NBCRNA

National Board of Certification & Recertification for Nurse Anesthetists

NCE and SEE Interpretive Guide Calendar Year 2021

January 1, 2021 – December 31, 2021

NCE INTERPRETIVE GUIDE Calendar Year 2021 (CY 2021)

Program Administrators may access summary score reports for the National Certification Examination (NCE) and the Self-Evaluation Examination (SEE) via the NBCRNA website through the Program Administrator's portal. The summary report will contain the results of all currently enrolled students or graduates of the program up to the most recent five years. Neither current students, nor program graduates, can request program summary or individual NCE or SEE score reports, as this reporting capability is limited to designated Program Administrators.

The information contained in this guide is intended to assist in interpreting NCE and SEE test takers' scores. The score summaries contained in this document are based on test taker performance in calendar year 2021 (CY 2021) from January 1, 2021 to December 31, 2021. The NBCRNA aligns its fiscal year with calendar year since 2019.

NCE

- Program Administrators:

  o The Program Administrator summary report is in Excel format. The report contains student name, test date, exam number, total scaled score, result (P/F), and content area scaled scores. The content areas are described in detail in the test content outline of the *National Certification Examination (NCE) Candidate Handbook*.
  o To calculate the first-time test taker average for the total scaled score and each content area score for your students, simply sort the Excel spreadsheet by exam number (1 for first-time takers), sum the candidate scores for your program, both for the total score and for the content area scores, and divide by the number of candidates for your program. Refer to the **NCE Example of Calculating an Average** that appears on the next page of this document. These averages can be compared to the national NCE means (total and content area scores) in Table 1 on page 2.
  o The scaled score is a transformation of the examinee's ability score estimated based on their test performance. The scaled score is listed for the total test and each of the content areas ranging from 0-900. The scaled score required to pass is 450 on the total test. Domain area scores are computed independently and cannot be averaged to produce the total test score.

- Students:

  o Compare your scores to the national NCE means in Table 1 on page 2.

NCE EXAMPLE OF CALCULATING AN AVERAGE

Report of NCE Takers for Program 0111
Test Dates 10/1/20XX to 12/1/20XX

Program	Exam	Name	Test Date	Exam No.	Total Score	Result	Score 1	Score 2	Score 3	Score 4
0111	CERT	Doe, F	11/19/20XX	1	413	F	410	306	454	419
0111	CERT	Doe, M	11/8/20XX	1	446	F	428	443	456	459
0111	CERT	Jane, E	11/2/20XX	1	497	P	482	459	499	501
0111	CERT	Jane, P	10/26/20XX	1	496	P	571	450	486	488
Total					1852		1891	1658	1895	1867
Average					463		472	414	473	466

(Average = Total Divided by number of test takers; in this case 4)
Score 1= Basic sciences
Score 2= Equipment, instrumentation and technology
Score 3= General principles of anesthesia
Score 4= Anesthesia for surgical procedures and special populations

Table 1. Descriptive Statistics for NCE Overall and Domain Scores—First-Time Candidates for CY 2021

	Mean	Standard Deviation
Total Score	494.6	46.1
Basic Science	498.5	66.1
Equipment, Instrumentation and Technology	504.4	72.4
General Principles of Anesthesia	496.9	58.8
Anesthesia for Surgical Procedures and Special Populations	497.9	54.8

SEE INTERPRETIVE GUIDE, Calendar Year 2021 (CY 2021)

The NBCRNA launched the reconfigured version Self-Evaluation Examination (SEE) on September 1, 2016 to mirror the content outline for the NCE. The length of the examination increased from 160 to 240 total questions with the testing time limit increased from three to four hours. The SEE content outline was modified again in May of 2018 to reflect the January 2018 revisions to the NCE content outline.

The information contained in this guide is intended to assist in interpreting test takers' SEE scores. This interpretive guide is based on the results data of test takers who took the SEE in calendar year 2021 (CY 2021). Students and Program Administrators may follow these instructions to compare SEE performance using the data tables contained within this guide. Starting in 2020, only calendar year Interpretive Guide is provided.

