



Summary of NCE and SEE Performance and Clinical Experience

September 1, 2016, through August 31, 2017

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Introduction

This report presents a summary of information on individual performance on the National Certification Examination (NCE) and the Self-Evaluation Examination (SEE) over the time frame of the NBCRNA's fiscal year 2017 (FY 2017), September 1, 2016, through August 31, 2017.

Performance on the NCE is summarized first, with pass/fail outcomes presented according to several demographic variables: gender, age, clinical background, and type of graduate degree. Trend data summarizing pass rates over the past five years are also provided in the last column of each table for each demographic as well. Readers will note that there was no change to the NCE passing standard in FY 2017; the last time the passing standard was raised was January 1, 2014.

NCE pass rate summaries are followed by an analysis of candidates' responses on a satisfaction survey administered at the end of the NCE. The survey requested information pertaining to candidates' satisfaction with their registration and test experience. Next, descriptive statistics (e.g., mean, standard deviation) are provided for the number of cases performed in various clinical areas by students of nurse anesthesia educational programs who graduated in FY 2017.

Finally, information about scaled scores for the SEE is presented in the last part of the report, summarizing performance by gender, age, clinical background, type of graduate degree, and year in program. Trend data summarizing the past five years in each demographic sub-group are also provided in the final column of each table.

Please note that the following changes have been included in this FY 2017 annual report:

- The **Post Master's Certificate** was included in the **Other Masters** category.
- **MS Nurse Anesthesia/Anesthesiology** was reported in the **MS Nurse Anesthesia** category, not in the **Other Masters** as in the past.
- Individuals who matriculated into anesthesia programs **on or after January 1, 2015** (approximately 28% of all first-time NCE takers), were required to meet a revised classification framework based on the Council on Accreditation (COA) Standards. This classification framework is different than the one used by students who matriculated prior to January 1, 2015.

Candidate Performance on the NCE

The information in **Table 1** addresses the performance of candidates on the NCE during the fiscal year reporting period. Pass rates appear separately for first-time candidates versus repeat candidates, based on the passing standard that took effect on January 1, 2014. The pass rate for the 2,464 first-time candidates is 82.6%. The pass rate is lower for repeat examinees, consistent with the previous year's data.

The FY 2017 pass rate (82.6%) is slightly lower than the cumulative first-time pass rate (85.6%) averaged over the previous five fiscal years as shown in the final column of **Table 1** (FY 2012–FY 2017 represents September 1, 2012–August 31, 2017, N = 14,954). First-time examinee pass rates for the NCE, by year since 2008, can be found in **Table A1** in Appendix A of this report.

Table 1. Pass/Fail Summary for NCE Candidates, FY 2017

| First-Time Candidates | Frequency | Percent | 5-year Trend % |
|-----------------------|--------------|---------------|----------------|
| Pass | 2,035 | 82.6% | 85.6% |
| Fail | 429 | 17.4% | 14.4% |
| Total | 2,464 | 100.0% | 100.0% |
| Repeat Candidates | Frequency | Percent | 5-year Trend % |
| Pass | 394 | 61.0% | 62.5% |
| Fail | 252 | 39.0% | 37.5% |
| Total | 646 | 100.0% | 100.0% |

The NCE total scores and domain-level information for first-time candidates can be found in **Table A2** of the Appendix A.

Table 2 shows the distribution of test length and pass/fail status. Only *first-time* candidates are included in Table 2. Of the candidates who passed, the majority (55.8%) were administered 70 items (not including the 30 unscored pretest items). Only 4.8% of NCE candidates failed the test in 70 items. Approximately 19.1% of the candidates took the maximum test length of 140 items.

Table 2. Pass/Fail Summary by Test Length for First-Time NCE Candidates, FY 2017

| | Frequency | Percent | 5-year Trend % |
|-------------------------|--------------|---------------|----------------|
| Pass in 70 items | 1,376 | 55.8% | 58.5% |
| Pass in 71 to 139 items | 385 | 15.6% | 15.3% |
| Pass in 140 items | 274 | 11.1% | 11.8% |
| Fail in 70 items | 117 | 4.8% | 3.8% |
| Fail in 71 to 139 items | 114 | 4.6% | 3.8% |
| Fail in 140 items | 198 | 8.0% | 6.8% |
| Total | 2,464 | 100.0% | 100.0% |

Demographic Characteristics of NCE Candidate Population, FY 2017

The next several tables present pass rates on the NCE grouped by gender, age, clinical background, and degree earned. Only *first-time* candidates are included in these tables. **Table 3** indicates that 58.5% of the NCE candidates were female and 41.5% were male. The pass rates between males and females were very similar, and this observation is consistent with the five-year trend (final column of Table 3).

Table 3. Gender of NCE Candidates, FY 2017

| Gender | Pass | | Fail | | Total | | 5-year Trend Pass % |
|--------------|--------------|--------------|------------|--------------|--------------|---------------|---------------------|
| | N | Percent | N | Percent | N | Percent | |
| Female | 1,178 | 81.8% | 263 | 18.2% | 1,441 | 58.5% | 84.9% |
| Male | 857 | 83.8% | 166 | 16.2% | 1,023 | 41.5% | 86.8% |
| Total | 2,035 | 82.6% | 429 | 17.4% | 2,464 | 100.0% | 85.6% |

Table 4 presents the pass rate by age group. The pass rate decreased as examinee age increased, both for the FY 2017 sample and the five-year trend analysis. Younger students tend to perform better on the NCE. The average age of the FY 2017 *first-time* NCE candidates was 31.9 years.

Table 4. Age of NCE Candidates, FY 2017

| Age | Pass | | Fail | | Total | | 5-year Trend Pass % |
|--------------|--------------|--------------|------------|--------------|-------------|---------------|---------------------|
| | N | Percent | N | Percent | N | Percent | |
| Under 30 | 822 | 88.1% | 111 | 11.9% | 933 | 37.9% | 91.0% |
| 30-35 | 904 | 83.1% | 184 | 16.9% | 1,088 | 44.2% | 85.6% |
| 36-39 | 159 | 72.3% | 61 | 27.7% | 220 | 8.9% | 79.8% |
| 40 or above | 150 | 67.3% | 73 | 32.7% | 223 | 9.1% | 72.9% |
| Total | 2,035 | 82.6% | 429 | 17.4% | 2464 | 100.0% | 85.6% |

Table 5 displays pass rates for candidates' clinical background. Over one-third of the candidates reported their clinical background as ICU/CCU (34.7%). Pass rate comparisons between different clinical settings (Table 5) should be made with caution, because some subgroups for the FY 2017 data feature small sample sizes. Also, the clinical background categories tend not to be mutually exclusive. While examinees report their clinical background as discrete categories, actual experience may be more diverse and complex (e.g., SICU in some facilities may include CVICU patients, and many other permutations can exist).

