

NBCR NA Annual Report: Summary of 2010 NCE / SEE Performance and Transcript Data

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1. Introduction

The National Board on Certification and Recertification of Nurse Anesthetists (NBCRNA) Council on Certification of Nurse Anesthetists (CCNA) implemented computerized testing for its examinations beginning in April 1996. CCNA 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 2010.

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 2010 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 2010 examinees. The results in Table 1 are divided by whether examinees were first-time or repeat test takers. **Table 1** shows pass rates for 2010 examinees, divided by first-time test takers and repeat test takers. Note that the pass rate drops appreciably for repeat examinees.

| TABLE 1 | | | |
|-----------------------------------|--------------|------------------|----------------|
| 1ST TIME TAKERS | | FREQUENCY | PERCENT |
| | PASS | 2040 | 88.9% |
| | FAIL | 254 | 11.1% |
| | TOTAL | 2294 | 100.0% |
| REPEAT | | | |
| | PASS | 230 | 58.4% |
| | FAIL | 164 | 41.6% |
| | TOTAL | 394 | 100.0% |

Table 2 shows the distribution of test length and pass/fail status for first time examinees only. The majority of test takers (66.6%) passed the test in 70 items (not including the 30 unscored pretest items). Only 3.2 percent of test takers who took the 2010 NCE failed the test at 70 items. Approximately 13.9 percent of the test takers took the maximum test length of 140 items.

| TABLE 2 PASS/FAIL SUMMARY BY TEST LENGTH FOR 2010 NCE TEST TAKERS | | |
|--|------------------|----------------|
| | FREQUENCY | PERCENT |
| PASS IN 70 ITEMS | 1527 | 66.6% |
| PASS IN 71 TO 139 ITEMS | 302 | 13.2% |
| PASS IN 140 ITEMS | 211 | 9.2% |
| FAIL IN 70 ITEMS | 74 | 3.2% |
| FAIL IN 71 TO 139 ITEMS | 72 | 3.1% |
| FAIL IN 140 ITEMS | 108 | 4.7% |
| TOTAL | 2294 | 100.0% |

3. Demographic Characteristics of 2010 NCE Test Taker Population

Tables 3 through 6 summarize 2010 pass rates on the NCE by gender, age, clinical background, and degree earned, for first time examinees only. Table 3 illustrates that approximately 63.5% of the NCE test takers in 2010 were female, 36.5% 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 2010 NCE examinees was just under 34 years old.

| TABLE 3 GENDER OF 2010 NCE TEST TAKERS | | | | | | |
|---|------|---------|------|---------|-------|---------|
| GENDER | PASS | | FAIL | | TOTAL | |
| | N | PERCENT | N | PERCENT | N | PERCENT |
| FEMALE | 1299 | 89.2% | 158 | 10.8% | 1457 | 100.0% |
| MALE | 741 | 88.5% | 96 | 11.5% | 837 | 100.0% |
| TOTAL | 2040 | 88.9% | 254 | 11.1% | 2294 | 100.0% |

| TABLE 4 AGE OF 2010 NCE TEST TAKERS | | | | | | |
|--|------|---------|------|---------|-------|---------|
| AGE | PASS | | FAIL | | TOTAL | |
| | N | PERCENT | N | PERCENT | N | PERCENT |
| 30 AND UNDER | 872 | 93.1% | 65 | 6.9% | 937 | 100.0% |
| 31-39 | 884 | 87.5% | 126 | 12.5% | 1010 | 100.0% |
| 40 AND OVER | 284 | 81.8% | 63 | 18.2% | 347 | 100.0% |
| TOTAL | 2040 | 88.9% | 254 | 11.1% | 2294 | 100.0% |

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Table 5 displays pass rates by clinical background. The clinical settings most represented were intensive care/critical care unit (30.3%), followed by surgical intensive care unit (22.6%), and medical intensive care unit (15.9%).

