LPN programs, RN programs confer different degrees. Diploma, associate, baccalaureate, and accelerated master's degree programs all lead to initial RN licensure. Over half of all programs are associate degree level.

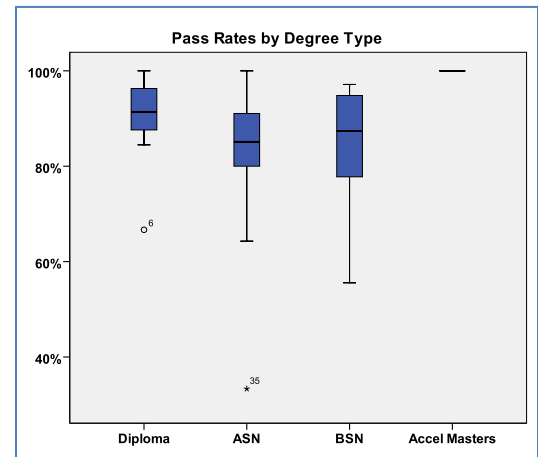
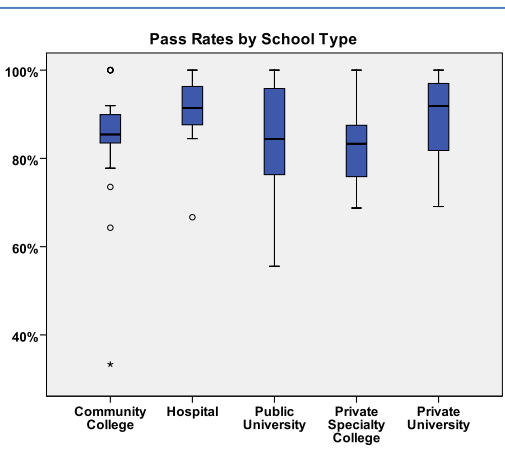
School Type	Number of Programs	2010 NCLEX Candidates
Hospital Based	7	428
Community College	27	1391
Proprietary/ Specialty College	9	427
Public University	14	857
Private University	8	442
<b>Total</b>	<b>65</b>	<b>3543</b>

Degree Type	Number of Programs	2010 NCLEX Candidates
Diploma	6	416
Online	3	48
Associate	36	1836
Accelerated Baccalaureate	3	149
Baccalaureate	15	1053
Accelerated Masters	2	41
<b>Total</b>	<b>65</b>	<b>3545</b>

Additionally, there are a few online programs and a few accelerated baccalaureate programs.<sup>10</sup> Since there are so few online and accelerated baccalaureate programs, they were combined into their respective degree type categories for our analyses. The two online programs include one hospital-based diploma program and two associate programs. Accelerated baccalaureate programs are included with other baccalaureate programs. Like LPN programs, RN programs experience wide variation in NCLEX pass rates by both degree type and by school type. The exception is accelerated Masters programs. Both Accelerated Masters programs achieved 100% NCLEX pass rates in 2010.

### Statistical Tests

The prevalence of 100 percent pass rates in the LPN data prevented the use of the most powerful statistical tests that require a normal distribution of continuous variables. RN pass rates, however, were more normally distributed allowing for more complex parametric tests. This allowed assessment of the effect of program size on pass rates



while also examining school and degree types. In other words, the impact of program size could be

