Guide to the

Subject Examination Program

High-Quality Assessment Tools for Use in Medical Education
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MISSION OF THE PROGRAM

The primary mission of the NBME subject examination program is to serve medical education by providing high-quality assessment tools as well as information and assistance to medical educators. NBME subject exams are achievement tests in a broad sense, requiring medical students to solve scientific and clinical problems. Although students’ performance on the exams will reflect the learning specific to their course and clerkship experiences, their test scores will also reflect educational development resulting from their overall medical school experiences. These exams are constructed to be appropriate for a broad range of curricular approaches.

BACKGROUND

The NBME offers standardized, objective, discipline-based exams for use in assessment throughout the medical school curriculum. The exams are designed to provide institutions with effective evaluation tools and useful examinee performance data that can be compared with a large representative group of examinees at the same stage of training. Subject exams are cost-effective, available globally, and provide faculty with valuable feedback on the performance of their examinees.

Subject exams are developed and reviewed by committees of content experts following the same rigorous protocol used to build Step 1 and Step 2 Clinical Knowledge (CK) of the United States Medical Licensing Examination® (USMLE®). NBME subject exams have distinct advantages over locally constructed exams in the assessment of student achievement:

• The exams provide national norms and relevant descriptive information. These norms reflect the performance of examinees from medical schools accredited by the Liaison Committee on Medical Education (LCME).

• Items are selected only after extensive review and pretesting.

• Item formats are similar to those used in Step 1 and Step 2 CK.

• The exams concentrate heavily on application and integration of knowledge rather than on recall of isolated facts. Many items are framed in the context of clinical vignettes.

• Multiple forms of each exam are available for use in successive courses or clerkships.

• Several basic science exams are divided into modules to accommodate course structure.

NBME subject exams are intended to complement other sources of information about the educational progress of medical students and others who take these exams. The results of NBME subject exams should not be viewed as the beginning and end of evaluation. They should be interpreted in light of other available information, just as curriculum evaluation cannot be based on exam results alone. The quality of teaching can and should be evaluated by frequent peer observation and personal feedback, not inferred solely from the level of test scores.

SUBJECT EXAMINATION PROGRAM GOALS

Our multifaceted program goals are to provide:

• high-quality assessments that are efficient and cost-effective

• new forms of assessment that promote improvements in learning and instruction

• opportunities to conduct and disseminate research that informs faculty and policy makers and promotes their understanding of assessment
• information on student educational accomplishments to help advance educational improvement and equity

• support services for a range of assessment and educational programs

POLICY ON USE OF SUBJECT EXAMINATIONS

The NBME provides subject exams in the basic and clinical sciences for the purpose of assessing the educational achievement of individuals in specific content areas. These exams may be provided to medical schools and other institutions with a legitimate interest in the education of physicians or other health professionals.

All institutions using these exams must comply with test administration standards, including security protocols.

Subject exams are designed primarily for use as final exams after courses, clerkships, or other units of instruction. Scores achieved on NBME subject exams cannot be used by examinees for credit toward the examination requirements for medical licensure in the United States.

LEGAL COMPLIANCE

An institution is not authorized to use the NBME Subject Examinations if the institution is (a) located in a country that is subject to a US government embargo, or that has been designated by the US government as a “terrorist supporting” country; or (b) listed on any US government list of prohibited or restricted parties. In addition, institutions are not authorized to administer any NBME subject examination to any individual who is listed on any US government list of prohibited or restricted parties.

RESEARCH/PUBLICATIONS

The NBME may utilize (or allow appropriate third parties to utilize) the data generated or derived from the administration of NBME subject examinations for research and education purposes, including publications and presentations. No school or examinee shall be individually identified in any publication, press release, public posting, or presentation.

If a school wishes to use NBME subject examination data for any research project, publication or presentation, it must obtain NBME’s prior written authorization.

For additional information, contact the NBME at (215) 590-9259 or MedicalSchoolServices@nbme.org.

THE EXECUTIVE CHIEF PROCTOR (ECP)

The NBME requires that a single individual be designated to oversee all NBME examination services used by an institution.

At medical schools, the ECP is nominated by the dean and approved by the NBME. The ECP role is usually filled by someone in the dean’s office (e.g., an associate dean) who has a commensurate level of authority. At residency programs or other organizations, these responsibilities may be carried out by a designated individual approved by the NBME.
PRIMARY RESPONSIBILITIES OF THE ECP

ECP responsibilities will vary according to the exam service provided.

The following list outlines the primary duties of the position:

• Become thoroughly familiar with the content in the Procedures Manual for ECPs.

• Ensure that the security of all examination content is maintained at all times.

• Oversee administrative tasks for the local provision of services, particularly online ordering of subject and web-based examinations.

• Nominate an Associate Executive Chief Proctor (AECP) for any campus other than the main institution where subject examinations are also administered.