- Program Administrators:

  - The Program Administrator summary report is in Excel format. The report contains student name, test date, year in program, total scaled score, and content area scaled scores from 1-4. The content areas are described in detail in the test content outline of the *Self–Evaluation Examination (SEE) Candidate Handbook*.
  - The scaled score is listed for the total test and each of the content areas and is a transformation of the examinee's demonstrated ability measure. The scaled scores on the SEE range from 300-600.
  - To calculate the average for the SEE total scaled score and each content area score for your students, simply sum the candidate scores for your program, both for the total score and for the content area scores and divide by the number of candidates for your program. Refer to the ***SEE Example of Calculating an Average*** that appears next page.
  - These averages can be compared to the national SEE averages in Table 1 on next page and to the cumulative percentage tables starting on page 5.

SEE EXAMPLE OF CALCULATING AN AVERAGE

Report of SEE Takers for Program 0111
Test Dates 7/1/20XX to 7/31/20XX

Program	Exam	Name	Test Date	Year in Program	Total Score	Score 1	Score 2	Score 3	Score 4	Score 5
0111	NSEE	Doe, F	7/13/20XX	1	464	426	460	459	440	0
0111	NSEE	Doe, M	7/28/20XX	1	379	411	358	351	404	0
0111	NSEE	Jones, F	7/27/20XX	1	350	380	459	321	389	0
0111	NSEE	Jones, M	7/28/20XX	1	376	368	357	391	329	0
Total					1569	1585	1634	1522	1562	
Average					392	396	408	380	390	

(Average = Total divided by number of test takers; in this case 4)

The scores reflect the following content areas:

Score 1= Basic sciences
Score 2= Equipment, instrumentation and technology
Score 3= General principles of anesthesia
Score 4= Anesthesia for surgical procedures and special populations
Score 5= *Is intentionally left blank* **on or after** *September 1, 2016*

Table 1. Descriptive Statistics for SEE Overall and Domain Scores, CY 2021

	1st Year in Program		2nd Year in Program		3rd Year in Program		All	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD
Total	394.2	39.0	410.0	47.0	426.9	40.8	420.4	43.9
Basic Science	393.5	49.9	411.2	53.3	423.6	48.8	418.7	50.9
Equipment, Instrumentation and Technology	400.7	41.2	412.9	49.8	430.7	44.9	424.0	47.4
General Principles of Anesthesia	391.6	48.6	411.0	52.1	427.6	46.0	421.1	49.0
Anesthesia for Surgical Procedures and Special Populations	394.3	40.6	408.5	51.7	428.8	45.8	421.2	48.9

Students:

- Compare your scores to the cumulative percentage tables starting on page 5.

SEE CUMULATIVE PERCENTAGE TABLES

At the top of the following pages, the main headings list each of the content areas and the total test score. You can compare your individual or your students' performance with other students for each of these content areas by following the appropriate heading.

Under each main heading you will see groups of columns with subheadings as in the following example:

Basic Sciences

	Year 1 Cum %	Year 2 Cum %	Year 3&Up Cum %	All Cum %
401-410	67.4	48.2	37.9	42.1
411-420	72.2	56.3	46.0	50.1
421-430	77.1	64.1	54.4	58.2
431-440	81.9	70.2	62.4	65.5
441-450	87.5	76.5	70.3	72.8

To compare a score on "Basic Sciences," locate the column on your Program Administrator report labeled score 1 and find the student's scaled score. If the student's scaled score on this content area was 405, you would look down the first column on the cumulative percentage table for "Basic Sciences" until you found the score range of 401-410. The next column to the right, labeled "Year 1 Cum. %," lists the corresponding cumulative percentage of 67.4 for all first-year examinees. The 48.2 in the next column is the cumulative percentage for all second-year examinees. The 37.9 in the next column is the cumulative percentage for all third year and beyond examinees. The corresponding cumulative percentage of 42.1 for all examinees at that scaled score value is listed in the far-right column labeled "All Cum. %." This means that with a scaled score of 405 on "Basic Sciences," your student scored higher than or equal to 42.1% of all examinees on that content area. Score comparisons among Year 1 students should be made with caution because of the small sample size of this subgroup in CY 2021.

Students should use these tables in the same manner as Program Administrators to interpret their individual SEE performance across the content areas and total test.