| TABLE 5 CLINICAL BACKGROUND OF 2010 NCE TEST TAKERS | | | | | | |
|--|-------------|----------------|-------------|----------------|--------------|----------------|
| CLINICAL BACKGROUND | PASS | | FAIL | | TOTAL | |
| | N | PERCENT | N | PERCENT | N | PERCENT |
| CRITICAL CARE | 2 | 100.0% | 0 | 0.0% | 2 | 100.0% |
| MICU | 333 | 91.5% | 31 | 8.5% | 364 | 100.0% |
| SICU | 464 | 89.4% | 55 | 10.6% | 519 | 100.0% |
| CCU | 178 | 89.4% | 21 | 10.6% | 199 | 100.0% |
| PICU | 75 | 92.6% | 6 | 7.4% | 81 | 100.0% |
| NICU | 34 | 91.9% | 3 | 8.1% | 37 | 100.0% |
| ICU/CCU | 617 | 88.5% | 80 | 11.5% | 697 | 100.0% |
| NEURO ICU | 72 | 97.3% | 2 | 2.7% | 74 | 100.0% |
| TRAUMA ICU | 92 | 89.3% | 11 | 10.7% | 103 | 100.0% |
| PACU | 47 | 77.0% | 14 | 23.0% | 61 | 100.0% |
| ER | 92 | 85.2% | 16 | 14.8% | 108 | 100.0% |
| OPERATING ROOM | 34 | 69.4% | 15 | 30.6% | 49 | 100.0% |
| TOTAL | 2040 | 88.9% | 254 | 11.1% | 2294 | 100.0% |

Table 6 displays pass rates by degree attained. Over half (55.7%) of the 2010 NCE examinees attained the MSN degree. Pass rate comparisons between different clinical settings (Table 6) and degree (Table 7) should be made with caution because some demographic subgroups feature small sample sizes.

| TABLE 6 TYPES OF GRADUATE DEGREE OF 2010 NCE TEST TAKERS | | | | | | |
|---|-------------|----------------|-------------|----------------|--------------|----------------|
| DEGREE UPON COMPLETION | PASS | | FAIL | | TOTAL | |
| | N | PERCENT | N | PERCENT | N | PERCENT |
| MASTERS, NURSING (MSN) | 1077 | 87.9 | 148 | 12.1 | 1225 | 100.0 |
| MASTERS, ANESTHESIA | 666 | 90.1 | 73 | 9.9 | 739 | 100.0 |
| MASTERS, SCIENCE | 52 | 75.4 | 17 | 24.6 | 69 | 100.0 |
| MASTERS, BIO/ANESTHESIA | 53 | 89.8 | 6 | 10.2 | 59 | 100.0 |
| MASTERS, MGMT/ HEALTH CARE | 20 | 76.9 | 6 | 23.1 | 26 | 100.0 |
| MASTERS, EDUCATION | 7 | 100.0 | 0 | 0.0 | 7 | 100.0 |
| MASTERS, HEALTH SCIENCE | 41 | 73.2 | 15 | 26.8 | 56 | 100.0 |
| POST MASTERS MSN | 14 | 77.8 | 4 | 22.2 | 18 | 100.0 |
| TOTAL | 1929 | 87.7 | 270 | 12.3 | 2199 | 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 CCNA Transcript of Student Record forms submitted by program directors for their students completing nurse anesthesia programs in 2010. 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 CCNA Transcript of Student Record (see the "Record of Clinical Experience" in the Appendix).