• Ensure that all staff responsible for administering examinations (i.e., Chief Proctors or AECPs) prepare for and conduct the test sessions in strict compliance with the procedures and regulations outlined in the Web-based Examinations Chief Proctor’s Manual.

• Ensure that all NBME examinations are administered in a secure, proctored setting.

• Ensure that examinees follow test day rules and procedures.

• Report any suspicious activities observed during an administration to the NBME immediately.

• Conduct investigations regarding irregular behavior, if necessary, and promptly provide the NBME with the outcome of any such investigation.

• Cooperate with the NBME in any investigation of a possible security breach.

• Collaborate with AECPs from schools where your student(s) are doing rotations to make arrangements for your students to test, if necessary.

• Order examination reviews for faculty through the NBME Exam Review Service (NERS) and proctor the examination reviews.

• Establish and monitor local financial accounts for services.

SECURITY OF EXAMINATIONS

To ensure the integrity of the NBME subject examination program and the validity of the scores reported, it is essential to maintain the security and confidentiality of test materials at all times. All items used in NBME subject exams are owned and copyrighted by the NBME. In addition, any unauthorized reproduction or dissemination of test materials or any part of them through any means, including but not limited to copying, printing, photographing or downloading of electronic files, or reconstruction through memorization and/or dictation, is strictly prohibited. Appropriate action, which may include legal proceedings, will be taken to enforce copyright. The NBME retains the right to discontinue subject examination services in the event of a breach or suspected breach in the security of test materials.

NOTE: If your institution would like to administer subject exams at other campuses, the ECP must designate an AECP to oversee the administration at the new campus location. AECPs must follow the same procedures as ECPs to maintain the security of test materials.
**TEST DELIVERY OPTIONS**

**Web-based Examinations At Your Institution**

Web-based exams must be administered in a secure, proctored setting. The Chief Proctor (CP) will have access to a centralized Chief Proctor Resource Site, which houses all the system applications in support of test administration. The CP must conduct the exam in strict compliance with the procedures outlined in the *Chief Proctor’s Manual*.

The NBME provides a web-based utility that checks both hardware and software configurations and downloads a plug-in that “secures” the browser. The computer is “locked down,” preventing the examinee from accessing applications such as e-mail or notepad.

It also includes a function designed to detect any recording applications and programs that may be running on workstations or examinees’ personal laptops prior to the start of the exam.

**Web-based Examinations at Prometric Test Centers**

The clinical science and comprehensive subject examinations are available for administration at Prometric’s worldwide network of secure test centers.

Prometric testing may be preferred for students serving on clinical rotations in a distributed hospital network or for those located at a site without web-based test delivery capability. It may also be useful for makeup tests.

This option requires advance planning to allow students sufficient time to schedule testing appointments. See page 10 for detailed information about this process.
DESCRIPTION OF SUBJECT EXAMINATIONS

The **Basic Science and the Clinical Science Examinations** are designed to assess performance at the end of a course, clerkship, or other unit of instruction.

The **Introduction to Clinical Diagnosis Examination** is designed to measure student performance at the end of history-taking and physical diagnosis courses.

The **Ambulatory Care Examination** was developed in collaboration with clerkship directors in internal medicine and a task force of clinical faculty from several US medical schools. It is intended for assessment at the end of an ambulatory clerkship in the third or fourth year.

NBME worked with the American Medical Association to develop and pilot the **Health Systems Science (HSS) Examination** in collaboration with medical faculty experts in HSS. Faculty can use this high quality, standardized assessment tool to support the implementation of HSS curricula and educational initiatives. Together with clinical and basic science instruction, HSS prepares medical students for effective clinical practice.

**Advanced Clinical Examinations:** The **Emergency Medicine and Internal Medicine Examinations** are designed to measure the effectiveness of the fourth-year emergency medicine and internal medicine sub-internship experiences. NBME staff members collaborated with a task force of clinical faculty from medical schools and teaching hospitals to develop these exams.

**Comprehensive Examinations:** The **Comprehensive Basic Science Examination** and the **Comprehensive Clinical Science Examination** are achievement tests covering material typically learned during basic science education and core clinical clerkships. They reflect the content of the USMLE Step 1 and Step 2 CK exams and are typically used to identify areas of strength and weakness prior to taking the USMLE.

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**NBME SUBJECT EXAMINATIONS**

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<th>Basic Science</th>
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<td>Behavioral Sciences</td>
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<td>Biochemistry</td>
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<td>Gross Anatomy only</td>
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<td>- Gross Anatomy + Embryology</td>
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<td>Histology</td>
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<td>Microbiology only</td>
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<th>Clinical Science</th>
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<td>Ambulatory Care</td>
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<td>- Core + Chronic Care + Musculoskeletal Medicine*</td>
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<th>Health Systems Science Examination</th>
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<th>Advanced Clinical Examinations</th>
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<td>Emergency Medicine*</td>
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<th>Comprehensive Examinations</th>
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<td>Comprehensive Basic Science*</td>
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<th>Clinical Diagnosis</th>
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<tr>
<td>Introduction to Clinical Diagnosis</td>
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*Available for Administration at Prometric Test Centers
Subject exam outlines developed by NBME committees of content experts are used to construct each test. Items are selected based on content and performance statistics. The final form of each exam is reviewed and approved by the appropriate committee chair prior to release. Multiple forms of each exam are typically available at any time so that alternate forms may be used for successive courses and clerkships or for makeup exams. Content outlines and sample items are available for all exams on the NBME website under Schools and Residency Programs at www.nbme.org.

