



NBCRNA Annual Report:
Summary of 2011 NCE / SEE
Performance and Transcript Data

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1. Introduction

The National Board of Certification and Recertification for Nurse Anesthetists (NBCRNA) implemented computerized testing for its examinations beginning in April 1996. The NBCRNA administers two adaptive tests: the National Certification Examination (NCE) and the Self Evaluation Examination (SEE). This report presents a summary of information on students' performance on the NCE and the SEE in 2011.

For the NCE performance (Sections 2 and 3), pass/fail outcomes are summarized by gender, age, clinical background, and type of graduate degree. Section 4 of the report provides an analysis of test takers' responses on a satisfaction survey administered at the end of the NCE. The survey asks questions pertaining to test takers' opinions about their registration and test experience. Section 5 contains descriptive statistics (mean, standard deviation, etc.) summarizing the number of cases performed in various clinical areas by 2011 nurse anesthesia program graduates.

Section 6 contains summaries of SEE scaled scores broken down by gender, age, clinical background, type of graduate degree, and year in program.

2. Test Taker Performance on the NCE

Table 1 summarizes NCE performance for 2011 examinees. Table 1 shows pass rates for 2011 examinees, divided by first-time test takers and repeat test takers. Note that the pass rate depreciates for repeat examinees. First-time examinee pass rates for the NCE can be found in Table A1 in the Appendix of this report. Also, summaries of NCE total scores and subscores can be found in Table A2 of the Appendix.

TABLE 1 PASS/FAIL SUMMARY FOR 2011 NCE TEST TAKERS			
1ST TIME TAKERS		FREQUENCY	PERCENT
	PASS	2214	89.1%
	FAIL	272	10.9%
	TOTAL	2486	100.0%
REPEAT TAKERS			
	PASS	243	57.2%
	FAIL	182	42.8%
	TOTAL	425	100.0%

Table 2 shows the distribution of test length and pass/fail status. Only 1st time examinees are included in Table 2. The majority of test takers (66.3%) passed the test in 70 items (not including the 30 unscored pretest items). Only 3.1 percent of NCE test takers failed the test at 70 items. Approximately 14.3 percent of the test takers took the maximum test length of 140 items.

TABLE 2 PASS/FAIL SUMMARY BY TEST LENGTH FOR 2011 NCE TEST TAKERS		
	FREQUENCY	PERCENT
PASS IN 70 ITEMS	1648	66.3%
PASS IN 71 TO 139 ITEMS	336	13.5%
PASS IN 140 ITEMS	230	9.3%
FAIL IN 70 ITEMS	78	3.1%
FAIL IN 71 TO 139 ITEMS	71	2.9%
FAIL IN 140 ITEMS	123	5.0%
TOTAL	2486	100.0%

3. Demographic Characteristics of 2011 NCE Test Taker Population

Tables 3 through 6 summarize 2011 pass rates on the NCE by gender, age, clinical background, and degree earned. Only 1st time examinees are included in these tables. Table 3 illustrates that approximately 63.9% of the NCE test takers in 2011 were female, 36.1% male. The pass rates between males and females were essentially equal. Table 4 displays the pass rate by age group and demonstrates that the pass rate decreased as examinee age increased. The average age of the 2011 NCE examinees was just under 34 years old.

TABLE 3 GENDER OF 2011 NCE TEST TAKERS						
GENDER	PASS		FAIL		TOTAL	
	N	PERCENT	N	PERCENT	N	PERCENT
FEMALE	1409	88.7%	179	11.3%	1588	100.0%
MALE	805	89.6%	93	10.3%	898	100.0%
TOTAL	2214	89.1%	272	10.9%	2486	100.0%

TABLE 4 AGE OF 2011 NCE TEST TAKERS						
AGE	PASS		FAIL		TOTAL	
	N	PERCENT	N	PERCENT	N	PERCENT
UNDER 30	816	94.1%	51	5.9%	867	100.0%
30-35	796	90.2%	86	9.8%	882	100.0%
36-39	320	85.8%	53	14.2%	373	100.0%
40 OR MORE	282	77.5%	82	22.5%	364	100.0%
TOTAL	2214	89.1%	272	10.9%	2486	100.0%

Table 5 displays pass rates by clinical background. The clinical setting most represented was critical care (87.7%).