When comparing pass rates across clinical background subgroups, readers are advised to refer to the 5-year trend column of Table 5. The pass rates in this column are more reliable for comparisons because they are based on a much larger sample. For instance, over the past five years, first-time NCE examinees with PICU, MICU, and NEURO ICU clinical backgrounds respectively have demonstrated the highest rates of success on the NCE.

Table 5. Clinical Background of NCE Candidates, FY 2017

| Clinical Background | Pass | | Fail | | Total | | 5-year Trend Pass % |
|---------------------|--------------|--------------|------------|--------------|--------------|---------------|---------------------|
| | N | Percent | N | Percent | N | Percent | |
| CCU | 214 | 82.6% | 45 | 17.4% | 259 | 10.5% | 86.2% |
| ER | 153 | 83.2% | 31 | 16.9% | 184 | 7.5% | 83.7% |
| ICU/CCU | 697 | 81.5% | 158 | 18.5% | 855 | 34.7% | 84.9% |
| MICU | 285 | 85.1% | 50 | 14.9% | 335 | 13.6% | 87.6% |
| NEURO ICU | 102 | 84.3% | 19 | 15.7% | 121 | 4.9% | 87.4% |
| NICU | 31 | 77.5% | 9 | 22.5% | 40 | 1.6% | 80.2% |
| OR | 12 | 75.0% | 4 | 25.0% | 16 | 0.7% | 80.7% |
| PACU | 15 | 79.0% | 4 | 21.1% | 19 | 0.8% | 81.5% |
| PICU | 82 | 89.1% | 10 | 10.9% | 92 | 3.7% | 87.9% |
| SICU | 263 | 81.7% | 59 | 18.3% | 322 | 13.1% | 87.0% |
| Trauma ICU | 117 | 80.7% | 28 | 19.3% | 145 | 5.9% | 84.8% |
| Other | 64 | 84.2% | 12 | 15.8% | 76 | 3.1% | 84.5% |
| Total | 2,035 | 82.6% | 429 | 17.4% | 2,464 | 100.0% | 85.6% |

Table 6 displays distribution of pass rates by degree attained. Of 2,464 first-time NCE takers in FY 2017, 29.4% (n=724) were from program that awarded a Master of Science in Nursing degree, 43.4% (1,069) graduated from programs awarding a Master of Science in Nurse Anesthesia degree, 7.1% (n=176) were from other master's programs, and 20.1% (n=495) were from programs that awarded a doctoral degree. Pass rate comparisons between different degrees (Table 6) should be made with caution because some demographic subgroups feature small sample sizes.

When comparing pass rates across clinical background subgroups, readers are advised to refer to the five-year trend column of Table 6. For instance, over the past five years, first-time NCE examinees coming out of MSN programs appear to exhibit the highest rates of success on the NCE.

Table 6. Types of Graduate Degrees Reported by NCE Candidates, FY 2017

| Degree Upon Completion | Pass | | Fail | | 5-year Trend Pass % |
|------------------------|--------------|--------------|------------|--------------|---------------------|
| | N | Percent | N | Percent | |
| MS Nursing | 630 | 87.0% | 94 | 13.0% | 87.3% |
| MS Nurse Anesthesia | 841 | 83.4% | 228 | 21.3% | 84.2% |
| Other Masters | 150 | 85.2% | 26 | 14.8% | 86.2% |
| Doctoral Degree | 414 | 83.6% | 81 | 16.4% | 83.3% |
| Total | 2,035 | 82.6% | 429 | 17.4% | 85.6% |

Descriptive Information on Number of Clinical Experiences, FY 2017

The tables in this section report data collected about the number of anesthesia cases performed in clinical areas, as submitted by program directors to the NBCRNA for individuals completing nurse anesthesia programs in the reporting period. *This data reflects records of clinical experiences submitted for individuals with a graduation date in the fiscal year reporting period, and not the sample of NCE candidates during this time frame.* As a result, sample sizes presented in this section will not equal the number of first-time NCE candidates as reported in Tables 1 through 6.

As noted, individuals who matriculated into anesthesia programs on or after January 1, 2015, were required to meet a revised classification framework based on the Council on Accreditation (COA) Standards (See Appendix B for Academic and Clinical Experience Requirements). For clarity, these two groups of students are reported separately in Tables 7a through 17a for students who matriculated before January 1, 2015 (n=1,765), and in Tables 7b through 17b, for students who matriculated on and after January 1, 2015 (n=693), respectively. Clinical experiences are aligned in the table pairs, but not every “Table a” has a corresponding “Table b”.

The columns are the same in **Tables 7 through 17**, presenting the following information:

- The first column contains the clinical area in which cases were performed.
- The *N* column represents the number of records submitted in the reporting period.
- The *Number of Cases Required* column indicates the minimum number of cases that must be completed by an applicant for the applicant to be deemed eligible to take the NCE. If a minimum number of cases is not required, a “0” is entered in this column. Please refer to Appendix B for required number of cases in each clinical area.
- The *Mean* column indicates the average number of cases reported on the FY 2017 records.
- The *Standard Deviation* column describes the dispersion in the number of cases reported on the FY 2017 records.
- The *Median* column indicates the median number of cases (50th percentile) reported on the records in the reporting period. Half the records contained values higher than this number, and half contained a value below this number.
- The *Minimum* column indicates the smallest number of cases reported on the FY 2017 records.

Table 7a. Sections I, II and III: Clinical Experience (Students matriculated before January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|---------------------------|-------|--------------------------|---------|--------------------|--------|---------|
| Total Number of Cases | 1,765 | 550 | 854.4 | 156.6 | 833 | 559 |
| Total Hours of Anesthesia | 1,765 | 0 | 1,688.9 | 372.0 | 1,628 | 877 |
| Total Clinical Hours | 1,765 | 0 | 2,660.8 | 427.2 | 2,634 | 1,228 |

Table 7b. Sections I, II and III: Clinical Experience (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|---------------------------|-----|--------------------------|---------|--------------------|--------|---------|
| Total Number of Cases | 693 | 600 | 901.2 | 154.4 | 884 | 616 |
| Total Hours of Anesthesia | 693 | 0 | 1,676.9 | 305.6 | 1,645 | 992 |
| Total Clinical Hours | 693 | 0 | 2,610.1 | 582.7 | 2,583 | 1,499 |

Table 8a. Section IV: Patient Physical Status (Students matriculated before January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|----------------|-------|--------------------------|-------|--------------------|--------|---------|
| Class I | 1,765 | 0 | 95.5 | 53.0 | 85 | 6 |
| Class II | 1,765 | 0 | 367.2 | 98.0 | 352 | 104 |
| Class III & IV | 1,765 | 100 | 398.8 | 118.0 | 386 | 109 |
| Class V | 1,765 | 0 | 3.3 | 4.1 | 2 | 0 |