ITEM FORMATS

For all examinations: In keeping with USMLE trends, NBME subject exams have increased emphasis on questions that test application of knowledge rather than recall of isolated facts. Clinical science items are framed in the context of clinical vignettes, and this is increasingly true for the basic science disciplines.

One-best-answer (A-type) items, used in all subject exams, make explicit the number of options to be selected and are the most widely used multiple-choice item format. Each item consists of a focused item stem (e.g., a clinical vignette) and a lead-in question, followed by a series of options with one correct answer for each item.

Extended-matching (R-type) items are also used in the clinical science exams and in the Comprehensive Clinical Science Examination. Extended-matching items are organized into sets that use one list of options for all items in the set. Examinees are instructed to select the one best answer.

F-type (unfolding) items are used in some of the clinical web-based exams. These are formatted as sequential item sets that unfold and challenge examinees to manage patients over time. Examinees are instructed to select the one best answer.
Ordering and Test Administration

THE NBME SERVICES PORTAL (NSP)

Services and reports related to subject exams are available through the NBME Services Portal (NSP). This is a secure website and a primary source for authorized users to obtain information about their students for a variety of activities related to USMLE, NBME subject exams, and other services. It provides access to the Online Ordering System, Customized Assessment Services, roster management for web-based exams, and subject exam scores and year-end reports.

A major feature of the NSP is the capability for an institution to create and manage its own users and to assign privileges to access specific areas of the portal.

Each institution has at least one User Account Administrator who assigns users the privileges they need to access areas of the portal appropriate for their responsibilities.

ONLINE ORDERING SYSTEM

All subject examination program services are requested through the Online Ordering System. The Online Ordering System allows the user to enter order information, select one of four different payment methods, review the status of orders, and receive e-mail notifications at specific points during the ordering cycle.

ONLINE ORDERING OF EXAMINATIONS

Detailed information and instructions for ordering web exams to be administered either at a Prometric test center or locally (at your institution) are available in the Online Ordering System. All exams must be ordered in a time frame that is sufficient to allow for processing and scheduling administrative or technical support. Ordering timelines for each exam delivery option are shown below.

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<th>Web-based Administrations</th>
<th>Web-based Administrations at Your Institution</th>
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<tr>
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<td>• Orders may be placed up to and including the 2nd calendar day prior to the test date.</td>
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<td>• Orders lock 2 calendar days before the test date.</td>
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<th>Web-based Prometric Administrations</th>
<th>• A testing window of 7-14 calendar days is required.</th>
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<td>• Orders must be placed no later than 28 days prior to the start of the testing window.</td>
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<tr>
<td></td>
<td>• Orders lock 21 calendar days prior to the start of the testing window.</td>
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All exam orders can be revised or cancelled any time prior to the lock date. After the lock date, the NBME must be contacted to make order changes.
THE ROSTER SYSTEM FOR WEB-BASED EXAMINATIONS

The NBME roster system supports the administration and scoring of its web-based examinations, including those administered at Prometric test centers. This system also facilitates administration of different subject tests in the same testing room. The roster system, which is available through NSP, is divided into two parts: the master roster and the test administration roster.

Master Roster

The master roster is a list of all examinees at your institution (covering all class levels) who will be taking NBME web-based exams. In addition to name, date of birth, and gender, each record includes a unique local ID number. Each examinee must enter this ID number into the test delivery interface in order to start an exam. Other optional fields are available to populate (such as program type and graduation month/year), in order to expedite records searches. For examinees who will take an exam at a Prometric test center, the master roster must also include their e-mail addresses.

Test Administration Roster

The test administration roster is a list of examinees scheduled to take an exam on a specific test date or within a specific testing window. The master roster must be populated before a test administration roster can be created.

For local administrations at schools or other institutions, the test administration roster can be populated anytime prior to the test date and before a test session is launched. However, a test administration delay may occur if a roster is not completed prior to the start of a test session.

For examinations administered at Prometric test centers, the roster must be completed no later than 21 calendar days prior to the start of the testing window.

Detailed instructions are available in the roster system.

CHANGES TO SUBJECT EXAMINATION FORM ASSIGNMENT

Consistent with best practices and national standards for high quality testing programs, the NBME periodically reviews its examination programs, policies and procedures. In order to maintain the examination security and protect the integrity of NBME examinations, the NBME will no longer process requests for specific examination forms to be assigned for upcoming administrations effective January 2, 2018.