The same columns are replicated in Tables 7-17:

- The first column lists the clinical area in which cases were performed.
- The **Number (N)** column represents the number of 2010 transcripts for which data was entered.
- 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 2010 transcripts.
- The **Mean** column indicates the average number of cases reported on the 2010 transcripts.
- The **Median** column indicates the median number of cases (50th percentile) reported on 2010 transcripts. Half of the 2010 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 2010 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 | 2346 | 550 | 843.5 | 153 | 823 | 550 |
| Total Hours of Anesthesia | 2346 | --- | 1687.3 | 362 | 1651 | 852 |
| Total Clinical Hours | 2346 | --- | 2464.8 | 557 | 2423 | 700 |

TABLE 8
SECTION IV: PATIENT PHYSICAL STATUS

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|---------------------------|------|--------------------------|-------|--------------------|--------|---------|
| Class I | 2346 | 0 | 110.5 | 49 | 104 | 6 |
| Class II | 2346 | 0 | 405.2 | 103 | 394 | 41 |
| Class III & IV | 2346 | 100 | 327.7 | 94 | 318 | 106 |
| Class V | 2346 | [5] | 3.3 | 4 | 2 | 0 |

TABLE 9
SECTION V: SPECIAL CASES

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|---------------------------------|------|--------------------------|-------|--------------------|--------|---------|
| Geriatric, 65+ | 2346 | 50 | 205.1 | 79 | 193 | 50 |
| Pediatric, 2-12 years | 2346 | 25 | 74.9 | 38 | 68 | 25 |
| Pediatric, under 2 years | 2346 | 10 | 26.4 | 15 | 23 | 10 |
| Neonatal | 2346 | [5] | 2.4 | 3 | 1 | 0 |
| Trauma/Emergency | 2346 | 30 | 60.4 | 30 | 53 | 30 |
| Ambulatory/Outpatient | 2346 | 100 | 394.9 | 170 | 373 | 101 |
| Obstetrics | 2346 | 30 | 78.0 | 49 | 65 | 30 |
| Obstetrics, C Section | 2346 | 10 | 35.8 | 21 | 31 | 10 |
| Obstetrics, Analgesia for Labor | 2346 | 10 | 44.0 | 40 | 34 | 10 |

TABLE 10
SECTION VI: POSITION CATEGORIES

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|-----------|------|--------------------------|------|--------------------|--------|---------|
| Prone | 2346 | 20 | 50.9 | 22 | 46 | 20 |
| Lithotomy | 2346 | 25 | 88.8 | 32 | 85 | 25 |
| Lateral | 2346 | 5 | 69.1 | 47 | 56 | 8 |
| Sitting | 2346 | 5 | 23.8 | 20 | 17 | 5 |

TABLE 11
SECTION VII: ANATOMICAL CATEGORIES

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|----------------------|------|--------------------------|-------|--------------------|--------|---------|
| Intra-abdominal | 2346 | 75 | 183.5 | 62 | 174 | 75 |
| Extrathoracic | 2346 | 15 | 37.8 | 19 | 33 | 15 |
| Extremities | 2346 | 50 | 167.8 | 60 | 158 | 50 |
| Perineal | 2346 | 15 | 98.0 | 47 | 88 | 15 |
| Head, Extracranial | 2346 | 15 | 70.0 | 35 | 64 | 15 |
| Head, Intracranial | 2346 | 5 | 14.5 | 8 | 13 | 5 |
| Head, Oropharyngeal | 2346 | 20 | 79.0 | 44 | 70 | 20 |
| Intrathoracic | 2346 | 15 | 34.9 | 15 | 32 | 15 |
| Heart | 2346 | 5 | 18.7 | 11 | 17 | 5 |
| Lung | 2346 | 5 | 10.7 | 5 | 9 | 5 |
| Intrathoracic, Other | 2346 | 0 | 5.5 | 6 | 4 | 0 |
| Neck | 2346 | 5 | 22.8 | 10 | 21 | 5 |
| Neuroskeletal | 2346 | 20 | 43.7 | 21 | 39 | 20 |
| Vascular | 2346 | 10 | 37.4 | 19 | 34 | 10 |
| Other | 2346 | 0 | 35.4 | 48 | 18 | 0 |