Table 8b. Section IV: Patient Physical Status (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|--------------------|-----|--------------------------|-------|--------------------|--------|---------|
| Class I | 693 | 0 | 84.6 | 36.1 | 80 | 11 |
| Class II | 693 | 0 | 394.0 | 97.9 | 386 | 175 |
| Class III-VI Total | 693 | 200 | 426.6 | 109.8 | 415 | 211 |
| Class III | 693 | 50 | 345.6 | 91.3 | 331 | 178 |
| Class IV | 693 | 10 | 77.5 | 34.8 | 72 | 10 |
| Class V | 693 | 0 | 3.0 | 3.3 | 2 | 0 |
| Class VI | 693 | 0 | 0.5 | 0.9 | 0 | 0 |

Table 9a. Section V: Special Cases (Students matriculated before January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|--------------------------|-------|--------------------------|-------|--------------------|--------|---------|
| Geriatric, 65+ years | 1,765 | 50 | 232.8 | 74.2 | 223 | 73 |
| Pediatric, 2-12 years | 1,765 | 25 | 71.9 | 36.8 | 64 | 25 |
| Pediatric, under 2 years | 1,765 | 10 | 22.4 | 12.4 | 19 | 10 |
| Neonatal, under 4 weeks | 1,765 | 0 | 1.7 | 2.3 | 1 | 0 |
| Trauma/Emergency | 1,765 | 30 | 56.6 | 25.8 | 50 | 30 |
| Ambulatory/Outpatient | 1,765 | 100 | 424.8 | 175.1 | 414 | 100 |
| Obstetrical Mgmt Total | 1,765 | 30 | 68.8 | 36.1 | 58 | 30 |
| Obstetr Mgmt Cesarean | 1,765 | 10 | 31.6 | 16.2 | 28 | 10 |
| Obstetr Mgmt Analgesia | 1,765 | 10 | 38.8 | 26.0 | 32 | 10 |

Table 9b. Section V: Special Cases (Students matriculated post-January 1, 2015)

| Area | N | Number of | | Standard | | |
|----------------------------|-----|----------------|-------|-----------|--------|---------|
| | | Cases Required | Mean | Deviation | Median | Minimum |
| Geriatric, 65+ years | 693 | 100 | 256.2 | 74.1 | 244 | 112 |
| Pediatric, 2-12 years | 693 | 30 | 77.3 | 35.7 | 69 | 30 |
| Pediatric, under 2 years | 693 | 10 | 23.6 | 12.4 | 20 | 10 |
| Neonatal, under 4 weeks | 693 | 0 | 1.6 | 2.1 | 1 | 0 |
| Trauma/Emergency | 693 | 30 | 56.8 | 22.3 | 51 | 30 |
| Obstetrical Management | 693 | 30 | 76.2 | 40.3 | 66 | 30 |
| Cesarean delivery | 693 | 10 | 39.0 | 21.6 | 35 | 10 |
| Analgesia for labor | 693 | 10 | 38.0 | 27.1 | 30 | 10 |
| Pain Management Encounters | 693 | 15 | 52.0 | 51.4 | 38 | 15 |

Table 10. Section VI: Position Categories (Students matriculated before January 1, 2015)*

| Area | N | Number of Cases | | Standard | | |
|-----------|-------|-----------------|------|-----------|--------|---------|
| | | Required | Mean | Deviation | Median | Minimum |
| Prone | 1,765 | 20 | 52.7 | 27.8 | 47 | 20 |
| Lithotomy | 1,765 | 25 | 85.6 | 32.1 | 82 | 25 |
| Lateral | 1,765 | 5 | 87.6 | 51.8 | 74 | 9 |
| Sitting | 1,765 | 5 | 25.9 | 22.9 | 19 | 5 |

*After January 1, 2015, clinical experience by position is no longer tracked.

Table 11a. Section VII: Anatomical Categories (Students matriculated before January 1, 2015)

| Area | N | Number of | | Standard | | |
|-------------------------------|-------|----------------|-------|-----------|--------|---------|
| | | Cases Required | Mean | Deviation | Median | Minimum |
| Intra-abdominal | 1,765 | 75 | 181.3 | 59.6 | 170 | 75 |
| Extrathoracic | 1,765 | 15 | 34.8 | 81.8 | 30 | 15 |
| Extremities | 1,765 | 50 | 170.0 | 62.8 | 160 | 50 |
| Perineal | 1,765 | 15 | 100.0 | 48.9 | 90 | 15 |
| Head, Extracranial | 1,765 | 15 | 68.5 | 35.9 | 61 | 15 |
| Head, Intracranial | 1,765 | 5 | 14.7 | 8.7 | 13 | 5 |
| Head, Oropharyngeal | 1,765 | 20 | 95.6 | 52.4 | 85 | 20 |
| Intrathoracic | 1,765 | 15 | 36.7 | 15.3 | 33 | 15 |
| Heart | 1,765 | 5 | 19.6 | 11.0 | 17 | 5 |
| Heart, Intrathoracic with CPB | 1,765 | 0 | 12.4 | 8.5 | 11 | 0 |
| Heart, Intrathoracic w/o CPB | 1,765 | 0 | 4.4 | 5.7 | 3 | 0 |
| Lung | 1,765 | 5 | 10.7 | 5.4 | 9 | 5 |
| Intrathoracic, Other | 1,765 | 0 | 2.8 | 4.8 | 0 | 0 |
| Neck | 1,765 | 5 | 23.4 | 10.9 | 22 | 5 |
| Neuroskeletal | 1,765 | 20 | 44.4 | 25.7 | 39 | 20 |
| Vascular | 1,765 | 10 | 37.6 | 17.4 | 35 | 10 |
| Other | 1,765 | 0 | 8.9 | 26.0 | 0 | 0 |

