Annual Report on the United States Medical Licensing Examination® (USMLE®) to Medical Licensing Authorities in the United States

Prepared by the Federation of State Medical Boards of the United States, Inc.,
and the National Board of Medical Examiners®

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Executive Summary

The *Annual Report on the United States Medical Licensing Examination (USMLE) to Medical Licensing Authorities in the United States* provides state medical boards with an overview of the USMLE, a joint program of the Federation of State Medical Boards (FSMB) and the National Board of Medical Examiners (NBME). In addition to general information about the examination, the report provides updates on topics of specific interest to the boards, including program news, enhancements to USMLE, performance data, an overview of the standard setting process, and a summary of state medical boards' interactions with the USMLE program. Links to key USMLE resources and articles, and a summary of USMLE-related research and publications are also provided.

Over the next year, the USMLE program will enhance and increase communication efforts with examinees and other USMLE stakeholders, including state medical boards and the public. These efforts will include implementation of a medical student and resident advisory panel and an increased social media presence.

State medical boards' participation in the USMLE continues to be strong. In 2017, a total of 24 members and staff from 20 boards participated in the annual USMLE workshop and on the state board advisory panel to the USMLE. This is representative of the boards' long and storied participation in the USMLE program, from writing test items and serving on examination committees, to sitting on standard-setting panels and other workgroups. Since implementation of the USMLE in 1992, 202 members and staff from state medical boards have participated in the USMLE program in some capacity. These individuals represent 58 different medical and osteopathic licensing boards throughout the United States.

Introduction and Program Overview

The United States Medical Licensing Examination® (USMLE®) is a jointly owned program of the Federation of State Medical Boards of the United States, Inc., (FSMB) and the National Board of Medical Examiners® (NBME®). USMLE is a three-step examination sequence for medical licensure in the United States. The first administrations of the examination took place in 1992. Today, the program administers approximately 140,000 Step examinations or Step components annually with more than 2.7 million total test administrations since 1992. In fact, as of 2016 approximately 50% of this nation's 953,695 actively licensed physicians have taken all or a part of the USMLE sequence.

Mission:
The USMLE's stated mission is to support US medical licensing authorities through the development, delivery and continual improvement of high quality assessments across the continuum of physicians' preparation for practice. The program's goal is to provide medical licensing authorities with meaningful information from assessments of physician characteristics—including medical knowledge, skills, values, and attitudes—that are important to the provision of safe and effective patient care.

The results of the USMLE are reported to medical licensing authorities for their use in the decision to grant a provisional license to practice in a post-graduate training program and the decision to grant an initial license for the independent practice of medicine. The USMLE is recognized and utilized by all state medical boards for licensing allopathic physicians and graduates of international medical schools. Some licensing authorities also recognize USMLE for licensing osteopathic graduates.

Governance:
The FSMB and the NBME co-own the USMLE. However, much of the governance responsibility for the program resides with the USMLE Composite Committee. The committee comprises representatives from the FSMB, the NBME, the Educational Commission for Foreign Medical Graduates (ECFMG) and the public. The Composite Committee is responsible for overseeing and directing USMLE policies. Specific functions of the committee include establishing policies for scoring and standard setting; approving Step examination blueprints and test formats; setting policies for test administration, test security and program research. The membership of the Composite Committee routinely includes current or former members of state medical boards. At this time, current and former members of the Iowa, Minnesota, North Carolina, Vermont-Medical, and Virginia boards serve on the USMLE Composite Committee.

The three USMLE Step examinations are overseen by a Management Committee composed of physicians and scientists from the licensing, practice and medical education communities and members of the public. At this time, current and former members of the Florida-Medical, Hawaii, Iowa, Minnesota, North Carolina and Wisconsin medical boards serve on the USMLE Management Committee.

Eligibility:
USMLE is intended to be taken by students and graduates of medical school programs leading to the M.D., D.O., or equivalent degree. The USMLE requirements are as follows:

To be eligible for Step 1, Step 2 CK, and Step 2 CS, the examinee must be in one of the following categories at the time of application and on test day:

- a medical student officially enrolled in, or a graduate of, a US or Canadian medical school program leading to the MD degree that is accredited by the Liaison Committee on Medical Education (LCME), or
- a medical student officially enrolled in, or a graduate of, a US medical school leading to the DO degree that is accredited by the American Osteopathic Association (AOA), or
- a medical student officially enrolled in, or a graduate of, a medical school outside the United States and Canada listed in the *World Directory of Medical Schools* as meeting ECFMG eligibility requirements; and who meets other ECFMG criteria.

