

Clinical Science Examination**Score Interpretation Guide**

NBME[®] subject examinations provide medical schools with a tool for measuring examinees' understanding of the clinical sciences. Items on this examination were written and reviewed by national test committees preparing material for Step 2 Clinical Knowledge (CK) of the United States Medical Licensing Examination[®]. Prior to publication, test forms are reviewed by a panel of course directors from this discipline. Although these examinations are designed to be broadly appropriate as part of overall examinee assessment, course objectives vary across schools, and the congruence between subject examination content and course objectives should be considered when interpreting test scores and determining grading standards. Specifically, subject examination scores should not be used alone, but rather in conjunction with other indicators of examinee performance in determination of grades.

Subject Examination Scores

The subject examination score is scaled to have a mean of 70 and a standard deviation of 8 for a group of approximately 20,000 first-time takers from 65 schools who took a Clinical Science Subject Examination as a final clerkship examination following rotations during the 1999-2002 academic years. As a result, the vast majority of scores range from 45 to 95, and although the scores have the "look and feel" of percent-correct scores, they are not. This scale provides a useful tool for comparing the scores of your examinees with those of a large, nationally representative group taking the examination as an end-of-clerkship assessment.

The subject examination scores are statistically equated across test administrations. Scores are statistically adjusted for shifts in test difficulty and consequently, can be used to track school and examinee performance over time.

Precision of Scores

Measurement error is present on all tests, and the standard error of measurement (SEM) provides an index of the (im)precision of scores. The SEM indicates how far an examinee's score on the examination might stray from his/her "true" proficiency level across repeated testing using different sets of items covering the same content. Using the SEM, it is possible to calculate a score interval that will encompass about two thirds of the observed scores for a given true score by adding and subtracting the SEM from that score. For this examination, the SEM is approximately 4 points. For example, if an examinee's true proficiency on the examination is 60, the score he/she achieved on the examination will usually (two times out of three) fall between 56 and 64 (60 - 4 and 60 + 4).

Score and Performance Feedback

Summary information on the examinee group tested, examination purpose and number of items scored is provided on each page of the feedback. The Roster of Scaled Scores reports a total test scaled score for each examinee. Reported scores also appear in a comma separated text file that can be downloaded and used to export scores. An Examinee Performance Profile, which graphically displays content areas of strength and weakness, is provided for each examinee.

If there were at least 2 examinees, Scaled Score Descriptive Statistics for reported scores are provided along with a Frequency Distribution of the total test scaled score. If there were at least 10 examinees for a single form administration, a detailed Content Area Item Analysis Report is provided. If there were at least 10 examinees for a single form administration or 20 examinees for a multiple form administration, a Summary Content Area Item Analysis Report is provided.

If examinees were tested at your school in the previous academic year, a Year-End Report is provided. The report summarizes the performance of first-time takers and is posted annually in November to the *NBME Services Portal (NSP)*.

Norms

Total year and quarterly norms are provided to help aid in the interpretation of examinee performance. The norms reflect the performance of first-time taker examinees who took a form of this examination as a final clerkship examination across an entire academic year. The two most recent sets of norms that have been developed for this examination are provided for your convenience. Norms will be updated in November to reflect the most recent academic year of data. Previous norms can be found on NSP.

Grading guidelines developed by clerkship directors are reported on the next page and the full study on NSP.



NATIONAL BOARD OF MEDICAL EXAMINERS®
Subject Examination Program

Clinical Science Examination

2012-2013 Academic Year Norms

The table below provides norms to aid in the interpretation of examinee performance. These norms reflect the performance of examinees from LCME-accredited medical schools who took a paper or web form of this examination as a final clerkship examination for the first time during the academic year from 8/1/2012 through 7/31/2013.