Table 11b. Section VII: Anatomical Categories (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|------------------------|----------|---|-------------|-------------------------------|---------------|----------------|
| Intra-abdominal | 693 | 75 | 186.7 | 64.8 | 171 | 85 |
| Intracranial Total | 693 | 5 | 13.7 | 7.8 | 12 | 5 |
| Intracranial Open | 693 | 3 | 10.5 | 6.2 | 9 | 3 |
| Intracranial Closed | 693 | 0 | 3.2 | 4.2 | 2 | 0 |
| Oropharyngeal | 693 | 20 | 86.8 | 45 | 78 | 20 |
| Intrathoracic Total | 693 | 15 | 37.9 | 15.9 | 34 | 15 |
| Heart | 693 | 5 | 21.3 | 11.5 | 18 | 5 |
| Open Heart Total | 693 | 5 | 17.7 | 10.1 | 16 | 5 |
| Open Heart with CPB | 693 | 0 | 14.8 | 8.7 | 13 | 0 |
| Open Heart without CPB | 693 | 0 | 3 | 4.2 | 2 | 0 |
| Closed Heart | 693 | 0 | 3.5 | 4.7 | 1 | 0 |
| Lung | 693 | 5 | 11.5 | 6.2 | 10 | 5 |
| Other | 693 | 0 | 5.1 | 6 | 4 | 0 |
| Neck | 693 | 5 | 22.6 | 9.9 | 21 | 5 |
| Neuroskeletal | 693 | 20 | 48.4 | 23 | 43 | 20 |
| Vascular | 693 | 10 | 38 | 18 | 35 | 10 |

Table 12. Section VIII: Pharmacological Agents (Students matriculated before January 1, 2015)*

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|---|----------|---|-------------|-------------------------------|---------------|----------------|
| Inhalation Agents | 1,765 | 200 | 574.1 | 116.8 | 569 | 200 |
| Intravenous Induction Agents | 1,765 | 200 | 696.3 | 180.5 | 678 | 200 |
| Intravenous Agents, Muscle Relaxants | 1,765 | 200 | 442.6 | 109.0 | 429 | 200 |
| Intravenous Agents, Opioids | 1,765 | 200 | 750.2 | 321.8 | 688 | 200 |

*After January 1, 2015, clinical experience by pharmacological agent is no longer tracked.

Table 13a. Section IX: Methods of Anesthesia (Students matriculated before January 1, 2015)

| Area | N | Number of | | Standard | Median | Minimum | |
|---|-------|-----------|----------|----------|--------|---------|------|
| | | Cases | Required | | | | Mean |
| General Anesthesia | 1,765 | 350 | | 606.6 | 121.8 | 595 | 352 |
| Intravenous Induction | 1,765 | 200 | | 517.7 | 129.6 | 508 | 200 |
| Inhalation Induction | 1,765 | 10 | | 87.6 | 47.0 | 80 | 11 |
| Mask Management | 1,765 | 25 | | 64.0 | 77.3 | 41 | 25 |
| LMA | 1,765 | 25 | | 108.4 | 49.1 | 100 | 25 |
| Tracheal Intubation/Oral | 1,765 | 200 | | 380.1 | 81.3 | 372 | 203 |
| Tracheal Intubation/Nasal | 1,765 | 0 | | 18.7 | 16.1 | 15 | 0 |
| Total Intravenous Anesthesia | 1,765 | 10 | | 58.7 | 58.2 | 38 | 10 |
| Emergence from Anesthesia | 1,765 | 200 | | 571.9 | 141.4 | 556 | 217 |
| Monitored Anesthesia Care | 1,765 | 25 | | 154.1 | 90.0 | 136 | 25 |
| Regional/Management | 1,765 | 30 | | 107.3 | 66.6 | 91 | 30 |
| Administration | 1,765 | 25 | | 113.3 | 68.1 | 97 | 25 |
| Spinal | 1,765 | 1 | | 43.3 | 29.1 | 36 | 1 |
| Epidural | 1,765 | 1 | | 36.9 | 27.2 | 30 | 1 |
| Peripheral | 1,765 | 1 | | 33.1 | 37.2 | 22 | 1 |
| Methods Regional Admin Peripheral Upper | 1,765 | 0 | | 12.4 | 16.3 | 7 | 0 |
| Methods Regional Admin Peripheral Lower | 1,765 | 0 | | 14.5 | 22.2 | 8 | 0 |
| Methods Regional Admin Peripheral Other | 1,765 | 0 | | 2.0 | 5.6 | 0 | 0 |

Table 13b. Section IX: Methods of Anesthesia (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|--|-----|--------------------------|-------|--------------------|--------|---------|
| General Anesthesia | 693 | 400 | 635 | 132.9 | 612 | 400 |
| Inhalation Induction | 693 | 25 | 91.8 | 57.6 | 80 | 25 |
| Mask Management | 693 | 25 | 55.7 | 46.7 | 42 | 25 |
| Supraglottic Airway Devices (total of a & b) | 693 | 35 | 126.5 | 57.8 | 118 | 36 |
| a. Laryngeal mask | 693 | - | 123 | 55.2 | 116 | 36 |
| b. Other | 693 | - | 3.4 | 12.9 | 0 | 0 |
| Tracheal Intubation (total of a & b) | 693 | 250 | 412.2 | 95.6 | 395 | 250 |
| a. Oral | 693 | - | 396.9 | 90.8 | 380 | 223 |
| b. Nasal | 693 | - | 15.2 | 11.9 | 12 | 0 |
| Alternative Tracheal Intub/Endo (total of a & b) | 693 | 25 | 84.4 | 57.2 | 75 | 30 |
| a. Endoscopic techniques, total | 693 | 5 | 15.1 | 16.8 | 9 | 5 |
| 1. Actual Placement | 693 | - | 10.2 | 14.6 | 5 | 0 |
| 2. Simulated Placement | 693 | - | 4.9 | 10.6 | 3 | 0 |
| 3. Airway Assessment | 693 | - | 7.8 | 36.2 | 5 | 0 |
| b. Other techniques | 693 | 5 | 46.2 | 29.2 | 41 | 5 |
| Emergence from Anesthesia | 693 | 300 | 607.4 | 142.8 | 590 | 318 |
| Regional Techniques | 693 | | | | | |
| Actual Administration (total of a, b, c,& d) | 693 | 35 | 126.6 | 70.2 | 110 | 36 |
| a. Spinal (total of 1 & 2) | 693 | 10 | 47.2 | 27 | 43 | 10 |
| 1. Spinal Anesthesia | 693 | - | 43.9 | 25.8 | 40 | 2 |
| 2. Spinal Pain Management | 693 | - | 3.3 | 7.2 | 1 | 0 |
| b. Epidural (total of 1 & 2) | 693 | 10 | 35.9 | 23 | 30 | 10 |
| 1. Epidural Anesthesia | 693 | - | 13.2 | 16.5 | 7 | 0 |
| 2. Epidural Pain Management | 693 | - | 22.6 | 20.6 | 18 | 0 |
| c. Peripheral (total of 1, 2, 3 & 4) | 693 | 10 | 39.4 | 49.9 | 23 | 10 |
| 1. Anesthesia Upper | 693 | - | 3.7 | 7.6 | 0 | 0 |
| 2. Anesthesia Lower | 693 | - | 9.6 | 16.5 | 6 | 0 |
| 3. Pain Management Upper | 693 | - | 6.4 | 12.5 | 2 | 0 |
| 4. Pain Management Lower | 693 | - | 10.2 | 23.5 | 2 | 0 |
| d. Other | 693 | | | | | |
| 1. Anesthesia | 693 | - | 2.2 | 5.9 | 0 | 0 |
| 2. Pain Management | 693 | - | 3.7 | 12.8 | 0 | 0 |
| Management (total of 1 & 2) | 693 | 35 | 105.3 | 55.5 | 93 | 35 |
| 1. Anesthesia | 693 | - | 70.2 | 41.8 | 65 | 0 |
| 2. Pain Management | 693 | - | 35 | 35.1 | 26 | 0 |
| Moderate/deep sedation | 693 | 25 | 125.7 | 78.2 | 111 | 25 |

