SUBJECT EXAMINATION PROGRAM

INTERNATIONAL FOUNDATIONS OF MEDICINE®(IFOM®)
BASIC SCIENCE EXAMINATION

SCORE INTERPRETATION GUIDELINES
FOR MEDICAL SCHOOLS & ORGANIZATIONS

The NBME® International Foundations of Medicine® (IFOM®) Basic Science Examination (BSE) measures competency in the fundamental sciences relevant to the practice of medicine internationally. The emphasis is on the principles and mechanisms underlying health, disease, and modes of therapy. Test material is designed to measure application of basic science knowledge in a clinical context.

IFOM BSE Scores

The IFOM BSE score is an equated percent correct score that represents mastery of the content domain assessed by the examination. It is calculated as the percentage of items in the total content domain that would be answered correctly based on an examinee's proficiency level. Scores are placed on a classic percent correct metric (0-100%) to facilitate interpretation and use. This scale can easily be incorporated into grading schemes. IFOM BSE scores are equated across test administrations (statistically adjusted for variations in test form difficulty), so they can be used to compare and track school and examinee performance over time.

The IFOM BSE is administered in both paper-and-pencil and web formats and is offered in Spanish and International English. Caution should be used in the interpretation of scores as the modality and language of the test administration may affect performance for some examinees.

Precision of Scores

Measurement error is present on all tests, and the standard error of measurement (SEM) provides an index of the imprecision of scores. The SEM is approximately 4 points for the IFOM BSE. Using the SEM, it is possible to calculate a score interval that indicates how much a score might vary across repeated testing using different sets of items covering similar content. An interval expected to encompass about two thirds of scores observed on repeated testing may be found by adding and subtracting the SEM from the reported score.

The standard error of difference (SED) in scores is an index used to assess whether the difference between two scores is statistically meaningful. The SED is approximately 6 score points for IFOM BSE. If the scores received by two examinees differ by at least one SED, it is unlikely that the examinees are equal in proficiency, since a difference this large would occur by chance less than 32% of the time.

Interpreting IFOM BSE Scores

The IFOM BSE is used for a variety of purposes by both individuals and institutions. Individuals use IFOM BSE for several purposes, including participation in exchange programs, application for post-graduate training programs and professional positions, and self-assessment relative to international standards. Medical schools use IFOM BSE for formative and summative assessment, curriculum evaluation and international benchmarking. Post-graduate programs use IFOM BSE for selection of graduates for training. Ministries of health/education use IFOM BSE as part of assessment for regional certification.

As implied based on the variety of uses of IFOM BSE, it may be utilized for both high-stakes and low-stakes assessment purposes. The stakes for the examinee taking the IFOM BSE as well as differences in educational level, preparation and motivation may affect performance. These factors should be considered when interpreting performance and when comparing performance based on one use of IFOM BSE to performance based on a different use. These factors should also be considered when interpreting IFOM performance relative to the United States Medical Licensing Examination® (USMLE®) Step 1 performance and the Step 1 passing standard. Step 1 is a very high-stakes examination that is taken after intense preparation. While the IFOM BSE score of 78 that corresponds approximately to the Step 1 passing standard is useful as a benchmark, stakes and preparation for IFOM BSE examinees may differ substantially and should be taken into consideration when making comparisons.

International Comparison Group (ICG)

The International Comparison Group (ICG) included 9,650 examinees from Africa (0.6%), the Americas (43.3%), Asia including the Middle East (52.1%) and Europe (4.0%) who took the IFOM BSE in 2021-2025. The mean score of the IFOM BSE ICG was 50 and the standard deviation was 20 points. As mentioned in the previous section, IFOM BSE is utilized for a variety of assessment purposes and the stakes as well as differences in educational level, preparation and motivation may affect performance. These factors should be considered when interpreting performance relative to the ICG as most ICG examinees tested for formative or summative purposes in a low-stakes context.

Examination Feedback

Each examinee is provided with a Performance Report showing the total test equated percent correct score and a Performance Profile displaying individual strengths and weaknesses for major content areas.

NBME sets a standard of competence for the IFOM BSE that approximates the Step 1 passing standard. The IFOM BSE score that best approximates the Step 1 passing standard is 78. Examinees whose IFOM BSE score is 78 or higher receive a *Certification in Basic Science Knowledge* along with their score report, in recognition of this achievement.

IFOM BSE is not the same as and cannot be used in place of USMLE Step 1. Examinees must register for and take the USMLE Step 1 separately.

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Interpreting Norms

- Norms are provided to aid in the interpretation of examinee performance.
- They make it possible to compare examinees' scores with the performance of a norm group.
- Norm group characteristics:
  - International Comparison Group (ICG) examinees who took a form of this examination in a low-stakes context during 2021-2025.

Using the Table

- To use the table, locate an examinee's score in the column labeled "Equated Percent Correct Score" and note the entry in the adjacent column labeled "Percentile Ranks." This number indicates the percentage of examinees that scored below the examinee's equated percent correct score.

Equated Percent Correct Scores

	ICG
Number of Examinees	9,650
Mean	50
SD	20

Equated Percent Correct Score	Percentile Ranks	Equated Percent Correct Score	Percentile Ranks
100	100	60	70
99	100	59	69
98	100	58	68
97	100	57	66
96	99	56	65
95	98	55	64
94	98	54	63
93	97	53	61
92	96	52	60
91	96	51	58
90	95	50	56
89	95	49	54
88	94	48	53
87	94	47	50
86	93	46	49
85	92	45	47
84	91	44	45
83	91	43	43
82	90	42	41
81	89	41	39
80	88	40	37
79	88	39	34
78	87	38	32
77	86	37	30
76	85	36	27
75	84	35	26
74	84	34	23
73	82	33	21
72	82	32	19
71	81	31	17
70	80	30	14
69	79	29	12
68	78	28	10
67	78	27	8
66	76	26	7
65	76	25	5
64	74	24	4
63	73	23	3
62	72	22	2
61	71	21 and below	1

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Interpretation of Box Plots on Group Performance Report and Performance Summary Profile

- The "box" represents the middle 50% of all observed scores;
- The upper boundary of the box indicates the 75th percentile of the score distribution, the lower boundary indicates the 25th percentile; the box is referred to as the inter-quartile range (IQR);
- The line in the box indicates the median, or the 50th percentile of the distribution;
- The ends of the lines extending from the box, or "whiskers," represent the highest and lowest values that are not more than 1.5 x the IQR interval from either end of the box.

Guidelines for the Use of IFOM BSE Scores for Decisions

When comparing student performance, it is generally appropriate to consider IFOM BSE results in conjunction with other criteria such as grades, rather than using test scores as the sole basis for decisions. Test scores should be viewed as approximate, not exact, measures of medical knowledge; consequently, small differences in IFOM BSE scores alone should not be used as the basis for decisions about students.