TABLE 12
SECTION VIII: PHARMACOLOGICAL AGENTS

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|--------------------------------------|------|--------------------------|-------|--------------------|--------|---------|
| Inhalation Agents | 2346 | 200 | 614.0 | 151 | 589 | 221 |
| Intravenous Induction Agents | 2346 | 200 | 653.4 | 178 | 630 | 211 |
| Intravenous Agents, Muscle Relaxants | 2346 | 200 | 475.7 | 137 | 448 | 222 |
| Intravenous Agents, Opioids | 2346 | 200 | 719.4 | 159 | 710 | 240 |

TABLE 13
SECTION IX: METHODS OF ANESTHESIA

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|-------------------------------------|----------|---------------------------------|-------------|---------------------------|---------------|----------------|
| General Anesthesia | 2346 | 350 | 600.1 | 127 | 584 | 350 |
| Intravenous Induction | 2346 | 200 | 502.3 | 125 | 487 | 201 |
| Inhalation Induction | 2346 | 10 | 93.6 | 49 | 85 | 10 |
| Mask Management | 2346 | 25 | 74.4 | 89 | 47 | 25 |
| LMA | 2346 | 25 | 105.1 | 50 | 98 | 25 |
| Tracheal Intubation/Oral | 2346 | 200 | 391.2 | 90 | 383 | 202 |
| Tracheal Intubation/Nasal | 2346 | [10] | 14.8 | 12 | 12 | 0 |
| Total Intravenous Anesthesia | 2346 | 10 | 47.6 | 56 | 28 | 10 |
| Emergence from Anesthesia | 2346 | 200 | 564.9 | 142 | 546 | 215 |
| Monitored Anesthesia Care | 2346 | 25 | 135.9 | 75 | 119 | 25 |
| Regional/Management | 2346 | 30 | 119.8 | 64 | 110 | 30 |
| Administration | 2346 | 25 | 106.3 | 58 | 94 | 25 |
| Spinal | 2346 | [50] | 42.2 | 25 | 37 | 0 |
| Epidural | 2346 | [50] | 41.3 | 30 | 35 | 0 |
| Peripheral | 2346 | [40] | 22.8 | 27 | 14 | 0 |

TABLE 14
SECTION X: ARTERIAL TECHNIQUE

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|--|------|--------------------------|------|--------------------|--------|---------|
| Arterial Puncture/Catheter Insertion | 2346 | 25 | 58.1 | 28 | 52 | 25 |
| Intra-arterial Blood Pressure Monitoring | 2346 | 25 | 79.2 | 31 | 74 | 25 |

TABLE 15
SECTION XI: CENTRAL VENOUS CATHETER PRESSURE

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|---------------------|------|--------------------------|------|--------------------|--------|---------|
| Placement | 2346 | 5 | 14.2 | 11 | 11 | 5 |
| Placement/Actual | 2346 | 0 | 11.1 | 11 | 8 | 0 |
| Placement/Simulated | 2346 | 0 | 3.1 | 5 | 1 | 0 |
| Monitoring | 2346 | 15 | 30.3 | 15 | 26 | 15 |

TABLE 16
SECTION XII: PULMONARY ARTERY CATHETER

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|------------|------|--------------------------|------|--------------------|--------|---------|
| Placement | 2346 | [5] | 6.6 | 8 | 5 | 0 |
| Monitoring | 2346 | [10] | 15.6 | 10 | 14 | 0 |

TABLE 17
SECTION XIII: OTHER

| Area | N | Required Number of Cases | Mean | Standard Deviation | Median | Minimum |
|---|----------|-------------------------------------|-------------|-------------------------------|---------------|----------------|
| Intravenous Catheter Placement | 2346 | 100 | 238.4 | 138 | 197 | 100 |
| Mechanical Ventilation | 2346 | 200 | 452.4 | 106 | 445 | 200 |
| Pain Management | 2346 | [10] | 36.3 | 106 | 8 | 0 |
| Alternative Airway Management/Total | 2346 | 10 | 43.3 | 30 | 36 | 10 |
| Fiberoptic Total | 2346 | 5 | 18.6 | 14 | 15 | 5 |
| Fiberoptic Actual Placement | 2346 | 0 | 7.7 | 8 | 5 | 0 |
| Fiberoptic Simulated Placement | 2346 | 0 | 3.4 | 7 | 1 | 0 |
| Fiberoptic Airway Assessment | 2346 | 0 | 7.5 | 7 | 6 | 0 |
| Alternative Airway Mgmt. Techniques: Other | 2346 | 5 | 24.7 | 25 | 19 | 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 beginning in August, 2009.
- Three statements related to exam preparation.