To maintain test security and minimize item exposure, the NBME routinely employs multiple forms for subject examinations available for test delivery during an academic year. The scores on each examination form have been equated across forms and administrations so that your examinees’ performance is directly comparable, regardless of which form has been administered. Equating is a process that statistically adjusts for variations in test form difficulty so that scores on forms of different difficulty can be used interchangeably. Equated scores can then be used to compare and track school and examinee performance over time.

When you order subject exams, an examination form is assigned at the order or examinee level depending on whether the exam is administered locally or at Prometric test centers. All form assignments are made to minimize the risk of sharing test content and to enhance test security. While examinees may see the same or different forms, all scores are comparable regardless of the form administered.
SCHEDULING WEB-BASED EXAMS AT PROMETRIC TEST CENTERS

After the test administration roster has been created for a web-based exam at a Prometric test center, the NBME generates a scheduling permit for each examinee in approximately 2-3 business days. There are exceptions if the examinee requires test accommodations (See page 12). Each examinee will receive an e-mail from the NBME with a URL to access and print/download his/her scheduling permit. Information printed on the scheduling permit is required to schedule a testing appointment through Prometric’s website. The permit also has information about admission to the test center, cancelling/rescheduling appointments, and other policies and procedures.

PAYMENT POLICIES AND PROCEDURES

Exam Fees

There is a separate fee structure for the Prometric test center option. Current fees for subject exams are listed on the NBME website (www.nbme.org) under Schools and Residency Programs: Subject Examination Fees.

Billing Accounts

The NBME requires that accounts be set up for the purpose of applying fees received and for computing any credit or payment due after scores have been reported.

There are two types of accounts: an institutional or ECP Account, which is required, and department accounts, which are optional. Typically, these accounts reflect funding sources at an institution. Accounts carry credits only – no refunds are provided.

The NSP features a “My Billing Accounts” portlet through which those who order or arrange for payment of exam services can view up-to-date information about the status of invoices, access monthly summaries, and pay for services directly.

Payment Options

Payment for exam services may be made by:

• Credit card (Visa, MasterCard or American Express)
• Check or money order
• Wire transfer
• Institution account with a credit balance

Payment Terms

NBME policies for payment are as follows:

• Payment of invoices generated for NBME exam services must be received by the NBME prior to the scheduled test date.

• Payment must be in US currency only and in the payment forms specified in the Payment Options section above.

• Checks and/or money orders from examinees will not be accepted.

• No refunds are provided.

• Score reports will not be released by NBME unless payment for an order has been received.

If an account accrues more than $1,000 in invoices that remain unpaid for 91 days following the test date, all score reports associated with that account will be held by NBME until the account is brought current. This applies even if other orders for that account were prepaid.

ADMINISTERING SUBJECT EXAMINATIONS

The ECP has overall responsibility for management and planning of test administration events. The ECP is also required to recruit chief proctors and other support staff, as needed, to perform the tasks necessary to ensure a successful and secure test administration.
Web Administrations at Your Institution

The NBME provides the tools necessary to administer a web-based exam in a secure, proctored setting.

These features include:

• A centralized **Chief Proctor Resource Site** that provides resources to support all tasks associated with the test administration cycle. This includes access to the **Chief Proctor’s Manual**, tutorials, a practice exam, and features for managing the test session online.

• Software that “locks down” the browser during testing, preventing examinees from accessing any other applications (such as e-mail or notepad), during the test session.

• An automated compatibility check that ensures every computer used for testing purposes is properly configured to deliver the exam.

A variety of test-delivery environments are supported: both wired and wireless networks, PC and Mac operating systems, and laptops or fixed workstations. Also, it is possible to schedule multiple separate testing sessions on the same day or to run testing sessions in different buildings or at separate campuses at the same time.

TEST ADMINISTRATION SUPPORT

Web Examinations at Your Institution

NBME staff will be available for test administration support on your test date to respond to technical or procedural issues that may arise.

**NBME staff are available 24 hours a day, 7 days a week by calling 215-590-9298 (exclusive of NBME holidays).**

Web Administrations at Prometric Test Centers

Prometric test center staff will administer the NBME examinations in a secure setting and respond to any technical or procedural issues. Information about Prometric test centers is available at [www.Prometric.com](http://www.Prometric.com).