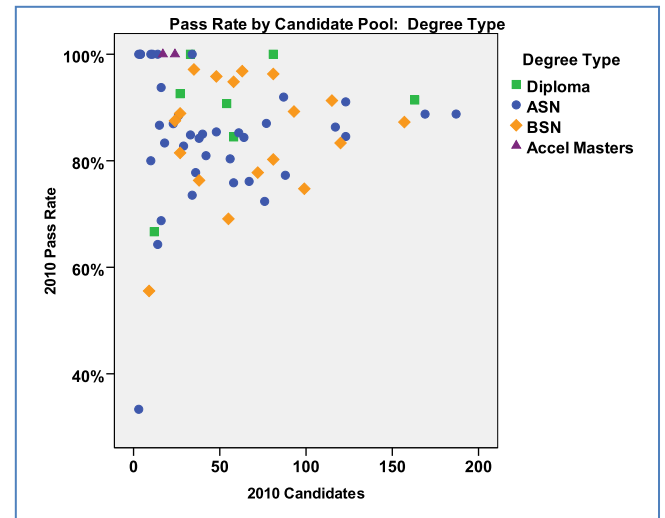
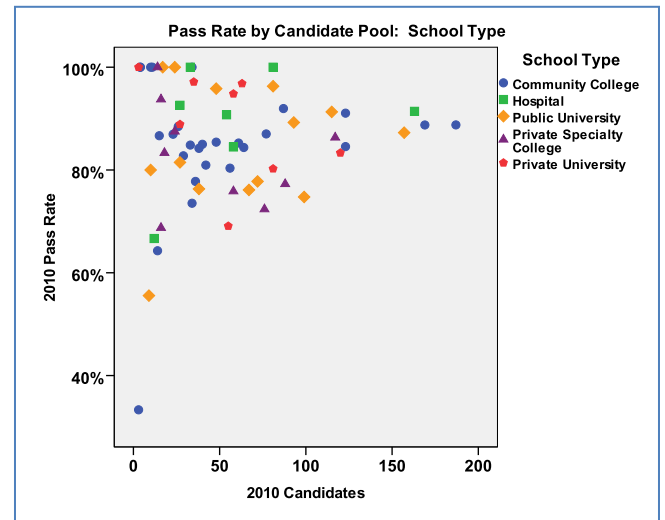
determined without resorting to separate weighted and unweighted tests. No statistically significant difference in NCLEX pass rates by school type or by size of program was found (See Appendix). When controlled for candidate pool and school size, pass rates by degree type did differ to a statistically significant degree. However, this was mainly due to both Accelerated Masters programs achieving a 100 percent pass rate.

<sup>10</sup> Pass rates in these programs also vary widely.

Pass rates again converge near the average pass rate for all programs as the size of the candidate pool increases, particularly as it surpasses 100 candidates. Unlike LPNs, however, there is no discernable pattern in candidate pool size. A variety of school types and degree types created large candidate pools in 2010.

## DISCUSSION OF THE RESULTS

The data demonstrate that, as measured by NCLEX pass rates, there is wide variation in program quality among all LPN and RN school types. All school types include both high and low performing programs. Considering the wide variation, school type alone likely does not explain much of the variation in pass rates. The size of the candidate pool, for instance, may influence the statistical results in these tests. Other factors not explored here may also have a strong influence on pass rates. Statistical tests that control for the size of the candidate pool and degree type revealed no statistically significant differences among NCLEX pass rates by RN school type. Likewise, no statistically significant difference was identified among degree types with the exception of the two Masters degree programs.



## Appendix: RN Test Results

### ONE-WAY BETWEEN GROUPS ANALYSIS OF VARIANCE (ANOVA)

Degree Type:

#### ANOVA

Rate2010

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.058	3	.019	1.363	.263
Within Groups	.866	61	.014		
Total	.924	64			

School Type

#### ANOVA

Rate2010

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.028	4	.007	.471	.757
Within Groups	.896	60	.015		
Total	.924	64			



## PARTIAL CORRELATION

\*CAND2010 is not normally distributed. It has a Kolmogorov-Smirnov Z of 1.117 with a 2-tailed significance of 0.165 when compared to a normal distribution.