Percentile Ranks

Score	Percentile Ranks				
	Academic Year (n=12,000)	Quarter 1 (n=3,000)	Quarter 2 (n=2,000)	Quarter 3 (n=3,000)	Quarter 4 (n=2,000)
93 or above	98	99	98	98	98
92	98	98	98	98	97
91	97	98	98	97	96
90	97	97	97	96	96
89	95	96	96	95	94
88	95	96	96	94	94
87	93	95	94	91	91
86	91	93	93	90	90
85	89	91	90	88	86
84	87	89	88	85	84
83	85	88	86	84	82
82	82	85	83	80	79
81	79	82	80	77	75
80	74	78	74	71	71
79	70	75	70	67	67
78	65	70	65	62	61
77	60	65	61	57	57
76	55	60	56	51	52
75	50	55	51	46	46
74	44	50	47	41	40
73	39	44	42	36	35
72	34	39	36	31	29
71	29	34	30	26	25
70	25	30	27	22	21
69	20	24	21	18	17
68	17	21	17	15	15
67	13	16	13	11	11
66	11	13	11	9	9
65	7	9	8	6	6
64	6	7	6	5	5
63	5	6	5	4	4
62	3	5	3	3	3
61	2	3	2	2	2
60	2	2	2	1	1
59	1	2	1	1	1
58	1	1	1	1	1
57	1	1	0	1	1
56	0	1	0	0	0
55	0	0	0	0	0
54 and below	0	0	0	0	0
Mean	74.8	75.5	78.5	74.6	73.5
Standard Deviation	7.7	7.8	7.4	7.5	7.7

These norms allow you to compare your examinees' scores with the performance of this norm group across the entire academic year and by quarterly testing periods. Quarterly norms have been provided because scores in some subject examinations are progressively higher for examinees of equivalent ability who take the relevant clerkship later in the academic year. This information may have particular relevance to schools that have used the norm table in the development of grading guidelines. Since quarterly norms are based only on schools that supplied the start date of the first rotation for this subject, the number of examinees reported across quarters may not add up to the total norm group for the academic year.

The percentile ranks for each quarter are defined using the school reported start date of the first rotation for this subject. Using the start date of the first rotation, examinees are assigned to the appropriate quarter based on the assumption that their test date would be at least four weeks later. For example, if a school's start date for the first rotation is March, then the performance of examinees from that school that tested in April, May or June would be represented in the first quarter.

To use the table, locate an examinee's score and note the entry in the adjacent column labeled "Percentile Ranks" for the Academic Year or Quarterly testing period of interest.

For example, if an examinee's score is 75, the corresponding percentile rank entry of 50 for the Academic Year indicates that 50% of norm group examinees taking the examination during this academic year had scores at or below 75. In Quarter 4, the percentile rank for this score is 46.



National Board of Medical Examiners
Subject Examination Program
Scaled Score Descriptive Statistics
Gi V^W9I Ua

000000 - Generic Medical School

Test Date(s): 11/01/2013

Scaled score descriptive statistics (mean, standard deviation, lowest score, and highest score) for the examination administered on the specified test date(s) are listed below. Please refer to the *Score Interpretation Guide* for information about how to interpret the scores.

Reporting Group	Test Purpose	# Examinees	Order ID	Form	# Scored Items
Medical Students	End-Of-Course/ Clerkship	4	A00000	Subject Exam	100

Score Category	Description	Mean Score	Standard Deviation	Low Score	High Score
Total	Total Test	77	6.4	71	90

National Board of Medical Examiners
Subject Examination Program
Roster of Scaled Scores
 Gi V^W9I Ua

000000 - Generic Medical School

Test Date(s): 11/01/2013

The roster of scores contains scaled score(s) for each examinee who tested on the specified test date(s). These same scores also appear in a comma separated value text file that can be downloaded and used to export scores into your local database. Please refer to the *Score Interpretation Guide* for information about how to interpret the scores.

Reporting Group	Test Purpose	# Examinees	Order ID	Form	# Scored Items
Medical Students	End-Of-Course/ Clerkship	4	A00000	Subject Exam	100

ID	Name	Total
000000000	Student A	77
000000001	Student B	90
000000002	Student C	78
000000003	Student D	71

National Board of Medical Examiners
Subject Examination Program
Scaled Score Frequency Distribution
 Gi V^W9I Ua

000000 - Generic Medical School

Test Date(s): 11/01/2013

Reporting Group	Test Purpose	# Examinees	Order ID	Form	# Scored Items
Medical Students	End-Of-Course/ Clerkship	4	A00000	Subject Exam	100
		Total Scaled Score	Frequency		Cumulative Frequency
			Count	%	Count %
		71	1	25	1 25
		77	1	25	2 50
		78	1	25	3 75
		90	1	25	4 100