WEB-BASED TESTING OUTAGE GUIDELINES FOR CUSTOMIZED ASSESSMENT SERVICES (CAS) AND SUBJECT EXAMINATIONS

In order to improve communication and better aid your decision making in the event of a web-based testing outage, guidelines are now available in the following locations for your reference:

**Web-Based Testing Status Page:**
https://www.nbme.org/wbt/wbtstatus.aspx

**Executive Chief Proctor (ECP) Manual:**
Available on the NBME Services Portal (NSP) under ECP Resources tab

The guidelines apply when the source of the outage is NBME or its vendors, and they apply to CAS/subject exam administrators at both medical schools and Prometric. Also included are communication venues through which the NBME will send notifications and status updates when outages occur. Please note that the guidelines are subject to change, and the NBME will provide notification when/if they should be updated.
Web-based Testing Outage Guidelines

COMMUNICATION DURING SUBJECT EXAMINATION AND CUSTOMIZED ASSESSMENT (CAS) WEB-BASED TESTING (WBT) SYSTEM INTERRUPTIONS

When the NBME determines that a universal outage is affecting subject examination and customized assessment testing, communications will be sent notifying all customers testing on the affected day of the situation. The NBME will provide status updates every 15-30 minutes from the time the NBME determines that there is an outage. All notifications will be provided via the following venues:

- Chief Proctor Resource Site
- Executive Chief Proctor (ECP) and proctor email addresses on file with the NBME

POLICY FOR SUBJECT EXAMINATION AND CAS WEB-BASED (WBT) OUTAGES

The NBME is committed to providing excellent customer service. However, technical problems may occur prior to or during an examination which may prevent examinee testing at either institutions (e.g., medical schools) or Prometric, from accessing or completing examinations. While we are working to lessen the frequency of such situations, it is impossible to eliminate their occurrence altogether.

Therefore, if such an interruption occurs causing your examinees to wait up to 30 minutes or more to start or complete an examination, you have the following options:

Examinations Administered at your Medical School

Prior to Students Starting Exam

- Test students later in the day—you may launch your examination anytime on your scheduled test date regardless of the session start and end times. There is no need to make adjustments to your order.
- Cancel your Order—Contact subjectexams@nbme.org to cancel your order. You will receive a credit to your account within one to two business days. You may use the credit as payment when you order the rescheduled examination. If the examination needs to be rescheduled sooner than two business days from the cancellation date, please contact us for assistance.

After Students have Started Exam

- Reschedule your students — if you choose to reschedule your students, the chief proctor must exclude students from the score roster prior to concluding the administration (See Confirming the Roster – pgs. 31-34, Web-based Examinations Chief Proctor’s Manual). This will ensure that you do not receive scores for partially completed examinations, you are not charged for those examinations, and that partial data is not included in your year-end reports and/or school performance profiles. If you are unable to remove students from the score roster, please contact subjectexams@nbme.org immediately and we will expunge the partial scores and credit the original order for the corresponding examinations.
- Resume exam administration when service is restored — If you choose to wait for service to be restored, you have the following options:
o **Retain original scores** – If your students are able to continue testing when service is restored, their scores may be retained as normal. However, if after resuming the examination a student decides that he/she is unable to complete testing or does not want to finish the exam, the chief proctor should exclude that student from the score roster at the end of the exam session.

o **Expunge scores and offer retakes** – If your students have completed the exam and scores have been posted, you may decide to offer retakes. If you decide to have the student retake, their original score will be expunged. The original score must be expunged within 90 calendar days of the original test date. However, the retake exam can be taken anytime. Please ensure students know that their original scores will be permanently removed from the record and only the scores from the retake will be retained.

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### Examinations Administered at Prometric Test Centers

**Prior to Students Starting Exam**

- **Reschedule within eligibility period** — if a technical problem occurs that prevents a student from starting an examination at a Prometric test center, Prometric will ask the student to wait for 30 minutes while they attempt to resolve the issue. If the issue cannot be resolved within 30 minutes, the student may continue to wait for the issue to be resolved or leave the test center. If there is time remaining in the student’s testing window, the student may work with Prometric to reschedule his/her test appointment to another date within the testing window.

- **Submit new order** — If a student cannot test within the time remaining in the test window or if there is no time remaining in the test window, the medical school should contact subjectexams@nbme.org so that the student can be placed on a new exam roster. We will open a new test window so that you can submit a new order. We will credit your account for the missed examination. The student will receive an email to let him/her know that the new scheduling permit is available within 3-4 business days of being placed on a roster. After the student receives his/her scheduling permit he/she will schedule a new test date.

**After Students have Started Exam**

- **Submit a new order for a retake exam** — if a technical problem prevents a student from completing an examination, the medical school should contact subjectexams@nbme.org. We will open a new test window so that you can submit a new order and we will credit your account for the original examination. At your request, we will expunge the partial score so that the data is not included in your year-end report.

- **Resume exam administration when service is restored** — If your students choose to wait for service to be restored, you have the following options:
  
  o **Expunge scores and offer retakes** – If your students have completed the exam and scores have been posted, you may decide to offer retakes. If you decide to have the student retake their original score will be expunged. The original score must be expunged within 90 calendar days of the original test date. However, the retake exam can be taken anytime. Please ensure students know that their original scores will be permanently removed from the record and only the scores from the retake will be retained.