Tables 2-6. SEE Descriptive Statistics, CY 2021

Score 1: Basic Sciences

	Year 1 Cum %	Year 2 Cum %	Year 3&Up Cum %	All Cum %
300-310	4.2	4.4	1.5	2.5
311-320	7.6	5.7	2.6	3.8
321-330	11.8	7.4	3.9	5.3
331-340	16.0	10.3	5.7	7.5
341-350	20.1	13.6	7.6	9.9
351-360	25.7	17.7	10.4	13.2
361-370	32.6	22.5	14.1	17.3
371-380	38.9	28.0	19.2	22.6
381-390	50.0	34.1	23.7	27.8
391-400	59.0	41.1	30.5	34.7
401-410	67.4	48.2	37.9	42.1
411-420	72.2	56.3	46.0	50.1
421-430	77.1	64.1	54.4	58.2
431-440	81.9	70.2	62.4	65.5
441-450	87.5	76.5	70.3	72.8
451-460	88.9	82.6	77.5	79.5
461-470	91.0	86.9	83.7	85.0
471-480	93.8	90.4	88.7	89.4
481-490	95.8	92.9	92.5	92.8
491-500	98.6	95.8	95.0	95.3
501-510	99.3	97.1	96.6	96.8
511-520	99.3	98.4	97.7	97.9
521-530	100.0	98.8	98.8	98.8
531-540	100.0	99.3	99.4	99.4
541-550	100.0	99.6	99.7	99.7
551-560	100.0	99.6	99.9	99.8
561-570	100.0	99.9	99.9	99.9
571-580	100.0	100.0	100.0	100.0
581-590	100.0	100.0	100.0	100.0
591-600	100.0	100.0	100.0	100.0

Score 2: Equipment, Instrumentation and Technology

	Year 1 Cum %	Year 2 Cum %	Year 3&Up Cum %	All Cum %
300-310	2.1	3.3	0.9	1.8
311-320	3.5	4.5	1.6	2.6
321-330	4.2	6.5	2.5	3.9
331-340	6.9	8.7	3.4	5.3
341-350	11.1	11.8	4.7	7.2
351-360	16.0	15.5	6.6	9.8
361-370	22.9	20.0	9.0	13.1
371-380	31.9	25.4	13.4	17.9
381-390	38.2	30.9	18.2	22.9
391-400	47.2	37.8	23.4	28.8
401-410	62.5	45.7	30.2	36.2
411-420	67.4	53.4	38.2	44.0
421-430	75.7	62.9	47.7	53.5
431-440	84.7	69.9	56.7	61.8
441-450	90.3	76.5	66.3	70.3
451-460	92.4	83.3	75.0	78.2
461-470	95.1	88.5	82.1	84.6
471-480	96.5	92.1	87.7	89.4
481-490	98.6	94.6	92.1	93.1
491-500	98.6	96.8	95.3	95.9
501-510	100.0	98.4	97.2	97.7
511-520	100.0	99.2	98.3	98.6
521-530	100.0	99.5	98.8	99.0
531-540	100.0	99.7	99.4	99.5
541-550	100.0	99.9	99.7	99.7
551-560	100.0	99.9	99.8	99.9
561-570	100.0	100.0	99.9	99.9
571-580	100.0	100.0	99.9	99.9
581-590	100.0	100.0	100.0	100.0
591-600	100.0	100.0	100.0	100.0