To be eligible for Step 3, prior to submitting an application, the examinee must meet the following eligibility requirements prior to submitting an application:

- obtain the MD degree (or its equivalent) or the DO degree, and
- pass Step 1, Step 2 CK, and Step 2 CS, and
- obtain certification by the ECFMG if the examinee is a graduate of a medical school outside the United States and Canada.

The USMLE program recommends that for Step 3 eligibility, examinees should have at least one postgraduate training (PGT) year in a program of an accredited graduate medical education (e.g., accredited by the ACGME or the AOA) that would qualify for medical licensure in the United States.

A physician who received his or her basic medical degree or qualification from a medical school outside the United States and Canada may be eligible for certification by the ECFMG if the medical school and graduation year are listed in the *World Directory of Medical Schools*. This applies to citizens of the United States who have completed their medical education in schools outside the United States and Canada but not to foreign nationals who have graduated from medical schools in the United States and Canada. Specific eligibility criteria for students and graduates of medical schools outside the United States and Canada to take Step 1 and Step 2 are described in the *ECFMG Information Booklet*.

Once an individual passes a USMLE Step, it may not be retaken. Rare exceptions to this policy can be found at http://www.usmle.org/bulletin/eligibility/.

Content:

The USMLE is composed of three Steps: Step 1, Step 2, and Step 3. Step 2 has two separately administered components, Clinical Knowledge (CK) and Clinical Skills (CS). Although the USMLE is generally completed over the course of several years in the career of a prospective physician, it constitutes a single examination. Each of the three Steps complements the others; no Step can stand alone in the assessment of readiness for medical licensure.

Content for the USMLE is developed by committees of medical educators and clinicians. Committee members broadly represent the teaching, practice and licensing communities across the United States. At least two of these committees critically appraise each test item or case before it is used as live (i.e., scored) material on the USMLE. These committees may revise or discard materials for any of several reasons, e.g., inadequate clinical relevance, outdated content, failure to meet acceptable statistical performance criteria, etc. For a more detailed explanation of content development, contact FSMB for a copy of the 2009 *Journal of Medical Licensure and Discipline* article, "Developing Test Content for the USMLE".

Step 1 assesses whether a candidate understands and can apply important concepts of the sciences basic to the practice of medicine, with special emphasis on principles and mechanisms underlying health, disease and modes of therapy. Step 2 assesses whether the candidate can apply medical knowledge, skills and understanding of clinical science essential for providing patient care under supervision. This includes an emphasis on health promotion, disease prevention and basic patient-centered skills (e.g., information-gathering, physician examination, communication). Step 3 assesses whether the candidate can apply medical knowledge and understanding of biomedical and clinical science essential for the unsupervised practice of medicine with emphasis on patient management in ambulatory settings. More detail on content specifications for each USMLE Step is provided at www.usmle.org.

The Step 1 examination has 280 multiple-choice test items, divided into seven 60-minute blocks, administered in a one-day, eight-hour testing session. The Step 2 CK examination has 318 multiple-choice test questions, divided into eight 60-minute blocks, administered in a one-day, nine-hour testing session. The Step 2 CS examination has 12 standardized patient cases, administered in a one-day testing session of approximately eight hours. Examinees have 15 minutes for each patient encounter and 10 minutes to record each patient note. The Step 3 examination has 415 multiple-choice test items, divided into blocks of 30-40 questions, with 45 to 60 minutes to complete each block. In addition, Step 3 includes 13 computer-based case simulations (CCS). Each simulation is allotted either 10 or 20 minutes of testing time. Step 3 is administered over two testing days – seven hours for Day 1 and nine hours for Day 2.

Test Administration:
Parts of the USMLE are administered by computer. Prometric provides scheduling and test centers for the computer-based components of the USMLE. Step 1 and Step 2 CK examinations are given around the world at Prometric Test Centers (PTCs). Step 3 is given at PTCs in the United States and its territories only. Step 2 CS is administered at five regional test centers managed by the Clinical Skills Evaluation Collaboration (CSEC). The CSEC centers are in Atlanta, Chicago, Houston, Los Angeles, and Philadelphia.

All USMLE examinations are proctored and videotaped. Strict guidelines are followed for proper identification of examinees. Efforts are made to reduce the overlap of test content from examinee to examinee and from test day to test day. Any significant breaches in security can result in the cancellation of results, suspension of an individual from USMLE, and/or annotation of score reports and official transcripts.

Test Accommodations:
Reasonable and appropriate accommodations are provided in accordance with the Americans with Disabilities Act (ADA) for individuals with documented disabilities. Examinees are informed of the availability of test accommodations in the USMLE Bulletin of Information, which can be found at www.usmle.org. Requests for test accommodations are reviewed by NBME staff trained in clinical and school psychology at the doctoral level. Further review of the request and supporting documentation may be provided by experts in the respective fields of disability with whom NBME consults regarding the presence of a disability and appropriate accommodations. NBME makes decisions regarding appropriate test accommodations for all USMLE Step examinations (1, 2CK, 2CS and 3).