TABLE 5 CLINICAL BACKGROUND OF 2011 NCE TEST TAKERS						
CLINICAL BACKGROUND	PASS		FAIL		TOTAL	
	N	PERCENT	N	PERCENT	N	PERCENT
Critical Care	1952	89.6%	226	10.4%	2178	100.0%
NICU/PICU	99	92.5%	8	7.5%	107	100.0%
PACU	47	82.5%	10	17.5%	57	100.0%
Operating Room	115	81.0%	27	19.0%	142	100.0%
ER	0	0.0%	1	100.0%	1	100.0%
Other	1	100.0%	0	0.0%	1	100.0%
TOTAL	2214	89.1%	272	10.9%	2486	100.0%

Table 6 displays pass rates by degree attained. Over half (52.4%) of the 2011 NCE examinees attained the MSN degree. Pass rate comparisons between different clinical settings (Table 5) and degree (Table 6) should be made with caution because some demographic subgroups feature small sample sizes.

TABLE 6 TYPES OF GRADUATE DEGREE OF 2011 NCE TEST TAKERS						
DEGREE UPON COMPLETION	PASS		FAIL		TOTAL	
	N	PERCENT	N	PERCENT	N	PERCENT
MS Nursing Major	1175	90.3%	126	9.7%	1301	100.0%
MS Nurse Anesthesia	861	89.6%	100	10.4%	961	100.0%
Other Masters	138	83.6%	27	16.4%	165	100.0%
Doctoral	11	47.8%	12	52.2%	23	100.0%
Post Masters Certificate	29	80.6%	7	19.4%	36	100.0%
Total	2214	89.1%	272	10.9%	2486	100.0%

4. Descriptive Information on Number of Anesthesia Cases

The following tables summarize the data collected about the number of anesthesia cases performed in clinical areas, as reported on the official NBCRNA transcript forms submitted by program directors for their students completing nurse anesthesia programs in 2011. Tables 7-17 summarize the student frequency distributions of anesthesia cases for each specific area. The organization of the tables reflects the headings and subheadings in the record of clinical experience section of the official NBCRNA student transcripts (see the "Record of Clinical Experience" in the Appendix).

The same columns are replicated in Tables 7-17:

- The first column contains the clinical area in which cases were performed.
- The **Number (N)** column represents the number of transcripts submitted in 2011.
- The **Total Number of Cases** column indicates the minimum number of cases that must be completed by any applicant in order to be deemed eligible to take the NCE. If, within a given clinical area, cases were not *required*, but rather *preferred*, the suggested number of cases is indicated in brackets ([]). If a minimum number of cases is neither required nor preferred, a "0" is entered in this column. Please refer to the Appendix for a copy of the "Record of Clinical Experience," which documents the required number of cases in each clinical area.
- The **Minimum (Min)** column indicates the smallest number of cases reported on the 2011 transcripts.
- The **Mean** column indicates the average number of cases reported on the 2011 transcripts.
- The **Median** column indicates the median number of cases (50th percentile) reported on 2011 transcripts. Half of the 2011 transcripts contained values higher than this number, and half contained a value below this number.
- The **SD** column indicates the standard deviation in the number of cases reported on the 2011 transcripts.

TABLE 7
SECTIONS I, II & III: TOTAL NUMBER OF CASES, HOURS OF ANESTHESIA, CLINICAL HOURS

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Total Number of Cases	2440	550	845.7	155.1	822	550
Total Hours of Anesthesia	2440	---	1683.0	393.2	1631.5	863
Total Clinical Hours	2440	---	2518.6	552.9	2483.5	869

TABLE 8
SECTION IV: PATIENT PHYSICAL STATUS

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Class I	2440	0	105.4	48.5	98	7
Class II	2440	0	400.2	105.2	381	153
Class III & IV	2440	100	340.0	95.4	332	103
Class V	2440	[5]	3.3	4.2	2	0

TABLE 9
SECTION V: SPECIAL CASES

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Geriatric, 65+ years	2440	50	206.6	78.5	194	52
Pediatric, 2-12 years	2440	25	75.3	37.4	68	25
Pediatric, under 2 years	2440	10	26.0	17.1	22	10
Neonatal, under 4 weeks	2440	[5]	2.2	2.7	1	0
Trauma/Emergency	2440	30	59.9	27.9	53	30
Ambulatory/Outpatient	2440	100	399.1	156.5	375	100
Obstetrical Mgmt.	2440	30	77.4	50.3	65	30
Obstetrics, C Section	2440	10	34.8	20.2	30	10
Obstetrics, Analgesia for Labor	2440	10	43.3	35.7	34	10