Score 3: General Principles of Anesthesia

	Year 1 Cum %	Year 2 Cum %	Year 3&Up Cum %	All Cum %
300-310	4.9	3.4	0.9	1.8
311-320	6.3	5.0	1.6	2.8
321-330	11.8	7.4	2.5	4.4
331-340	16.7	9.5	3.4	5.8
341-350	22.9	12.7	5.3	8.2
351-360	27.1	16.4	7.8	11.2
361-370	32.6	22.0	11.3	15.4
371-380	41.0	28.5	15.8	20.6
381-390	51.4	35.4	20.1	26.0
391-400	59.0	41.8	26.3	32.3
401-410	63.9	48.4	33.8	39.4
411-420	72.9	56.6	42.5	48.0
421-430	81.9	63.9	51.0	56.1
431-440	88.2	71.1	60.6	64.8
441-450	90.3	77.2	68.9	72.2
451-460	92.4	83.0	76.5	79.1
461-470	93.8	87.3	82.7	84.5
471-480	95.8	91.0	88.1	89.3
481-490	95.8	94.1	91.8	92.7
491-500	98.6	96.1	94.7	95.3
501-510	98.6	97.3	96.6	96.9
511-520	98.6	98.3	97.9	98.1
521-530	98.6	98.9	98.9	98.9
531-540	99.3	99.4	99.5	99.5
541-550	100.0	99.5	99.7	99.7
551-560	100.0	99.7	99.9	99.8
561-570	100.0	99.9	100.0	99.9
571-580	100.0	99.9	100.0	99.9
581-590	100.0	100.0	100.0	100.0
591-600	100.0	100.0	100.0	100.0

Score 4: Anesthesia for Surgical Procedures and Special Populations

	Year 1 Cum %	Year 2 Cum %	Year 3&Up Cum %	All Cum %
300-310	4.2	4.6	1.1	2.3
311-320	4.9	5.5	1.5	2.9
321-330	6.3	7.8	2.1	4.1
331-340	10.4	10.7	3.3	6.0
341-350	14.6	13.4	5.0	8.1
351-360	19.4	17.7	7.2	11.1
361-370	26.4	23.3	10.1	14.9
371-380	32.6	29.1	14.7	20.0
381-390	46.5	35.2	19.3	25.3
391-400	59.7	42.1	26.0	32.3
401-410	67.4	49.8	33.5	39.8
411-420	75.7	57.8	41.4	47.7
421-430	81.3	66.0	50.0	56.1
431-440	86.1	73.4	58.7	64.3
441-450	94.4	79.2	67.9	72.4
451-460	95.1	84.4	75.8	79.2
461-470	97.2	88.9	82.4	84.9
471-480	98.6	92.8	87.9	89.8
481-490	98.6	95.1	92.2	93.3
491-500	99.3	96.9	94.7	95.6
501-510	99.3	97.9	96.7	97.2
511-520	99.3	98.7	98.0	98.3
521-530	100.0	99.1	98.7	98.9
531-540	100.0	99.5	99.2	99.3
541-550	100.0	99.6	99.5	99.6
551-560	100.0	99.8	99.7	99.8
561-570	100.0	99.8	99.8	99.8
571-580	100.0	99.9	99.9	99.9
581-590	100.0	99.9	100.0	100.0
591-600	100.0	100.0	100.0	100.0

5. Overall Scaled Score for Total Test

	Year 1 Cum %	Year 2 Cum %	Year 3&Up Cum %	All Cum %
300-310	0.7	3.1	0.6	1.5
311-320	1.4	4.4	1.1	2.2
321-330	6.3	6.0	1.7	3.3
331-340	10.4	8.4	2.7	4.8
341-350	13.2	10.4	4.3	6.6
351-360	19.4	14.9	6.6	9.7
361-370	25.7	19.4	9.4	13.2
371-380	37.5	25.5	13.0	17.8
381-390	43.8	32.1	17.2	22.8
391-400	56.3	40.4	23.7	30.1
401-410	68.8	48.9	31.6	38.3
411-420	76.4	57.6	40.8	47.3
421-430	84.0	66.0	50.3	56.4
431-440	88.9	73.5	61.3	66.1
441-450	91.7	80.6	72.6	75.8
451-460	95.1	85.4	80.4	82.5
461-470	96.5	90.5	87.0	88.4
471-480	97.9	94.8	91.9	93.0
481-490	98.6	96.9	95.4	96.0
491-500	100.0	98.2	97.2	97.6
501-510	100.0	99.0	98.3	98.6
511-520	100.0	99.2	99.0	99.1
521-530	100.0	99.5	99.6	99.6
531-540	100.0	99.7	99.8	99.8
541-550	100.0	99.9	99.9	99.9
551-560	100.0	99.9	100.0	100.0
561-570	100.0	100.0	100.0	100.0
571-580	100.0	100.0	100.0	100.0
581-590	100.0	100.0	100.0	100.0
591-600	100.0	100.0	100.0	100.0