The majority of the survey questions involved a Likert-type rating scale which requires the respondent 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 to the survey do not always answer all of the questions, 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, 2010 through December 31, 2010. 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 88% of 2010 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 | 652 | 94.8% |
| | DISAGREE | 36 | 5.2% |
| I WAS ABLE TO SCHEDULE AN ACCEPTABLE TEST CENTER LOCATION. | | | |
| | AGREE | 653 | 94.9% |
| | DISAGREE | 35 | 5.1% |
| THE EXAM RESERVATION PROCESS WAS EASY TO USE. | | | |
| | AGREE | 679 | 98.7% |
| | DISAGREE | 9 | 1.3% |
| THE TEST CENTER WAS EASY TO LOCATE. | | | |
| | AGREE | 667 | 96.8% |
| | DISAGREE | 22 | 3.2% |
| THE TEST CENTER STAFF WAS HELPFUL AND KNOWLEDGEABLE. | | | |
| | AGREE | 683 | 99.3% |
| | DISAGREE | 5 | 0.7% |
| THE TESTING CENTER REGISTRATION/CHECK-IN PROCESS WAS HANDLED IN A PROFESSIONAL AND EFFICIENT MANNER. | | | |
| | AGREE | 680 | 98.8% |
| | DISAGREE | 8 | 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 (98.5% agreement), the 2010 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 | 1658 | 83.9% |
| | DISAGREE | 317 | 16.1% |
| THE GRAPHS AND DIAGRAMS WERE EASY TO READ. | | | |
| | AGREE | 1817 | 92.7% |
| | DISAGREE | 144 | 7.3% |
| THE GRAPHS, FIGURES AND DIAGRAMS IN THE QUESTIONS FIT ONTO THE SCREEN. | | | |
| | AGREE | 1785 | 92.4% |
| | DISAGREE | 146 | 7.6% |
| I WAS ABLE TO "SCROLL" IN ORDER TO VIEW AN ENTIRE GRAPH OR FIGURE IN A QUESTION. | | | |
| | AGREE | 1914 | 97.8% |
| | DISAGREE | 43 | 2.2% |
| THE AREAS OF THE CONTENT OUTLINE WERE FAIRLY REPRESENTED. | | | |
| | AGREE | 1754 | 88.6% |
| | DISAGREE | 225 | 11.4% |
| MY TESTING ENVIRONMENT WAS CLEAN, QUIET AND COMFORTABLE. | | | |
| | AGREE | 671 | 97.5% |
| | DISAGREE | 17 | 2.5% |
| I ENCOUNTERED NO TECHNICAL PROBLEMS WITH THE TEST ADMINISTRATION SOFTWARE. | | | |
| | AGREE | 672 | 97.7% |
| | DISAGREE | 16 | 2.3% |
| THE TEST ADMINISTRATION SOFTWARE WAS USER-FRIENDLY | | | |
| | AGREE | 686 | 99.6% |
| | DISAGREE | 3 | 0.4% |
| OVERALL, I WAS SATISFIED WITH MY TEST EXPERIENCE | | | |
| | AGREE | 678 | 98.5% |
| | DISAGREE | 10 | 1.5% |