TABLE 10
SECTION VI: POSITION CATEGORIES

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Prone	2440	20	52.6	28.4	47	20
Lithotomy	2440	25	89.0	33.2	84	25
Lateral	2440	5	72.5	49.4	61	10
Sitting	2440	5	25.3	22.0	18	5

TABLE 11
SECTION VII: ANATOMICAL CATEGORIES

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Intra-abdominal	2440	75	186.9	64.7	174	75
Extrathoracic	2440	15	37.3	19.0	33	15
Extremities	2440	50	170.1	61.9	160	53
Perineal	2440	15	98.3	46.8	90	17
Head, Extracranial	2440	15	66.6	32.2	60	15
Head, Intracranial	2440	5	14.4	8.9	13	5
Head, Oropharyngeal	2440	20	81.3	43.5	73	20
Intrathoracic	2440	15	35.2	15.3	32	15
Heart	2440	5	18.2	10.9	16	5
Lung	2440	5	11.0	5.6	10	5
Intrathoracic, Other	2440	0	5.9	6.5	4	0
Neck	2440	5	23.1	10.4	22	5
Neuroskeletal	2440	20	44.6	22.5	39	20
Vascular	2440	10	37.5	18.4	34	10
Other	2440	0	37.1	50.8	20	0

TABLE 12
SECTION VIII: PHARMACOLOGICAL AGENTS

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Inhalation Agents	2440	200	607.7	147.4	587	231
Intravenous Induction Agents	2440	200	666.0	177.2	643	205
Intravenous Agents, Muscle Relaxants	2440	200	459.5	127.0	435	205
Intravenous Agents, Opioids	2440	200	719.3	162.4	705	217

TABLE 13
SECTION IX: METHODS OF ANESTHESIA

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
General Anesthesia	2440	350	601.6	126.4	586.5	351
Intravenous Induction	2440	200	503.6	124.9	489	205
Inhalation Induction	2440	10	94.9	55.9	85	14
Mask Management	2440	25	76.7	94.4	47	25
LMA	2440	25	107.6	51.1	99	25
Tracheal Intubation/Oral	2440	200	392.2	88.6	384	202
Tracheal Intubation/Nasal	2440	[10]	15.2	14.3	13	0
Total Intravenous Anesthesia	2440	10	49.6	56.6	30	10
Emergence from Anesthesia	2440	200	562.6	139.8	546	200
Monitored Anesthesia Care	2440	25	140.1	81.6	122	25
Regional/Management	2440	30	117.0	62.0	108	30
Administration ¹	2440	25	105.4	68.5	90	25
Spinal	2440	[50]	41.5	24.5	36	1
Epidural	2440	[50]	39.5	28.8	34	1
Peripheral	2440	[40]	23.8	30.0	14	1

¹ Experience required in each category.

TABLE 14
SECTION X: ARTERIAL TECHNIQUE

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Arterial Puncture/Catheter Insertion	2440	25	57.2	27.6	50	25
Intra-arterial Blood Pressure Monitoring	2440	25	78.6	31.3	73	25

TABLE 15
SECTION XI: CENTRAL VENOUS CATHETER PRESSURE

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Placement	2440	5	14.1	11.3	11	5
Monitoring	2440	15	29.6	14.9	26	15

TABLE 16
SECTION XII: PULMONARY ARTERY CATHETER

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Placement	2440	[5]	6.7	7.8	5	0
Monitoring	2440	[10]	15.2	10.0	13	0

TABLE 17
SECTION XIII: OTHER

Area	N	Required Number of Cases	Mean	Standard Deviation	Median	Minimum
Intravenous Catheter Placement	2440	100	235.5	142.4	193	100
Mechanical Ventilation	2440	200	459.6	109.7	452	200
Pain Management	2440	[10]	23.2	55.6	7	0
Alternative Airway Management/Total	2440	10	47.4	37.1	40	10
Fiberoptic Total	2440	5	19.7	15.4	16	5
Alternative Airway Mgmt. Techniques: Other	2440	5	27.7	32.4	22	5

5. Exit Survey Results

As part of NBCRNA's ongoing evaluation of the testing process, test takers are asked to complete a post-examination survey regarding their test experience. The post-examination survey consists of the following:

- Seven statements related to pre-examination activities such as registration and scheduling, locating the testing center and interaction with test center staff.
- Nine statements related to examination experience such as readability, fairness of test questions, and use of testing software.
- Four statements related to examinee perception of the Alternative Question Formats, which have been featured on the NCE since August, 2009.
- Three statements related to exam preparation.