Table 14a. Section X: Arterial Technique (Students matriculated before January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|---|-------|--------------------------|------|--------------------|--------|---------|
| Arterial Puncture/Catheter Insertion | 1,765 | 25 | 55.8 | 25.0 | 50 | 25 |
| Intraarterial Blood Pressure Monitoring | 1,765 | 30 | 79.9 | 29.1 | 75 | 25 |

Table 14b. Section X: Arterial Technique (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|---|-----|--------------------------|------|--------------------|--------|---------|
| Arterial Puncture/Catheter Insertion | 693 | 25 | 52.9 | 21.3 | 49 | 25 |
| Intraarterial Blood Pressure Monitoring | 693 | 30 | 78.8 | 28.5 | 75 | 30 |

Table 15a. Section XI: Central Venous Pressure Catheter (Students matriculated before January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|---|-------|--------------------------|------|--------------------|--------|---------|
| Placement | 1,765 | 5 | 14.0 | 10.1 | 11 | 5 |
| Monitoring | 1,765 | 15 | 25.7 | 11.0 | 22 | 15 |
| Central Venous Pressure Catheter, Actual, Total | 1,765 | - | 11.1 | 10.4 | 9 | 0 |
| Central Venous Pressure Catheter, Actual PICC | 1,765 | - | 0.8 | 2.6 | 0 | 0 |
| Central Venous Pressure Catheter, Actual Non-PICC | 1,765 | - | 10.9 | 10.7 | 68 | 0 |
| Central Venous Pressure Catheter, Simulated | 1,765 | - | 2.9 | 3.8 | 2 | 0 |

Table 15b. Section XI: Central Venous Pressure Catheter (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|-------------------------------------|-----|--------------------------|------|--------------------|--------|---------|
| Placement—Non-PICC (total of a & b) | 693 | 10 | 14.7 | 6.2 | 12 | 10 |
| a. Non-PICC, Actual | 693 | - | 9.3 | 8.1 | 9 | 0 |
| b. Non-PICC, Simulated | 693 | - | 5.4 | 4.7 | 4 | 0 |
| Placement—PICC (total of a & b) | | | | | | |
| a. PICC, Actual | 693 | - | 0.3 | 1.1 | 0 | 0 |
| b. PICC, Simulated | 693 | - | 1.1 | 2.8 | 0 | 0 |
| Monitoring | 693 | 15 | 26.2 | 11.1 | 23 | 15 |

Table 16a. Section XII: Pulmonary Artery Catheter (Students matriculated before January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|------------|-------|--------------------------|------|--------------------|--------|---------|
| Placement | 1,765 | 0 | 5.8 | 7.2 | 3 | 0 |
| Monitoring | 1,765 | 0 | 12.5 | 8.4 | 12 | 0 |

Table 16b. Section XII: Pulmonary Artery Catheter (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|------------|-----|--------------------------|------|--------------------|--------|---------|
| Placement | 693 | 0 | 4.4 | 5.6 | 2 | 0 |
| Monitoring | 693 | 0 | 12.2 | 8.9 | 11 | 0 |

Table 17a. Section XIII: Other (Students matriculated before January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|---------------------------------------|-------|--------------------------|-------|--------------------|--------|---------|
| Intravenous Catheter Placement | 1,765 | 100 | 209.8 | 117.2 | 171 | 100 |
| Mechanical Ventilation | 1,765 | 200 | 490.1 | 114.2 | 488 | 200 |
| Pain Management | 1,765 | 0 | 30.3 | 51.9 | 13 | 0 |
| Alternative Airway | 1,765 | 10 | 59.0 | 38.9 | 53 | 11 |
| Alt Airway Mgmt: Fiberoptic Total | 1,765 | 5 | 19.1 | 24.8 | 13 | 5 |
| Alt Airway Mgmt: Fiberoptic Actual | 1,765 | - | 8.0 | 16.6 | 5 | 0 |
| Alt Airway Mgmt: Fiberoptic Simulated | 1,765 | - | 2.4 | 6.5 | 0 | 0 |
| Alt Airway Mgmt: Fiberoptic Assessmt | 1,765 | - | 9.0 | 14.6 | 7 | 0 |
| Other Ultrasound | 1,765 | - | 9.4 | 23.6 | 0 | 0 |
| Other Ultrasound Regional | 1,765 | - | 14.9 | 24.4 | 5 | 0 |
| Other Ultrasound Vascular | 1,765 | - | 8.2 | 12.1 | 3 | 0 |
| Other Techniques | 1,765 | 5 | 39.5 | 26.3 | 36 | 5 |

Table 17b. Section XIII: Other (Students matriculated post-January 1, 2015)

| Area | N | Number of Cases Required | Mean | Standard Deviation | Median | Minimum |
|--|-----|--------------------------|-------|--------------------|--------|---------|
| Ultrasound (US)-Guided Techniques (total of a & b) | 693 | - | 30.0 | 37.4 | 18 | 0 |
| a. Regional | 693 | - | 22.6 | 33.5 | 11 | 0 |
| b. Vascular | 693 | - | 7.4 | 10.2 | 4 | 0 |
| Intravenous Catheter Placement | 693 | 100 | 186.0 | 103.8 | 150 | 100 |
| Advanced Noninvasive Hemodynamic Monitoring | 693 | 0 | - | - | - | - |

Exit Survey Results

Candidates provide important ongoing sources of evaluative information about the examination process. This information serves as essential input for the continuous quality improvement initiatives of the NBCRNA. Candidates are asked to complete a post-examination survey regarding their testing experience. The post-examination survey addressed the following four areas:

- Six 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 aspects of the examination experience such as readability, fairness of test questions, and use of testing software;
- Six statements related to examinee perception of the alternative question formats; and
- Three statements related to exam preparation.

Most of the questions employ a Likert-type rating scale, by which respondents indicate their level of agreement with the survey statements. For the purposes of this report, the Likert response categories, *Strongly Agree* and *Agree*, are combined into a single *Agree* category, and *Strongly Disagree* and *Disagree* are combined into *Disagree*. The survey questions and format were developed by the NBCRNA and representatives from 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 the questions, as reflected by the unequal sample size across the sections of the survey.