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Beginning in August 2009, the NBCRNA began the administration of 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). In the examinations administered in 2010, a random sample (N=2,006) 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 and SA 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 | 1713 | 86.9% |
| | DISAGREE | 259 | 13.1% |
| THE QUESTIONS IN THE SHORT ANSWER / CALCULATION FORMAT WERE FAIR. | | | |
| | AGREE | 1758 | 89.3% |
| | DISAGREE | 211 | 10.7% |
| THE QUESTIONS IN THE DRAG AND DROP FORMAT WERE FAIR. | | | |
| | AGREE | 1797 | 91.1% |
| | DISAGREE | 176 | 8.9% |
| I UNDERSTOOD HOW TO RESPOND TO THE QUESTIONS IN THE AQF FORMATS. | | | |
| | AGREE | 1947 | 98.6% |
| | DISAGREE | 28 | 1.4% |
| I NEEDED HELP FIGURING OUT HOW TO RESPOND TO THE QUESTIONS IN THE AQF FORMATS. | | | |
| | AGREE | 479 | 24.4% |
| | DISAGREE | 1484 | 75.6% |

The final three statements of the exit survey, asking about exam preparation, are summarized in Table 21. Of the 2010 NCE examinees who previously took the SEE, 54.6% stated the SEE helped prepare them for the NCE. A small portion (9.6%) of the 2010 sample indicated that they did not take the SEE. The majority (92.3%) attended a review course while only 7.7% did not. Finally, just over half 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 | 1070 | 54.6% |
| | DISAGREE | 729 | 37.2% |
| | DID NOT TAKE SEE | 162 | 8.3% |
| IF YOU TOOK A REVIEW COURSE IN PREPARATION FOR THIS EXAMINATION, PLEASE INDICATE BELOW WHICH REVIEW COURSE YOU TOOK. | | | |
| | VALLEY ANESTHESIA | 1546 | 77% |
| | CORE CONCEPTS | 92 | 4.6% |
| | HOWARD REVIEW | 6 | 0.3% |
| | R&R BOARD REVIEW | 15 | 0.7% |
| | PRODIGY ANESTHESIA | 88 | 4.4% |
| | CRNA SECRETS | 5 | 0.2% |
| | AANA ANNUAL MTG. | 0 | 0.0% |
| | OTHER COMMERCIAL | 69 | 3.4% |
| | CRNA PROGRAM | 41 | 2% |
| | DID NOT TAKE | 106 | 5.3% |
| PLEASE INDICATE BELOW IF YOUR NURSE ANESTHESIA EDUCATIONAL PROGRAM FEATURED ANY ACADEMIC TESTS USING COMPUTER BASED TESTING. | | | |
| | YES | 1205 | 60% |
| | NO | 771 | 38.4% |

6. Demographic Characteristics of 2010 SEE Test Taker Population

The following tables summarize 2010 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).

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 | | | |
|--|--------------|-------------|---------------------------|
| 2010 SEE TEST TAKER PERFORMANCE BY GENDER AND YEAR IN PROGRAM | | | |
| YEAR 1 | | | |
| GENDER | COUNT | MEAN | STANDARD DEVIATION |
| FEMALE | 506 | 382 | 37 |
| MALE | 309 | 391 | 39 |
| TOTAL | 815 | 385 | 38 |
| YEAR 2 | | | |
| FEMALE | 1537 | 399 | 40 |
| MALE | 893 | 408 | 40 |
| TOTAL | 2430 | 402 | 40 |
| TOTAL | | | |
| FEMALE | 2043 | 395 | 40 |
| MALE | 1202 | 403 | 41 |
| TOTAL | 3245 | 398 | 40 |

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Table 23 summarizes SEE scores by age group. The average age of Year 1 SEE examinees was 31.5 years (about the same, on average, as Year 1 examinees in 2009). The average age of Year 2 SEE examinees was 32.5 years. The mean age of all 2010 SEE examinees was 32.3 years, on average about a ½ year younger than the sample of first-time NCE examinees in 2009. The largest subgroup (by age) was composed of examinees under the age of 30 (48.6%). Examinees between the ages of 31 and 39 comprised a slightly smaller subgroup (38.7%). There was a higher prevalence of under-30 examinees in Year 1 (54.4%) than Year 2 (46.6%). In general, younger examinees tended to score higher on the SEE than older examinees.