The majority of the survey questions involved a Likert-type rating scale which requires the respondents to indicate their level of agreement with the statement. The survey questions and format were developed by NBCRNA and representatives from its testing agency, Pearson VUE, Inc. Completion of the survey is not required as part of the examination process and is not part of the three-hour time limit. Respondents do not always answer all of the questions on the survey, as reflected by the unequal sample size across questions.

Responses to the survey questions were analyzed based on a sample of NCE test takers who were administered the exit survey during the period of January 1, 2011 through December 31, 2011. Following each test administration, the test taker could also contact the NBCRNA office to address any problems or concerns related to the NCE.

The first seven statements pertain to pre-examination scheduling and registration activities. About 87% of 2011 NCE examinees indicated that they scheduled their examination on the web. The responses to the other six survey questions are summarized in Table 18.

**TABLE 18
SUMMARY OF RESPONSES TO SURVEY QUESTIONS
SCHEDULING AND REGISTRATION**

		COUNT	PERCENT
I WAS ABLE TO SCHEDULE AN ACCEPTABLE TEST DATE.			
	AGREE	711	94.7%
	DISAGREE	40	5.3%
I WAS ABLE TO SCHEDULE AN ACCEPTABLE TEST CENTER LOCATION.			
	AGREE	713	95.2%
	DISAGREE	36	4.8%
THE EXAM RESERVATION PROCESS WAS EASY TO USE.			
	AGREE	741	98.8%
	DISAGREE	9	1.2%
THE TEST CENTER WAS EASY TO LOCATE.			
	AGREE	741	98.9%
	DISAGREE	8	1.1%
THE TEST CENTER STAFF WAS HELPFUL AND KNOWLEDGEABLE.			
	AGREE	748	99.7%
	DISAGREE	2	0.3%
THE TESTING CENTER REGISTRATION/CHECK-IN PROCESS WAS HANDLED IN A PROFESSIONAL AND EFFICIENT MANNER.			
	AGREE	746	98.8%
	DISAGREE	5	1.2%

The next nine statements relate to mid-administration issues, such as question fairness and readability of the examination. Table 19 summarizes the responses to these survey questions. Overall (98.9% agreement), the 2011 NCE examinees were satisfied with their testing experience.

TABLE 19 SUMMARY OF RESPONSES TO SURVEY QUESTIONS: MID-EXAMINATION			
		COUNT	PERCENT
I THOUGHT THE EXAMINATION QUESTIONS WERE FAIR.			
	AGREE	1867	83.6%
	DISAGREE	366	16.4%
THE GRAPHS AND DIAGRAMS WERE EASY TO READ.			
	AGREE	2069	93.4%
	DISAGREE	146	6.6%
THE GRAPHS, FIGURES AND DIAGRAMS IN THE QUESTIONS FIT ONTO THE SCREEN.			
	AGREE	1966	90.1%
	DISAGREE	217	9.9%
I WAS ABLE TO "SCROLL" IN ORDER TO VIEW AN ENTIRE GRAPH OR FIGURE IN A QUESTION.			
	AGREE	2175	98.6%
	DISAGREE	31	1.4%
THE AREAS OF THE CONTENT OUTLINE WERE FAIRLY REPRESENTED.			
	AGREE	2019	90.2%
	DISAGREE	220	9.8%
MY TESTING ENVIRONMENT WAS CLEAN, QUIET AND COMFORTABLE.			
	AGREE	741	98.8%
	DISAGREE	9	1.2%
I ENCOUNTERED NO TECHNICAL PROBLEMS WITH THE TEST ADMINISTRATION SOFTWARE.			
	AGREE	730	97.2%
	DISAGREE	21	2.8%
THE TEST ADMINISTRATION SOFTWARE WAS USER-FRIENDLY			
	AGREE	750	99.9%
	DISAGREE	1	0.1%
OVERALL, I WAS SATISFIED WITH MY TEST EXPERIENCE			
	AGREE	740	98.9%
	DISAGREE	8	1.1%

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Since August 2009, the NBCRNA has administered alternative question formats (AQF) on the NCE. These question formats included multiple correct response (MCRs; where the examinee is asked to select an indicated number of correct responses), short answer / calculation (SA; where the examinee types in a short, numerical response), and drag and drop (used for matching or ordering questions). Beginning in 2011, a random sample (N=2,260) of examinees was given the opportunity to record their feedback on these question formats. Table 20 summarizes the responses to four survey questions relating to the MCR, SA, and Drag and Drop question formats.