Responses were analyzed based on a sample of NCE test takers who were administered the exit survey during the period of September 1, 2016, through August 31, 2017 (FY17). After each test administration, the test taker can 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. The responses to the first statement, not included in the table below, indicate that nearly all (96.9%) of the NCE candidates scheduled their examination on the Internet. Responses to the other six survey questions are summarized in **Table 18**.

Table 18. Responses to Survey Questions: Scheduling and Registration
(N=1,543 with about 0.5% omitted responses to some questions)

| Survey Question | Agree | | Disagree | |
|--|-------|---------|----------|---------|
| | Count | Percent | Count | Percent |
| I was able to schedule an acceptable test date. | 1,435 | 93.0% | 105 | 6.8% |
| I was able to schedule an acceptable test center location. | 1,473 | 95.5% | 61 | 4.0% |
| The Exam Reservation process was easy to use. | 1,518 | 98.4% | 15 | 1.0% |
| The test center was easy to locate. | 1,509 | 97.8% | 26 | 1.7% |
| The test center staff was helpful and knowledgeable. | 1,529 | 99.1% | 5 | 0.3% |
| The testing center Registration/Check-In Process was handled in a professional and efficient manner. | 1,522 | 98.6% | 12 | 0.8% |

The next nine statements relate to mid-administration topics such as the fairness of test questions and readability of the examination. **Table 19** summarizes the responses to these survey questions. Overall (98.3% agreement), the FY 2017 NCE examinees were satisfied with their testing experience.

Table 19. Responses to Survey Questions: Examination and Testing Experience (N=1,576 with about 1.0% omitted responses to some questions)

| Survey Question | Agree | | Disagree | |
|--|-------|---------|----------|---------|
| | Count | Percent | Count | Percent |
| I thought the examination questions were fair. | 1,357 | 86.1% | 205 | 13.0% |
| The graphs, figures, and diagrams in the questions were easy to read. | 1,452 | 92.1% | 104 | 6.6% |
| The graphs, figures, and diagrams in the questions fit onto the screen. | 1,313 | 83.3% | 236 | 15.0% |
| I was able to 'scroll' the test window in order to view an entire graph or figure in a question. | 1,532 | 97.2% | 15 | 1.0% |
| The areas of the content outline were fairly represented. | 1,362 | 86.4% | 200 | 12.7% |
| My testing environment was clean, quiet, and comfortable. | 1,514 | 98.1% | 22 | 1.4% |
| I encountered no technical problems with the test administration software. | 1,504 | 97.5% | 31 | 2.0% |
| The test administration software was user-friendly. | 1,524 | 98.8% | 11 | 0.7% |
| Overall, I was satisfied with my testing experience. | 1,516 | 98.3% | 17 | 1.1% |

Since August 2009, the NBCRNA has administered alternative question formats on the NCE in addition to traditional multiple-choice items. These question formats include multiple correct response (MCR, where the examinee is asked to select an indicated number of correct responses), short answer/calculation (SA, where the examinee types in short, numerical responses), drag and drop (used for matching or ordering questions), and hotspot (where an examinee points and clicks on the correct region of an image). Of all 3,110 takers of NCE in FY 2017, about half (N = 1,576) of them provided feedback on these question formats. **Table 20** summarizes the responses to six survey questions related to the MCR, SA, drag and drop, and hotspot question formats.

Table 20. Responses to Survey Questions: Alternative Question Formats (N=1,576 with about 1.0% omitted responses to different questions)

| Survey Question | Agree | | Disagree | |
|--|-------|---------|----------|---------|
| | Count | Percent | Count | Percent |
| The questions in the Multiple Correct Response format were fair. | 1,423 | 90.3% | 135 | 8.6% |
| The questions in the Short Answer/Calculation format were fair. | 1,500 | 95.2% | 61 | 3.9% |
| The questions in the Drag and Drop format were fair. | 1,479 | 93.8% | 80 | 5.1% |
| The questions in the Hotspot format were fair. | 1,441 | 91.4% | 118 | 7.5% |
| I understood how to respond to the questions in the alternative formats. | 1,520 | 96.4% | 41 | 2.6% |
| I needed help figuring out how to respond to the questions in the alternative formats. | 544 | 34.5% | 1,014 | 64.3% |

Responses to the last three items on the exit survey, addressing methods that candidates used to prepare for the examination, are summarized in **Table 21**. Of the NCE examinees testing in FY 2017, 59.8% stated that the SEE helped them. Of 1,567 who responded to the question regarding preparation for this examination, all attended a review course. Finally, 85.1% reported that their nurse anesthesia educational program featured computerized testing.

**Table 21. Responses to Survey Questions: Preparation for the NCE
(N=1,576 with about 0.5%-1.0% omitted responses to different questions)**

| Survey Question | Response | Count | Percent |
|--|--------------------------------------|--------------|----------------|
| Taking the SEE helped prepare me to take the certification examination. | Agree | 942 | 59.8% |
| | Disagree | 482 | 30.6% |
| If you took a review course in preparation for this examination, please indicate below which review course you took. | Valley Anesthesia | 714 | 45.3% |
| | Core Concepts | 121 | 7.7% |
| | Howard Review | 3 | 0.2% |
| | R&R Board Review | 0 | 0.0% |
| | PACES | 121 | 7.7% |
| | CRNA Secrets | 2 | 0.1% |
| | Review Course at AANA Annual Meeting | 0 | 0.0% |
| | NARC4U | 0 | 0.0% |
| | APEX Anesthesia Review | 438 | 27.8% |
| | Other commercial | 45 | 2.9% |
| | Course Organized by My Program | 123 | 7.8% |
| Did Not Take | 0 | 0.0% | |
| Please indicate below if your nurse anesthesia educational program featured any academic tests using computer based testing. | Yes | 1,341 | 85.1% |
| | No | 225 | 14.3% |

Demographic Characteristics of the SEE Candidate Population, FY 2017

The following tables summarize performance on the SEE according to demographic variables, including gender, age, clinical background, and degree. Within each demographic, the scores are presented by year in the program. Also, the column in the extreme-right of each table displays the five-year trend average (FY 2012–FY 2017, or September 1, 2012–August 31, 2017, N = 16,695) for each demographic subgroup. In addition, summaries of SEE total scores and domain-level information can be found in **Table A3** of Appendix A.

Table 22 summarizes SEE scores by gender: 41.5% of SEE examinees were male, and 58.5% were female. The mean total score for Year-2 examinees (402.9) was higher than the mean total score for Year-1 examinees (393.0). The mean SEE score for the Year-3-and-above students was highest at 410.3.