| TABLE 23 | | | |
|---|--------------|-------------|---------------------------|
| 2010 SEE TEST TAKER PERFORMANCE BY AGE AND YEAR IN PROGRAM | | | |
| YEAR 1 | | | |
| AGE | COUNT | MEAN | STANDARD DEVIATION |
| UNDER 30 | 443 | 389 | 38 |
| 30-39 | 280 | 382 | 38 |
| 40 AND OVER | 92 | 376 | 36 |
| TOTAL | 815 | 385 | 38 |
| YEAR 2 | | | |
| UNDER 30 | 1133 | 405 | 40 |
| 30-39 | 976 | 401 | 40 |
| 40 AND OVER | 321 | 398 | 39 |
| TOTAL | 2430 | 402 | 40 |
| TOTAL | | | |
| UNDER 30 | 1576 | 400 | 40 |
| 30-39 | 1256 | 397 | 40 |
| 40 AND OVER | 413 | 393 | 40 |
| TOTAL | 3245 | 398 | 40 |

Tables 24-26 display the summaries of SEE scores by clinical background. The clinical settings most represented were intensive care/critical care unit (34.1%), followed by surgical intensive care unit (21.4%), and medical intensive care unit (15.4%).

| TABLE 24 2010 SEE TEST TAKER PERFORMANCE BY CLINICAL BACKGROUND AND YEAR IN PROGRAM YEAR 1 | | | |
|---|--------------|-------------|---------------------------|
| CLINICAL BACKGROUND | COUNT | MEAN | STANDARD DEVIATION |
| MICU | 112 | 382 | 36 |
| SICU | 183 | 384 | 37 |
| CCU | 68 | 388 | 39 |
| PICU | 27 | 394 | 46 |
| NICU | 9 | 371 | 47 |
| ICU/CCU | 283 | 386 | 38 |
| NEURO ICU | 25 | 377 | 30 |
| TRAUMA ICU | 35 | 386 | 37 |
| PACU | 23 | 386 | 41 |
| ER | 36 | 393 | 36 |
| OPERATING ROOM | 14 | 391 | 38 |
| TOTAL | 815 | 385 | 38 |

TABLE 25
2010 SEE TEST TAKER PERFORMANCE BY CLINICAL BACKGROUND AND YEAR IN PROGRAM
YEAR 2

| CLINICAL BACKGROUND | COUNT | MEAN | STANDARD DEVIATION |
|----------------------------|--------------|-------------|---------------------------|
| CRITICAL CARE | 2 | 420 | 18 |
| MICU | 389 | 404 | 41 |
| SICU | 512 | 401 | 41 |
| CCU | 191 | 408 | 39 |
| PICU | 71 | 401 | 39 |
| NICU | 38 | 391 | 45 |
| ICU/CCU | 823 | 403 | 39 |
| NEURO ICU | 78 | 400 | 39 |
| TRAUMA ICU | 106 | 405 | 37 |
| PACU | 54 | 406 | 37 |
| ER | 110 | 398 | 47 |
| OPERATING ROOM | 56 | 388 | 40 |
| TOTAL | 2430 | 402 | 40 |

TABLE 26
2010 SEE TEST TAKER PERFORMANCE BY CLINICAL BACKGROUND AND YEAR IN PROGRAM
TOTAL YEAR 1 AND 2

| CLINICAL BACKGROUND | COUNT | MEAN | STANDARD DEVIATION |
|----------------------------|--------------|-------------|---------------------------|
| CRITICAL CARE | 2 | 420 | 18 |
| MICU | 501 | 399 | 41 |
| SICU | 695 | 397 | 40 |
| CCU | 259 | 403 | 40 |
| PICU | 98 | 399 | 41 |
| NICU | 47 | 387 | 45 |
| ICU/CCU | 1106 | 399 | 40 |
| NEURO ICU | 103 | 394 | 38 |
| TRAUMA ICU | 141 | 401 | 38 |
| PACU | 77 | 400 | 39 |
| ER | 146 | 397 | 45 |
| OPERATING ROOM | 70 | 389 | 40 |
| TOTAL | 3245 | 398 | 40 |