TABLE 20			
SUMMARY OF RESPONSES TO SURVEY QUESTIONS: ALTERNATIVE QUESTION FORMATS			
		COUNT	PERCENT
THE QUESTIONS IN THE MULTIPLE CORRECT RESPONSE (MCR) FORMAT WERE FAIR.			
	AGREE	1951	87.5%
	DISAGREE	278	12.5%
THE QUESTIONS IN THE SHORT ANSWER / CALCULATION FORMAT WERE FAIR.			
	AGREE	2010	90.3%
	DISAGREE	216	9.7%
THE QUESTIONS IN THE DRAG AND DROP FORMAT WERE FAIR.			
	AGREE	2098	94.2%
	DISAGREE	129	5.8%
I UNDERSTOOD HOW TO RESPOND TO THE QUESTIONS IN THE AQF FORMATS.			
	AGREE	2191	98.4%
	DISAGREE	35	1.6%
I NEEDED HELP FIGURING OUT HOW TO RESPOND TO THE QUESTIONS IN THE AQF FORMATS.			
	AGREE	628	28.2%
	DISAGREE	1596	71.8%

The final three statements of the exit survey, asking about exam preparation, are summarized in Table 21. Of the 2011 NCE examinees, 53.9% stated the SEE helped prepare them for the NCE. A small portion (9.2%) of the 2011 sample indicated that they did not take the SEE. The majority (92.9%) attended a review course while only 7.1% did not. Finally, about two-thirds of the sample of examinees reported that their nurse anesthesia educational program featured the use of computerized testing.

TABLE 21 SUMMARY OF RESPONSES TO SURVEY QUESTIONS: EXAM PREPARATION			
		COUNT	PERCENT
TAKING THE SEE HELPED PREPARE ME TO TAKE THE NCE.			
	AGREE	1192	53.9%
	DISAGREE	818	37.0%
	DID NOT TAKE SEE	203	9.2%
IF YOU TOOK A REVIEW COURSE IN PREPARATION FOR THIS EXAMINATION, PLEASE INDICATE BELOW WHICH REVIEW COURSE YOU TOOK.			
	VALLEY ANESTHESIA	1601	72.0%
	CORE CONCEPTS	121	5.4%
	HOWARD REVIEW	2	0.1%
	R&R BOARD REVIEW	15	0.7%
	PRODIGY ANESTHESIA	224	10.1%
	CRNA SECRETS	6	0.3%
	AANA ANNUAL MTG.	4	0.2%
	OTHER COMMERCIAL	52	2.3%
	CRNA PROGRAM	41	1.8%
	DID NOT TAKE	159	7.1%
PLEASE INDICATE BELOW IF YOUR NURSE ANESTHESIA EDUCATIONAL PROGRAM FEATURED ANY ACADEMIC TESTS USING COMPUTER BASED TESTING.			
	YES	1490	66.9%
	NO	738	33.1%

6. Demographic Characteristics of 2011 SEE Test Taker Population

The following tables summarize 2011 performance on the SEE by gender, age, clinical background, and degree. Within each demographic, the scores are also broken down by year in program. The mean total score for Year 2 examinees (402) was higher than the mean total score for Year 1 examinees (385). Also, summaries of SEE total scores and subscores can be found in Table A3 of the Appendix.

Table 22 summarizes SEE scores by gender: 37% of SEE examinees were male, 63% female. In general, males scored slightly higher on the exam.