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Please Note: Scores that have been expunged are not included in score feedback such as year-end reports (clinical science exams) or school performance profiles (basic science exams). However, expunged scores will not be removed from the score rosters posted to the NBME Service Portal (NSP). Due to continuous updates to the subject examination and CAS programs, the NBME cannot always guarantee that the affected score feedback can be regenerated with the expunged records removed. Therefore, it is to your advantage to inform the NBME of any retake and expunge decisions as soon as possible (before 90 days after the original test administration).
EXAMINEES WITH DISABILITIES

Individuals with disabilities may be entitled to accommodations under federal and state law, including the Americans with Disabilities Act (ADA) and the Rehabilitation Act of 1973. If an examinee applies for test accommodations in the administration of a subject examination on the basis of a disability, the school will determine whether any accommodations are warranted, decide what specific accommodations may be reasonable for a particular examinee, and bear all costs associated with any such accommodation. The NBME will make a good faith effort to provide such reasonable test accommodations that the school determines are warranted for the examinee.

Oral Rendering of a Web Examination

Requests for an oral rendering of a subject exam should be made at the time the order is placed and noted in the Comments section of the online order. The institution must follow the NBME Protocol for Oral Rendering of Subject Examinations. The person selected to read the subject exam to the examinee on the test day must sign the nondisclosure form provided by the NBME prior to accessing any test materials.

Extra Testing Time and Text Enlargement for Local Administration of Web Examinations

The NBME has several pacing options (1.25x, 1.5x or 2x) for examinees needing extra testing time. The pacing is set in the examinee’s record on the test administration roster, which alerts the system to create an extra-time form. Examinees with visual impairments may use their own screen magnification software or use the browser’s text size feature to enlarge the font.

Accommodations at Prometric Test Centers

It is possible to arrange for examinees to take an examination with test accommodations (e.g., extra testing time) at a Prometric test center.

Orders should be placed as far in advance as possible because generating scheduling permits for these examinees could take up to two weeks.

- An Excel template listing the examinees that need extra testing time or other accommodations must be completed and submitted to the NBME.
- The NBME then reviews the file and sends the information to Prometric. Scheduling permits for these examinees will not be generated until this process is complete.
- Examinees that need accommodations cannot schedule their testing appointments online. Their permits will provide instructions to call Prometric to schedule their testing appointments.
- A separate fee will be assessed after scores have been reported for an accommodation requiring a separate room.

All requests for accommodations must be made at the time the order is placed. For additional information, contact us at SubjectExams@nbme.org or (215) 590-9258.
SCORING, SCALING, AND EQUATING SUBJECT EXAMINATIONS

Equated Scores

For exams that have been administered to a sufficient number of examinees, scores are statistically equated across exam administrations. Equating ensures that all scores have the same meaning on different forms of the same exam. Equated scores provide a consistent way to measure performance on multiple exam forms administered at the same or different times. Equated scores are comparable and can be used to track school and examinee performance over time. These scores may be reported as percent correct or scaled scores.

• Equated percent correct scores reflect an examinee’s mastery of the content domain, calculated as a percentage of items in the total content domain that would be answered correctly based on an examinee’s proficiency level.

• Equated scaled scores are scaled to the performance of a reference group of examinees from medical schools accredited by the LCME. The reference group consists of students who took the exam for the first time under standard testing conditions.

Percent Correct Scores

For new exams that have not yet been administered to a sufficient number of examinees for equating, non-equated percent correct scores may be reported initially. Once sufficient data have been obtained for equating, equated score feedback will be generated and posted to the portal. Please note that we cannot guarantee that equated score feedback will be provided for all exams reporting non-equated percent correct scores. Only equated scores are interchangeable over time and comparable across different exam forms.

Comprehensive Examination Scores

Because the Comprehensive Basic Science Examination (CBSE) and USMLE Step 1 cover very similar content, CBSE performance can be used in conjunction with other information to assess readiness for Step 1. The CBSE score represents an estimate of an examinee’s performance on the United States Medical Licensing Examination (USMLE) Step 1. If he/she had taken both exams under the same conditions and with the same level of knowledge. Estimated performance based on taking CBSE is not a guarantee of future performance on Step 1. Many factors, including changing levels of knowledge and testing conditions, may result in a Step 1 score that is higher or lower than the estimated score.

Because the Comprehensive Clinical Science Examination (CCSE) and USMLE Step 2 CK cover very similar content, CCSE performance can be used in conjunction with other information to assess readiness for Step 2 CK. The CCSE score represents an estimate of an examinee’s performance on the United States Medical Licensing Examination (USMLE) Step 2 CK. If he/she had taken both exams under the same conditions and with the same level of knowledge. Estimated performance based on taking CCSE is not a guarantee of future performance on Step 2 CK. Many factors, including changing levels of knowledge and testing conditions, may result in a Step 2 CK score that is higher or lower than the estimated score.

