

Comprehensive Basic Science Examination**Score Interpretation Guide**

NBME[®] subject examinations provide medical schools with a tool for measuring examinees' understanding of the basic sciences. 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 a mean of 70 and a standard deviation of 8. A CBSE score of 70 is approximately equivalent to a score of 200 on the United States Medical Licensing Examination[®] (USMLE[®]) Step 1. 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. Because the CBSE and USMLE Step 1 cover very similar content, this scale provides a useful tool for comparing the scores of your examinees with those of a large, nationally representative group taking the licensing examination at the end of the second year of medical school. Additional information about the relationship between CBSE scores and USMLE Step 1 scores is provided in the table on the next page.

Unlike percent-correct scores, subject examination scores are statistically equated across test administrations. Scores are statistically adjusted for shifts in test difficulty across different forms of the examination. This makes it possible 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 3 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 57 and 63 ($60 - 3$ and $60 + 3$).

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.

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, a *Content Area Item Analysis Report* is provided.

If there were at least 15 examinees, a *School Summary Performance Profile* is provided.

An *Examinee Performance Profile*, which graphically displays content areas of strength and weakness, is provided for each examinee.

NATIONAL BOARD OF MEDICAL EXAMINERS®
Subject Examination Program

Comprehensive Basic Science Examination

Approximate USMLE Performance Equivalents

The table below provides approximate performance equivalents for USMLE Step 1, making it possible for you to translate the CBSE scores of your examinees to the scale used for USMLE Step 1. *Specific information on USMLE Step 1 and the current minimum passing score is available on the USMLE web site at www.usmle.org.*

To use the table, locate an examinee's CBSE score in the associated column and note the entry in the column labeled "Step 1 Equivalent". For example, if an examinee's score is 62, the corresponding entry of 180 indicates that the examinee's performance on the CBSE is approximately equivalent to a Step 1 score of 180.

NOTE: This examination is not intended to predict performance on USMLE. Rather, it is intended to be used as a tool to determine an examinee's relative areas of strength and weakness in general topic areas.

Approximate Step 1 Equivalents			
CBSE Score	Step 1 Equivalent	CBSE Score	Step 1 Equivalent
≥94	≥260	68	195
92	255	66	190
90	250	64	185
88	245	62	180
86	240	60	175
84	235	58	170
82	230	56	165
80	225	54	160
78	220	52	155
76	215	50	150
74	210	48	145
72	205	46	140
70	200	≤44	≤135

Norms for Examinee Performance

The table below provides norms to aid in the interpretation of examinee performance. The norms reflect the performance of a group comprised of 20,200 examinees from LCME-accredited medical schools who took a paper or web version of the CBSE for the first time during the 2008-09, 2009-10 and 2010-11 academic years (7/1/2008 – 6/30/11). **This group had a mean of 64 and a standard deviation of 10 on the CBSE score scale.**

To use the table, locate an examinee's CBSE score in the associated column and note the entry in the column labeled "Percentile Rank". For example, if an examinee's score is 70, the corresponding percentile rank of 77 indicates that 77% of the national group of examinees taking this examination had scores at or below 70.

2008-2011 Academic Years' Norms			
CBSE Score	Percentile Rank	CBSE Score	Percentile Rank
≥93	99	73	83
92	99	72	81
91	99	71	79
90	99	70	77
89	98	69	74
88	98	68	71
87	98	67	67
86	98	66	64
85	97	65	60
84	97	64	57
83	96	63	53
82	95	62	50
81	94	61	45
80	94	60	40
79	93	59	37
78	92	58	32
77	90	57	28
76	89	56	26
75	87	55	21
74	86	≤54	18



National Board of Medical Examiners
Subject Examination Program
Scaled Score Descriptive Statistics
Comprehensive Basic Science

School: 000000 - Generic Medical School

Test Date(s): 02/09/2010

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	31	AAAAAA	MSS Comprehensive Basic Science - 2008 Form# 01-Web	200

Score Category	Description	Mean Score	Standard Deviation	Low Score	High Score
Total	Total Test	65	8.5	44	84

**National Board of Medical Examiners
Subject Examination Program
Roster of Scaled Scores
Comprehensive Basic Science**

School: 000000 - Generic Medical School

Test Date(s): 02/09/2010

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	31	AAAAAA	MSS Comprehensive Basic Science - 2008 Form# 01-Web	200

ID	Name	Total
0020	Student	69
0019	Student	72
0018	Student	66
0017	Student	73
0016	Student	56
0015	Student	69
0014	Student	65
0013	Student	61
0012	Student	73
0011	Student	58
0010	Student	67
0009	Student	70
0008	Student	66
0007	Student	73
0006	Student	56
0005	Student	78
0004	Student	65
0003	Student	64
0002	Student	66
0001	Student	62

National Board of Medical Examiners
Subject Examination Program
Scaled Score Frequency Distribution
Comprehensive Basic Science

School: 000000 - Generic Medical School

Test Date(s): 02/09/2010

Reporting Group	Test Purpose	# Examinees	Order ID	Form	# Scored Items
Medical Students	End-Of-Course/ Clerkship	31	AAAAAA	MSS Comprehensive Basic Science - 2008 Form# 01-Web	200
		Total Scaled Score	Frequency		Cumulative Frequency
			Count	%	Count %
		44	1	3	1 3
		51	2	6	3 10
		53	1	3	4 13
		56	2	6	6 19
		58	1	3	7 23
		59	1	3	8 26
		61	1	3	9 29
		62	1	3	10 32
		64	1	3	11 35
		65	2	6	13 42
		66	4	13	17 55
		67	1	3	18 58
		69	3	10	21 68
		70	4	13	25 81
		72	1	3	26 84
		73	3	10	29 94
		78	1	3	30 97
		84	1	3	31 100