Tables 27-29 display summaries of SEE scores by degree to be attained. Well over half (57.5%) of the 2010 SEE examinees were enrolled in the MSN degree programs. A small number of SEE examinees (49) were students coming out of Doctorate-level programs. This number represents 1.5% of the entire 2010 SEE testing populations, but about 3% of the Year 1 SEE testing sample. Score comparisons made among groups represented in these table should be made with caution because some of the subgroups reflect small sample sizes.

| TABLE 27 2010 SEE TEST TAKER PERFORMANCE BY TYPE OF GRADUATE DEGREE AND YEAR IN PROGRAM YEAR 1 | | | |
|---|--------------|-------------|---------------------------|
| DEGREE UPON COMPLETION | COUNT | MEAN | STANDARD DEVIATION |
| MASTERS, NURSING (MSN) | 523 | 387 | 36 |
| MASTERS, ANESTHESIA | 185 | 391 | 39 |
| MASTERS, SCIENCE | 54 | 369 | 36 |
| MASTERS, BIO/ANESTHESIA | 10 | 393 | 43 |
| POST MASTERS MSN | 16 | 361 | 31 |
| POST MASTERS BIOLOGY | 2 | 347 | 20 |
| DOCTOR, MGT. PRAC. NURSE ANESTHESIA | 25 | 359 | 38 |
| TOTAL | 815 | 385 | 38 |

TABLE 28
2010 SEE TEST TAKER PERFORMANCE BY TYPE OF GRADUATE DEGREE AND YEAR IN PROGRAM
YEAR 2

| DEGREE UPON COMPLETION | COUNT | MEAN | STANDARD DEVIATION |
|--|--------------|-------------|---------------------------|
| MASTERS, NURSING (MSN) | 1342 | 404 | 40 |
| MASTERS, ANESTHESIA | 838 | 404 | 39 |
| MASTERS, SCIENCE | 56 | 393 | 45 |
| MASTERS, BIO/ANESTHESIA | 69 | 389 | 44 |
| MASTERS, EDUCATION | 7 | 436 | 20 |
| MASTERS, HEALTH SCIENCE | 52 | 397 | 41 |
| POST MASTERS MSN | 41 | 410 | 35 |
| POST MASTERS ANESTHESIA | 1 | 400 | --- |
| DOCTOR, MGT. PRAC. NURSE ANESTHESIA | 24 | 351 | 27 |
| TOTAL | 2430 | 402 | 40 |

TABLE 29
2010 SEE TEST TAKER PERFORMANCE BY TYPE OF GRADUATE DEGREE AND YEAR IN PROGRAM
TOTAL YEARS 1 AND 2

| DEGREE UPON COMPLETION | COUNT | MEAN | STANDARD DEVIATION |
|--|--------------|-------------|---------------------------|
| MASTERS, NURSING (MSN) | 1865 | 399 | 39 |
| MASTERS, ANESTHESIA | 1023 | 401 | 40 |
| MASTERS, SCIENCE | 110 | 381 | 43 |
| MASTERS, BIO/ANESTHESIA | 79 | 390 | 44 |
| MASTERS, EDUCATION | 7 | 436 | 20 |
| MASTERS, HEALTH SCIENCE | 52 | 397 | 41 |
| POST MASTERS MSN | 57 | 396 | 41 |
| POST MASTERS ANESTHESIA | 1 | 400 | --- |
| POST MASTERS BIOLOGY | 2 | 347 | 20 |
| DOCTOR, MGT. PRAC. NURSE ANESTHESIA | 49 | 355 | 33 |
| TOTAL | 3245 | 398 | 40 |

Appendix

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) | |
| 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) | | | |