The five-year trend information (last column) shows a similar pattern. Average scores for Year-2 and Year-3-and-above students are very similar, and consistently higher than Year-1 students. Also, males consistently attained slightly higher scores on the SEE than females.

Table 22. SEE Candidate Performance by Gender and Program Year, FY 2017

| Program Year | Gender | Count | Mean | Standard Deviation | 5-Year Trend Mean |
|------------------|--------------|--------------|--------------|--------------------|-------------------|
| Year 1 | Female | 176 | 386.6 | 37.8 | 385.8 |
| | Male | 162 | 400.1 | 43.0 | 400.4 |
| | Total | 338 | 393.0 | 40.9 | 392.0 |
| Year 2 | Female | 1,061 | 398.5 | 42.0 | 395.6 |
| | Male | 740 | 409.1 | 43.3 | 405.1 |
| | Total | 1,801 | 402.9 | 42.9 | 399.3 |
| Year 3 and above | Female | 1,011 | 406.4 | 43.1 | 399.0 |
| | Male | 695 | 416.0 | 43.8 | 410.1 |
| | Total | 1,706 | 410.3 | 43.6 | 403.2 |
| Total | Female | 2,248 | 401.1 | 42.6 | 395.9 |
| | Male | 1,597 | 411.2 | 43.8 | 406.3 |
| | Total | 3,845 | 405.3 | 43.3 | 400.0 |

Table 23 summarizes SEE scores by age group. The average age of Year-1 SEE examinees was 31.6 years. The average age of Year-2 SEE examinees was 31.2 years. The average age of Year-3 SEE examinees was 32.0 years. The mean age of all SEE examinees during the period was 31.6 years, on average similar to the sample of first-time NCE examinees (31.9 years). The largest age group was composed of examinees under the age of 30 (43.1%). Examinees between the ages of 30 and 35 comprised a slightly smaller subgroup (38.7%). In FY 2017, examinees under 30 years of age scored higher on the SEE than examinees in other age groups. The same result was found in the five-year trending sample.

Table 23. SEE Candidate Performance by Age and Program Year, FY 2017

| Program Year | Age | Count | Mean | Standard Deviation | 5-Year Trend Mean |
|---------------------|--------------|--------------|--------------|---------------------------|--------------------------|
| Year 1 | Under 30 | 138 | 397.6 | 37.9 | 391.4 |
| | 30-35 | 140 | 392.6 | 40.7 | 394.7 |
| | 36-39 | 32 | 386.5 | 44.8 | 393.8 |
| | 40 and over | 28 | 380.2 | 49.3 | 381.0 |
| | Total | 338 | 393.0 | 40.9 | 392.0 |
| Year 2 | Under 30 | 836 | 407.4 | 43.3 | 402.6 |
| | 30-35 | 668 | 402.1 | 41.9 | 399.5 |
| | 36-39 | 170 | 392.2 | 38.0 | 391.4 |
| | 40 and over | 127 | 391.7 | 46.6 | 391.0 |
| | Total | 1,801 | 402.9 | 42.9 | 399.3 |
| Year 3 and above | Under 30 | 685 | 416.7 | 43.5 | 407.5 |
| | 30-35 | 680 | 410.9 | 42.1 | 403.3 |
| | 36-39 | 176 | 400.5 | 44.8 | 398.6 |
| | 40 and over | 165 | 391.4 | 42.1 | 393.4 |
| | Total | 1,706 | 410.3 | 43.6 | 403.2 |
| Total | Under 30 | 1,659 | 410.4 | 43.4 | 402.8 |
| | 30-35 | 1,488 | 405.2 | 42.3 | 400.4 |
| | 36-39 | 378 | 395.6 | 42.0 | 394.4 |
| | 40 and over | 320 | 390.5 | 44.6 | 391.3 |
| | Total | 3,845 | 405.3 | 43.3 | 400.0 |

Table 24 displays summaries of SEE scores by clinical background. Overall, the most commonly identified clinical setting was ICU/CCU (36.2%).

When comparing pass rates across clinical background subgroups, readers are advised to refer to the five-year trend columns of Table 24. The averages in these columns are more reliable because they are based on much larger sample sizes.

Table 24. SEE Candidate Performance by Clinical Background and Program Year, FY 2017

| | Clinical Background | Count | Mean | Std Dev | 5-Yr Mean | Program Year | Clinical Background | Count | Mean | Std Dev | 5-Yr Mean |
|--------|---------------------|--------------|--------------|-------------|--------------|----------------|---------------------|--------------|-------------|--------------|-----------|
| Year 1 | CCU | 44 | 394.6 | 39.3 | 394.2 | Year 3 & above | CCU | 163 | 412.0 | 43.2 | 405.1 |
| | ER | 40 | 388.8 | 57.4 | 395.2 | | ER | 143 | 410.9 | 46.5 | 406.5 |
| | ICU/CCU | 140 | 392.4 | 38.4 | 390.5 | | ICU/CCU | 631 | 410.0 | 43.7 | 404.3 |
| | MICU | 30 | 394.2 | 33.4 | 391.8 | | MICU | 193 | 412.8 | 42.6 | 403.9 |
| | NEURO ICU | 7 | 404.7 | 48.4 | 389.0 | | NEURO ICU | 87 | 408.3 | 40.0 | 400.6 |
| | NICU | 5 | 386.8 | 32.8 | 359.1 | | NICU | 27 | 398.9 | 37.5 | 395.8 |
| | OR | 4 | 360.8 | 62.8 | 381.5 | | OR | 11 | 406.6 | 38.4 | 401.1 |
| | PACU | 4 | 392.5 | 39.6 | 380.9 | | PACU | 16 | 414.1 | 33.3 | 405.7 |
| | PICU | 14 | 398.3 | 29.8 | 401.0 | | PICU | 56 | 410.3 | 39.8 | 398.7 |
| | SICU | 32 | 394.5 | 41.0 | 395.0 | | SICU | 220 | 411.2 | 46.1 | 401.7 |
| | Trauma ICU | 14 | 402.9 | 43.0 | 391.1 | | Trauma ICU | 96 | 400.5 | 43.5 | 402.5 |
| | Other | 4 | 386.8 | 18.6 | 394.0 | | Other | 63 | 419.2 | 45.7 | 403.1 |
| | Total | 338 | 393.0 | 40.9 | 392.0 | Total | 1,706 | 410.3 | 43.6 | 403.2 | |
| Year 2 | CCU | 228 | 406.3 | 43.0 | 401.5 | Total | CCU | 435 | 407.3 | 42.9 | 401.7 |
| | ER | 161 | 393.4 | 41.4 | 397.6 | | ER | 344 | 400.2 | 46.4 | 400.1 |
| | ICU/CCU | 619 | 399.3 | 43.4 | 397.5 | | ICU/CCU | 1,390 | 403.4 | 43.5 | 399.1 |
| | MICU | 256 | 408.4 | 40.6 | 403.7 | | MICU | 479 | 409.3 | 41.2 | 402.7 |
| | NEURO ICU | 111 | 399.2 | 39.9 | 400.3 | | NEURO ICU | 205 | 403.2 | 40.3 | 399.3 |
| | NICU | 30 | 393.2 | 42.8 | 390.1 | | NICU | 62 | 395.2 | 39.4 | 390.3 |
| | OR | 6 | 395.2 | 36.2 | 397.7 | | OR | 21 | 394.6 | 44.3 | 398.8 |
| | PACU | 11 | 381.2 | 30.5 | 395.7 | | PACU | 31 | 399.6 | 35.6 | 398.7 |
| | PICU | 47 | 410.6 | 45.6 | 400.0 | | PICU | 117 | 409.0 | 41.1 | 399.6 |
| | SICU | 221 | 410.2 | 44.8 | 401.5 | | SICU | 473 | 409.6 | 45.3 | 401.0 |
| | Trauma ICU | 70 | 402.2 | 41.6 | 395.2 | | Trauma ICU | 180 | 401.4 | 42.5 | 397.5 |
| | Other | 41 | 416.9 | 40.5 | 399.3 | | Other | 108 | 417.2 | 43.2 | 400.0 |
| | Total | 1,801 | 402.9 | 42.9 | 399.3 | Total | 3,845 | 405.3 | 43.3 | 400.0 | |