PRETEST MATERIALS FOR CLINICAL SUBJECT EXAMINATIONS

In order to enhance the quality of an examination and investigate its measurement properties, the NBME may include pretest materials in some web-based clinical subject examinations. The scorable content of any examination incorporating pretest items re-
mains unchanged. The time to complete the exam is increased commensurate with the increase in test material. However, the time allocated to complete each item (item pacing) will remain unchanged.

**SCORE REPORT COMPONENTS**

For each administration, an alphabetic roster of examinees with corresponding equated scores or non-equated percent correct scores along with summary information is provided. Summary information includes the examinee group tested, the examination purpose, the number of examinees tested, and the number of items scored. The scores on the roster also appear in a comma-separated text file that can be downloaded and used to export scores. If at least two examinees were tested, descriptive statistics on all scores are provided. For exams that report equated scores, the score report set also includes the following:

- score interpretation guide
- norm tables
- grading guidelines (available for all clinical science subject exams)
- frequency distribution on total test equated score (if at least two examinees were tested)
- modular exam subscores (if available)
- content area item analysis reports (detailed and/or summary)
- individual examinee performance profiles
- summary school performance profiles (for basic science and comprehensive exams)

**SCORE INTERPRETATION GUIDE**

A **Score Interpretation Guide** is available for each subject exam for which equated scores are computed. It provides detailed information about the computation of scores, including the score scale for the exam and the reference group (if applicable) used to scale the scores. Information about the exam development, precision of scores, score report components, norms, item analysis reports, performance profiles, and grading guidelines (if available) is also provided. Score interpretation guides for each exam are included with the score reports and can also be accessed separately on NSP under the Score Reports tab.

**Please note:** For exams reporting equated scores on a new score scale, score equivalency tables are provided to convert scores from the old score scale to the new score scale for approximately one year.

**NORM TABLES**

Norms are provided to aid in the interpretation of examinee performance. These norms reflect the performance of examinees from LCME-accredited medical schools who took the exam for the first time under standard testing conditions. Norms enable you to compare your examinees’ performance with a nationally representative group of examinees at the same stage of training. Descriptive statistics on the equated scores for each norm group are also provided. The most recent norms for each exam are included with the score reports and can also be accessed separately on NSP along with earlier norms (when available) under the Score Reports tab.

Norms for new exams may not be available until they have been administered to a sufficient number of examinees for scaling and/or equating.

**GRADING GUIDELINES**

The NBME provides guidelines for analyzing examinee performance for the clinical science subject exams and some advanced clinical exams. These guidelines assist clerkship and course directors in determining passing and honor grades for their examinees. Periodically, the NBME facilitates a review of the guidelines with faculty members to update and ensure the continued appropriateness of the guidelines. Grading guidelines are included with the score reports and can also be accessed separately on NSP.

**CONTENT AREA ITEM ANALYSIS REPORTS**

A detailed item analysis report is provided for any subject exam with at least 10 examinees testing during a single form administration and for which equated scores are available. This report provides a short description of the content of each item on the exam, the proportion of examinees from your institution, and the projected proportion of examinees nationally that answered each item correctly. Item analysis data and descriptors of the items,
when reviewed together, can be helpful in determining the extent to which your examinees have learned the content of individual items.

When available, a summary item analysis report will be provided for all schools with at least 10 examinees testing during a single form administration or 20 examinees testing during a multiple form administration. The summary report will provide information on the performance of your examinees and a national group of examinees on the major content areas reported on the performance profiles.

These reports are provided for institutional use in assessing the performance of examinees. The written authorization of the NBME must be obtained prior to any additional use of the data (e.g., in research papers).

**PERFORMANCE PROFILES**

**Individual Performance Profiles**

Individual performance profiles are available for many subject examinations. Profiles are intended for distribution to examinees as an aid in self-assessment. For each major content area on the exam, examinee performance is displayed graphically with performance bands representing areas of strength and weakness. An examinee version of the *Score Interpretation Guide* is provided with each profile.

**Summary Performance Profiles**

Summary performance profiles are also available for many subject exams. The summary performance profile is an aggregate report of examinee performance for the major content areas on the exam for a specific test administration. The score distribution of examinees is presented graphically with performance bands representing strengths and weaknesses in each major content area. This report is provided when there are at least 10 examinees.

**YEAR-END REPORTS FOR CLINICAL SCIENCE EXAMINATIONS**

The NBME provides year-end reports for all clinical science subject exams and most advanced clinical exams to institutions that administered them in the previous academic year. Each report compares the performance of first-time takers from the institution with comparison group examinees from LCME-accredited medical schools who took the exam for the first time under standard testing conditions during the previous academic year.

When sufficient data are available, Canadian schools will also receive comparison group data based on examinees from Canadian schools who took the exam for the first time during the previous academic year.

Where appropriate, the year-end report also provides summary information regarding the performance of comparison group examinees divided into several groups based on the most common clerkship rotation lengths for that discipline. Clerkship rotation type is reported in two categories: traditional and non-traditional (i.e., one or more disciplines integrated, and/or problem-based). Each report also includes a table of the most recent set of norms available for the exam based on the previous academic year.