TABLE 22			
2011 SEE TEST TAKER PERFORMANCE BY GENDER AND YEAR IN PROGRAM			
YEAR 1			
GENDER	COUNT	MEAN	STANDARD DEVIATION
FEMALE	204	377	36
MALE	120	390	42
TOTAL	324	382	39
YEAR 2			
FEMALE	1864	395	43
MALE	1081	407	42
TOTAL	2945	399	43
TOTAL			
FEMALE	2068	393	42
MALE	1201	405	42
TOTAL	3269	397	43

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Table 23 summarizes SEE scores by age group. The average age of Year 1 SEE examinees was 31.2 years (about the same, on average, as Year 1 examinees in 2011). The average age of Year 2 SEE examinees was 32.5 years. The mean age of all 2011 SEE examinees was 32.3 years, on average about a ½ year younger than the sample of first-time NCE examinees in 2011. The largest subgroup (by age) was composed of examinees under the age of 30 (40.6%). Examinees between the ages of 30 and 35 comprised a slightly smaller subgroup (33.1%). There was a higher prevalence of under-30 examinees in Year 1 (49.3%) than Year 2 (39.6%). In general, younger examinees tended to score higher on the SEE than older examinees.

TABLE 23			
2011 SEE TEST TAKER PERFORMANCE BY AGE AND YEAR IN PROGRAM			
YEAR 1			
AGE	COUNT	MEAN	STANDARD DEVIATION
UNDER 30	160	384	40
30-35	99	381	41
36-39	38	379	30
40 AND OVER	27	376	33
TOTAL	324	382	39
YEAR 2			
UNDER 30	1166	404	43
30-35	985	399	43
36-39	404	396	41
40 AND OVER	390	390	42
TOTAL	2945	399	43
TOTAL			
UNDER 30	1326	401	43
30-35	1084	397	43
36-39	442	394	40
40 AND OVER	417	389	42
TOTAL	3269	397	43

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Table 24 displays the summaries of SEE scores by clinical background. The clinical setting most represented was critical care (86.7%).

TABLE 24			
2011 SEE TEST TAKER PERFORMANCE BY CLINICAL BACKGROUND AND YEAR IN PROGRAM			
YEAR 1			
CLINICAL BACKGROUND	COUNT	MEAN	STANDARD DEVIATION
Critical Care	284	383	39
NICU/PICU	14	357	40
Operating Room	14	380	21
PACU	12	372	45
TOTAL	324	382	39
YEAR 2			
Critical Care	2550	400	43
NICU/PICU	146	398	45
PACU	65	402	44
ER	5	388	32
OR	177	389	40
Other	2	402	52
TOTAL	2945	399	43
TOTAL			
Critical Care	2834	398	43
NICU/PICU	160	394	46
PACU	77	398	45
ER	5	388	32
OR	191	388	39
Other	2	402	52
TOTAL	3269	397	43

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Tables 25 displays summaries of SEE scores by degree to be attained. Over half (55.0%) of the 2011 SEE examinees were enrolled in the MSN degree programs. A small but growing number of SEE examinees (74) were students coming out of Doctorate-level programs. This number represents 2.3% of the entire 2011 SEE testing population. Score comparisons made among groups represented in these tables should be made with caution because some of the subgroups reflect small sample sizes.

**TABLE 25
2011 SEE TEST TAKER PERFORMANCE BY TYPE OF GRADUATE DEGREE AND YEAR IN PROGRAM
YEAR 1**

DEGREE UPON COMPLETION	COUNT	MEAN	STANDARD DEVIATION
MS Nursing Major	266	380	40
MS Nurse Anesthesia	52	392	35
Other Masters	2	378	25
Doctoral	4	364	15
TOTAL	324	382	39

YEAR 2

MS Nursing Major	1532	401	43
MS Nurse Anesthesia	1044	402	41
Other Masters	270	392	49
Post Masters Certificate	29	385	39
Doctoral	70	365	36
TOTAL	2945	399	43

TOTAL

MS Nursing Major	1798	398	43
MS Nurse Anesthesia	1096	401	41
Other Masters	272	392	49
Post Masters Certificate	29	385	39
Doctoral	74	365	35
TOTAL	3269	397	43

7. Study of SEE Performance: Front-Loaded vs. Integrated Programs

The NBCRNA frequently receives requests from program directors to provide interpretive information for Self-Evaluation Examination (SEE) scores, divided by programs with front-loaded vs. integrated curricula. Some directors of “integrated” programs assert that their 2nd year students’ SEE scores should be compared with 1st year students rather than with 2nd year students as a more appropriate comparison based on the amount of didactic instruction the students have received. In order to evaluate this question, the NBCRNA performed an analysis of SEE scores of students from both types of programs. As seen in Figure 1, the distributions of total SEE scores for front-loaded vs. integrated programs are virtually mirror-images of one another and reflects no difference between SEE performance based on the configuration of the curriculum