Table 25 displays summaries of SEE scores by degree to be attained. As is noted, starting in FY 2017, “Post-Master’s Certificate” is no longer reported as a separate category; instead, it is reported together with Other Masters degrees. Due to a transcript category change, MS Nurse Anesthesia/Anesthesiology is reported in the MS Nurse Anesthesia category, not in the Other Masters as in the past. Although MSN is still a popular degree, a smaller percentage of SEE candidates were enrolled in MSN programs in FY 2017 (28.2%) than in FY 2016 (32.6%). The number of SEE examinees in doctoral programs (N = 915, 23.8%) represents an increase over the previous fiscal year (N = 544, 18.4%). Score comparisons among groups in this table should be made with caution because of the small sample size of some subgroups.

Table 25. SEE Candidate Performance by Graduate Degree and Program Year, FY 2017

| Program Year | Degree Upon Completion | Count | Mean | Standard Deviation | 5-Year Trend Mean |
|---------------------|-------------------------------|--------------|--------------|---------------------------|--------------------------|
| Year 1 | MS Nurse Anesthesia | 197 | 397.2 | 37.6 | 398.1 |
| | MS Nursing Major | 85 | 399.0 | 37.1 | 389.9 |
| | Other Masters | 55 | 367.9 | 48.7 | 391.4 |
| | Doctoral | 1 | 436.0 | - | 373.8 |
| | Total | 338 | 393.0 | 40.9 | 392.0 |
| Year 2 | MS Nurse Anesthesia | 710 | 401.0 | 42.1 | 398.3 |
| | MS Nursing Major | 602 | 409.2 | 43.0 | 403.6 |
| | Other Masters | 223 | 411.9 | 44.8 | 399.0 |
| | Doctoral | 266 | 385.8 | 37.4 | 380.7 |
| | Total | 1,801 | 402.9 | 42.9 | 399.3 |
| Year 3 and above | MS Nurse Anesthesia | 530 | 404.7 | 44.3 | 402.3 |
| | MS Nursing Major | 399 | 422.1 | 45.5 | 407.3 |
| | Other Masters | 129 | 413.7 | 37.5 | 400.6 |
| | Doctoral | 648 | 407.0 | 41.7 | 398.9 |
| | Total | 1,706 | 410.3 | 43.6 | 403.2 |
| Total | MS Nurse Anesthesia | 1,437 | 401.9 | 42.4 | 399.6 |
| | MS Nursing Major | 1,086 | 413.1 | 44.1 | 403.2 |
| | Other Masters | 407 | 406.5 | 45.7 | 398.1 |
| | Doctoral | 915 | 400.8 | 41.6 | 392.2 |
| | Total | 3,845 | 405.3 | 43.3 | 400.0 |

When comparing pass rates across clinical background subgroups, readers are advised to refer to the five-year trend columns of Table 25. The averages in these columns are more reliable because they are based on much larger sample sizes.

Appendix A - Additional NCE and SEE Performance Data

Table A1. NCE Pass Rate Trends—First-Time Candidates 2008 through August 31, 2017

| Reporting Period | Percent Passing |
|-------------------------------|------------------------|
| 2008* (Graduates 2007 – 2008) | 89.9 |
| 2009 (Graduates after 2008) | 87.7 |
| 2010 | 88.9 |
| 2011 | 89.1 |
| FY 2012 | 88.5 |
| FY 2013 | 88.4 |
| FY 2014** | 87.8 |
| FY 2015 | 85.0 |
| FY 2016 | 84.5 |
| FY 2017 | 82.6 |

*Passing standard increased in August 2008

**Passing standard increased in January 2014

Table A2. Descriptive Statistics for NCE Scores and Domain-Level Information—First-Time Candidates FY 2017

| | Mean | Standard Deviation |
|---|-------------|---------------------------|
| Total Score | 491.8 | 44.8 |
| Basic Science | 498.4 | 61.0 |
| Equipment, Instrumentation and Technology | 501.0 | 73.0 |
| Basic Principles of Anesthesia | 498.6 | 58.1 |
| Advanced Principles of Anesthesia | 488.8 | 55.9 |

Table A3. Descriptive Statistics for SEE Scores and Domain-Level Information, FY 2017

| | 1st Year in Program | | 2nd Year in Program | | 3rd Year in Program | | All | |
|---|---------------------------------------|-----------|---------------------------------------|-----------|---------------------------------------|-----------|------------|-----------|
| | Avg | SD | Avg | SD | Avg | SD | Avg | SD |
| Total | 393.0 | 40.9 | 402.9 | 42.9 | 410.3 | 43.6 | 405.3 | 43.3 |
| Basic Science | 398.8 | 44.8 | 397.6 | 46.9 | 404.7 | 49.2 | 400.8 | 47.9 |
| Equipment, Instrumentation and Technology | 398.6 | 46.4 | 403.9 | 48.2 | 409.8 | 47.6 | 406.0 | 47.9 |
| Basic Principles of Anesthesia | 396.4 | 48.8 | 407.2 | 49.3 | 413.5 | 49.6 | 409.0 | 49.7 |
| Advanced Principles of Anesthesia | 382.4 | 47.6 | 406.5 | 49.3 | 416.8 | 49.4 | 409.0 | 50.1 |