### Correlations

Control Variables			Rate2010	Cand2010
DegBin & SchType	Rate2010	Correlation	1.000	.076
		Significance (2-tailed)	.	.551
		Df	0	61
	Cand2010	Correlation	.076	1.000
		Significance (2-tailed)	.551	.
		Df	61	0

## TWO-WAY BETWEEN GROUPS ANOVA

Unweighted:

### Tests of Between-Subjects Effects

Dependent Variable:Rate2010

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.105 <sup>a</sup>	8	.013	.897	.525
Intercept	17.541	1	17.541	1198.990	.000
SchType	.041	3	.014	.931	.432
DegBin	.062	2	.031	2.136	.128
SchType * DegBin	.020	2	.010	.691	.505
Error	.819	56	.015		
Total	48.477	65			
Corrected Total	.924	64			

a. R Squared = .114 (Adjusted R Squared = -.013)

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable:Rate2010

F	df1	df2	Sig.
.572	8	56	.796

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + SchType + DegBin + SchType \* DegBin

Weighted by Candidates:

\*Homogeneity of variance assumption violated

Tests of Between-Subjects Effects<sup>b</sup>

Dependent Variable:Rate2010

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4.526 <sup>a</sup>	8	.566	1.853	.086
Intercept	218.479	1	218.479	715.796	.000
SchType	1.175	3	.392	1.284	.289
DegBin	1.254	2	.627	2.054	.138
SchType * DegBin	.159	2	.079	.260	.772
Error	17.093	56	.305		
Total	2659.521	65			
Corrected Total	21.618	64			

a. R Squared = .209 (Adjusted R Squared = .096)

b. Weighted Least Squares Regression - Weighted by Cand2010

Levene's Test of Equality of Error Variances<sup>a,b</sup>

Dependent Variable:Rate2010

F	df1	df2	Sig.
2.932	8	56	.008

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + SchType + DegBin + SchType \* DegBin

b. Weighted Least Squares Regression - Weighted by Cand2010

## ANALYSIS OF COVARIANCE

\*There is no discernable relationship between candidate size and pass rate to confirm the linearity assumption

Tests of Between-Subjects Effects

Dependent Variable:Rate2010

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.121 <sup>a</sup>	9	.013	.923	.513
Intercept	12.464	1	12.464	853.690	.000
Cand2010	.016	1	.016	1.112	.296
SchType	.046	3	.015	1.040	.382
DegBin	.071	2	.036	2.443	.096
SchType * DegBin	.025	2	.012	.840	.437
Error	.803	55	.015		
Total	48.477	65			
Corrected Total	.924	64			

a. R Squared = .131 (Adjusted R Squared = -.011)

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable:Rate2010

F	df1	df2	Sig.
.536	8	56	.825

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Cand2010 + SchType + DegBin + SchType \* DegBin

### Pairwise Comparisons

Dependent Variable:Rate2010

(I) Degree Simplified	(J) Degree Simplified	Mean Difference (I-J)	Std. Error	Sig. <sup>c</sup>	95% Confidence Interval for Difference <sup>c</sup>	
					Lower Bound	Upper Bound
Diploma	ASN	.021 <sup>a,b</sup>	.061	.728	-.100	.143
	BSN	.034 <sup>a,b</sup>	.064	.602	-.095	.162
	Accel Masters	-.121 <sup>a,b</sup>	.098	.221	-.318	.075
ASN	Diploma	-.021 <sup>a,b</sup>	.061	.728	-.143	.100
	BSN	.012 <sup>a,b</sup>	.060	.836	-.107	.132
	Accel Masters	-.143 <sup>a,b</sup>	.094	.135	-.331	.046
BSN	Diploma	-.034 <sup>a,b</sup>	.064	.602	-.162	.095
	ASN	-.012 <sup>a,b</sup>	.060	.836	-.132	.107
	Accel Masters	-.155 <sup>a,b</sup>	.097	.117	-.350	.040
Accel Masters	Diploma	.121 <sup>a,b</sup>	.098	.221	-.075	.318
	ASN	.143 <sup>a,b</sup>	.094	.135	-.046	.331
	BSN	.155 <sup>a,b</sup>	.097	.117	-.040	.350

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. An estimate of the modified population marginal mean (J).

c. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).