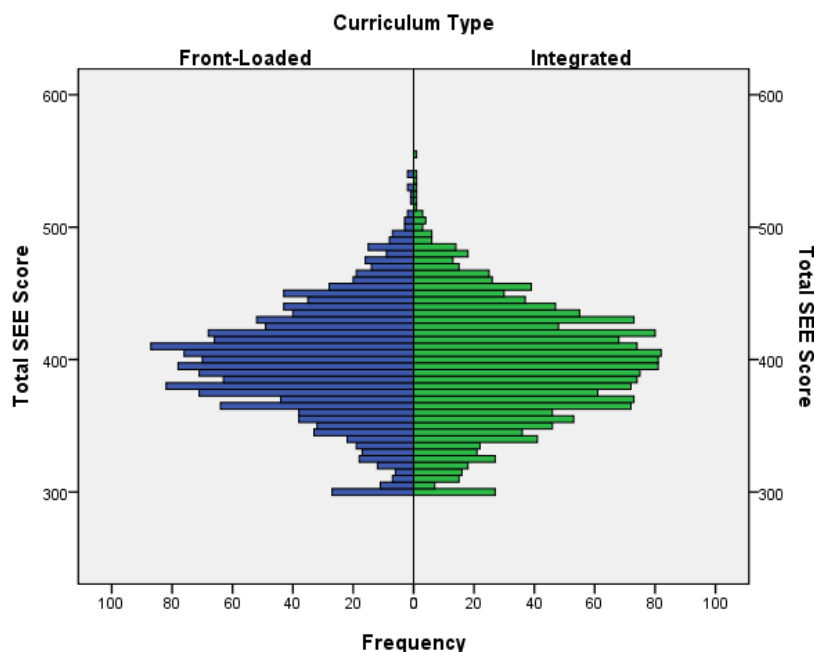


Figure 1. Total SEE Score Distributions, by Curriculum Type

Further, if we evaluate the means and standard deviations (Table 1) of all of the sub-domain scores of the SEE, we see virtually identical statistical properties. With the exception of the scores in the Anatomy, Physiology & Pathophysiology subdomain, the score distributions are all statistically equivalent. Thus, there is virtually no statistical evidence to support the dividing of SEE comparative data by curriculum type.

Table 30. Summary of SEE subdomain scores, by curriculum type

	Curriculum Type	N	Mean	Std. Deviation
Total SEE Score	Front-Loaded	1532	399	42
	Integrated	1737	397	43
Professional and Legal Aspects	Front-Loaded	1532	406	65
	Integrated	1737	404	62
Anatomy, Phys. & Pathophys.	Front-Loaded	1532	402	55
	Integrated	1737	397	57
Pharmacology	Front-Loaded	1532	403	57
	Integrated	1737	403	59
Basic Principles	Front-Loaded	1532	403	62
	Integrated	1737	403	64
Advanced Principles	Front-Loaded	1532	401	56
	Integrated	1737	402	57

Appendix

TABLE A1 FIVE-YEAR NCE PASS RATE TRENDS- FIRST TIME NCE TAKERS 2007 – 2011	
ADMINISTRATION DATE(S)	PERCENT PASS
2007	93.1
2008 (graduates 2007-2008) ²	89.9
2009 (graduates after 2008)	87.7
2010	88.9
2011	89.1

TABLE A2 DESCRIPTIVE STATISTICS – 2011 NCE SCORES - FIRST TIME NCE TAKERS		
	AVERAGE	SD
Total Score	501.6	43.5
Basic Sciences	508.4	64.7
Equipment, Instrumentation & Technology	515.1	88.6
Basic Principles	506.1	53.7
Advanced Principles	500.8	53.8
Professional Issues	502.6	109.4

TABLE A3 DESCRIPTIVE STATISTICS – 2011 SEE SCORES ³						
	1 ST YEAR IN PROGRAM		2 ND YEAR IN PROGRAM		ALL	
	AVERAGE	SD	AVERAGE	SD	AVERAGE	SD
Total Score	381.7	38.7	399.2	43.0	397.5	42.9
Professional & Legal Aspects	389.4	65.4	406.6	63.1	404.9	63.6
Anatomy, Physiology & Pathophysiology	383.8	52.5	401.2	56.3	399.5	56.2
Pharmacology	388.1	53.6	404.9	58.0	403.3	57.8
Basic Principles	392.5	57.6	404.3	63.4	403.1	62.9
Advanced Principles	382.6	51.2	403.5	56.6	401.5	56.5

² The policy limiting the time frame for passing the National Certification Examination (NCE) to 2 years following completion of a nurse anesthesia educational program was implemented. This was the last opportunity for a number of first time candidates who had completed programs prior to 2007, but who had never tested, to take the NCE. The reporting data for those few first time takers was separately identified.