If there were at least 15 first-time takers during the previous academic year, a school summary profile graph will also be included in the report. The graph provides information regarding the performance of first-time takers from your institution on the major content areas of the exam. This information is provided to assist in curriculum evaluation or to address other relevant educational issues.

**SCORE REPORT PROCESSING**

**New Forms of Existing Examinations**

New forms of equated exams are introduced periodically and go through a process of scaling, equating, and quality control before equated scores are posted. For some exams, in order to complete this process, sufficient response data must be collected from initial administra-
tions of the new form at several institutions. NBME usu-
ally posts a score report within three weeks of the close
of these initial administrations for institutions that agree
to participate in this process. After the initial score report
release of a new form, equated score reports are posted
within the usual time frame for web exams.

Non-equated percent correct scores are not
reported for comprehensive, basic science or
clinical science subject examinations. For initial
administrations of new forms of comprehensive, basic
science and clinical science subject exams, equated
score reports are posted approximately 2–3 business
days following the close of a test session. Please note
that for basic science exams, non-equated percent cor-
rect scores will no longer be provided.

New Examinations

When the NBME introduces new exams, equated score
reporting will be delayed for an indeterminate period of
time until sufficient data have been collected. If deemed
appropriate, non-equated percent correct scores and
summary statistics will be reported on interim rosters until
the process of scaling, equating, and quality control can
be completed. After equated score reports from initial
administrations have been posted, non-equated percent
correct scores will no longer be provided and equated
scores will be reported within the usual time frame for
web-based exams.
Accessing Scores

ACCESSING SCORE REPORTS ON NSP

Subject exam scores and related performance reports are available through the NSP after each test administration. Score reports are posted daily on an hourly basis. Access to this feature can be assigned by your institution’s User Account Administrator.

NBME will not otherwise transmit or report subject exam scores, including by fax, telephone, or e-mail. Score reports will not be posted until payment has been received.

Score reports for a specific academic year remain on the website for approximately four academic years for all exams. Users will be notified about a month in advance before information is removed, to allow time for final download of reports if necessary.

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<th>Score Reporting</th>
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<tr>
<td><strong>Web-based Administrations at Your Institution</strong></td>
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<tr>
<td><strong>Web-based Prometric Administrations</strong></td>
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Year-end reports for clinical science exams are usually posted in November.
AGREEMENT ANALYSIS FOR IRREGULAR TESTING BEHAVIOR

An agreement analysis may be requested and conducted for a pair(s) of examinees suspected of irregular testing behavior, such as copying or collaboration. Agreement analysis is a statistical tool that can provide helpful, supportive information for the investigation of observed behaviors that may compromise the validity of examinees’ scores. The agreement analysis compares the degree of agreement that is observed between the incorrect responses of two examinees (pair) with the degree of agreement that would be expected to occur between two randomly chosen examinees taking the same examination independently. Agreement analysis uses only those items that both examinees in the pair answered incorrectly.

Any actions taken by an institution on the basis of such information are completely the responsibility of the institution.

SCORE RECHECK SERVICE

The NBME is confident that each reported subject exam score is an accurate reflection of the responses that an examinee recorded in the testing interface for web-based exams.

This is based on reliable scoring and reporting techniques backed by a variety of quality control and verification procedures.

However, if a score is believed to be in error, a review of the response record generated for a web exam can be requested.

Requests for score rechecks must be initiated by the institution, either by the ECP or appropriate staff (e.g., course or clerkship director) in the department administering the test. A Score Recheck Request form is available to download from the NBME website. Since the subject examination program is a service provided to an institution, the NBME will only accept checks or money orders from the institution. Requests will not be processed if the check or money order is provided by the examinee. Results are provided approximately two weeks after receipt of the request.

It should be noted that the sole purpose of the score recheck service is to verify that the score originally reported is correct. Score recheck requests may be made up to six months after the test date. Score recheck requests received after that time cannot be accommodated.

ADDITIONAL RESOURCES

The resources listed below are available online at www.nbme.org:

- Administration of NBME Examinations at Prometric test centers
- Arranging for and Administering an NBME Web-based Exam
- Best Practices for Web-based Testing on Wireless Networks
- Fees, payment options, and policies
- Sample score reports
- Subject Examination Timing Chart
- Subject Examination Content Outlines and Sample Items
Please feel free to contact us if you have any questions. NBME staff can provide the information you need or help solve a problem.

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<tr>
<th>NBME Contact List</th>
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<tbody>
<tr>
<td><strong>NBME Billing Accounts and Invoice Questions Only</strong></td>
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<tr>
<td><strong>Operational Support for Web-based Subject Exams</strong></td>
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<td>accommodations, Prometric administrations, proctoring,</td>
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<td>exam security, scoring issues, test administration, etc.)</td>
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