³ For more information on SEE comparative data, please see the SEE Interpretive Guides under Certification Resources www.nbcna.com.

Record of Clinical Experience

Codes: () = Minimum Required Cases [] = Preferred Number of Cases

Review the academic and clinical experience records to make sure that all information and numbers are accurate. The minimum didactic and clinical requirements must be met or the candidate will not be eligible to write the Certification Examination.

Candidate Name: _____ AANA # _____ Program Code # _____

	Number		Number
I. Total Number of Anesthesia Cases	(550)	IX. Methods of Anesthesia	XX
II. Total Hours of Anesthesia Time		A. General anesthesia	(350)
III. Total Clinical Hours		B. Induction, maintenance, emergence	XX
IV. Patient Physical Status	XX	1. Intravenous induction	(200)
A. Class I		2. Inhalation induction	[25] (10)
B. Class II		3. Mask management	[40] (25)
C. Class III & IV	(100)	4. Laryngeal mask airways	[40] (25)
D. Class V	[5]	(or similar devices)	XX
V. Special Cases	XX	5. Tracheal intubation	XX
A. Geriatric 65+ years	[100] (50)	a. Oral	(200)
B. Pediatric	XX	b. Nasal	[10]
a. 2-12 years	[75] (25)	6. Total intravenous anesthesia	[25] (10)
b. under 2 years	[25] (10)	7. Emergence from anesthesia	(200)
c. Neonate (under 4 weeks)	[5]	C. Monitored anesthesia care	[50] (25)
C. Trauma/Emergency	[50] (30)	D. Regional techniques	XX
D. Ambulatory/Outpatient	(100)	1. Management	(30)
E. Obstetrical Management	[40] (30)	2. Administration (Total of a, b, c)	(25)
1. Caesarean delivery	[15] (10)	a. Spinal	[50]
2. Analgesia for labor	[15] (10)	b. Epidural	[50]
VI. Position Categories	XX	c. Peripheral	[40]
A. Prone	(20)	X. Arterial Technique	XX
B. Lithotomy	(25)	A. Arterial puncture/catheter insertion	(25)
C. Lateral	(5)	B. Intra-arterial blood pressure monitoring	(25)
D. Sitting	(5)	XI. Central Venous Pressure Catheter	XX
VII. Anatomical Categories	XX	A. Placement (Total of a, b)	[10] (5)
A. Intra-abdominal	(75)	a. Actual	
B. Extrathoracic	(15)	b. Simulated	
C. Extremities	(50)	B. Monitoring	(15)
D. Perineal	(15)	XII. Pulmonary Artery Catheter	XX
E. Head	XX	A. Placement	[5]
1. Extracranial	(15)	B. Monitoring	[10]
2. Intracranial	[20] (5)	XIII. Other	XX
3. Oropharyngeal	(20)	A. Intravenous catheter placement	(100)
F. Intrathoracic	[40] (15)	B. Mechanical ventilation	(200)
1. Heart	[10] (5)	C. ACLS – Provide expiration date: month _____ year _____	
2. Lung	(5)	D. PALS – Provide expiration date: month _____ year _____	
3. Other		E. Pain management (acute/chronic) [10 cases]	
G. Neck	[10] (5)	F. Alternative airway management techniques	XX
H. Neuroskeletal	(20)	(Total of 1, 2)	[40] (10)
I. Vascular	[20] (10)	1. Fiberoptic techniques	XX
J. Other		(Total of a, b, c)	[15] (5)
VIII. Pharmacological Agents	XX	a. Actual placement	
A. Inhalation agents	(200)	b. Simulated placement	
B. Intravenous induction agents	(200)	c. Airway assessment	
C. Intravenous agents – muscle relaxants	(200)	2. Other techniques	[25] (5)
D. Intravenous agents – opioids	(200)		