Examinees with disabilities may be provided with a variety of accommodations. Efforts are made to match accommodations to the individual's functional limitations. For example, audio-recorded versions of the computer-based Step examinations are available for candidates with visual or visual processing disabilities. Special tactile versions of visual material for a Step examination may be provided for examinees with severely impaired vision. Items with an audio component may include a visual representation of the sound for hearing impaired examinees. A sign language interpreter may be provided for deaf examinees for Step 2 CS.

Score Reporting:
When examinees take Step 1, Step 2 CK, or Step 3, the computer records their responses. After the test ends, examinee responses are transmitted to the NBME for scoring. For Step 2 CS, examinees are assessed on their physical examination and communication skills (including spoken English) by the standardized patients, and on their ability to complete an appropriate patient note by physician raters. With the exception of Step 2 CS, which is reported as Pass/Fail, USMLE results are reported on a 3-digit scale. On the 3-digit scale, most Step 1 and Step 3 scores fall between 140 and 260 and most Step 2 CK scores fall between 190 and 270. The means and standard deviations for recent, first-time examinees from accredited medical school programs in the United States and Canada were: Step 1, 228 (21); Step 2 CK, 242 (17); and Step 3, 225 (15). Examinee score reports will include the mean and standard deviation for a recent administration of the examination.

USMLE score reports and transcripts show scores (for Step 1, Step 2 CK, and Step 3) and an indication of whether an examinee passed or failed (for all examinations). The same information is sent to medical licensing authorities upon examinee authorization for their use in making licensure decisions.

Under most circumstances, to receive a score on Step 1, Step 2 CK, and Step 3, an examinee must begin every block of the test. If an examinee does not begin every block and no results are reported, an "incomplete examination" attempt appears on the USMLE transcript. If an examinee registers for but does not begin an examination, no record of the test will appear on the examinee's transcript.

For Step 2 CS, if an examinee leaves the test early, or for some other reason fails to carry out one or more of the cases, performance may be assessed on those cases completed. If this assessment were to result in a passing outcome no matter how poorly an examinee may have performed on the missed case(s), then a "pass" will be reported. If this assessment were to result in a failing outcome no matter how good an examinee's performance may have been on the missed case(s), then a "fail" will be reported. Otherwise, the attempt may be recorded as an "incomplete."

Some unscored items and cases may also be included in the Step examinations for research purposes.

A Score Interpretation Guide (SIG) and annual performance data for all Step examinations are available in the "Data and Research" section of the USMLE website (http://www.usmle.org/data-research/).

Minimum Passing Scores:
The USMLE program provides a recommended pass or fail outcome for all Step examinations. Recommended performance standards for the USMLE are based on a specified level of proficiency. As a result, no predetermined percentage of examinees will pass or fail the examination. The recommended minimum passing level is reviewed periodically and may be adjusted at any time. Notice of such review and any adjustments will be posted at the USMLE website.

A statistical procedure ensures that the performance required to pass each test form is equivalent to that needed to pass other forms; this process also places scores from different forms on a common scale.

For Step 3, performance on the case simulations affects the Step 3 score and could affect whether examinees pass or fail. The proportional contribution of the score on the case simulations is no greater than the amount of time examinees are allowed for the case simulations.

Current minimum passing scores for each Step are as follows (mean scores are provided in the SIG):
Step 1: 192
Step 2 CK: 209
Step 3: 196

Although 2-digit scores are no longer reported, test results reported as passing on the three-digit scale would represent an exam score of 75 or higher if a two-digit score had been reported.

Score Reliability:
Reliability refers to a score's expected consistency. Candidates' test scores are reliable to the extent that an administration of a different random sample of items from the same content domain would result in little or no change in each candidate's rank order among a group of candidates. In general, long examinations of very similar items administered to a diverse group of examinees yield high reliabilities.

One of the ways that reliability is measured is through the standard error of measurement (SEM). The SEM provides a general indication of how much a score might vary across repeated testing using different sets of items covering similar content. As a general rule of thumb, chances are about two out of three that the reported score is within one SEM, plus or minus, of the score that truly reflects the examinee's ability (i.e., of the score that would be obtained if the examination were perfectly reliable). The current SEM is approximately 5 points on the three-digit reporting scale for Step 1, and 6 points on the three-digit reporting scale for Steps 2CK and 3. The Step 2 CS is only reported as a pass or fail, without a reported score.

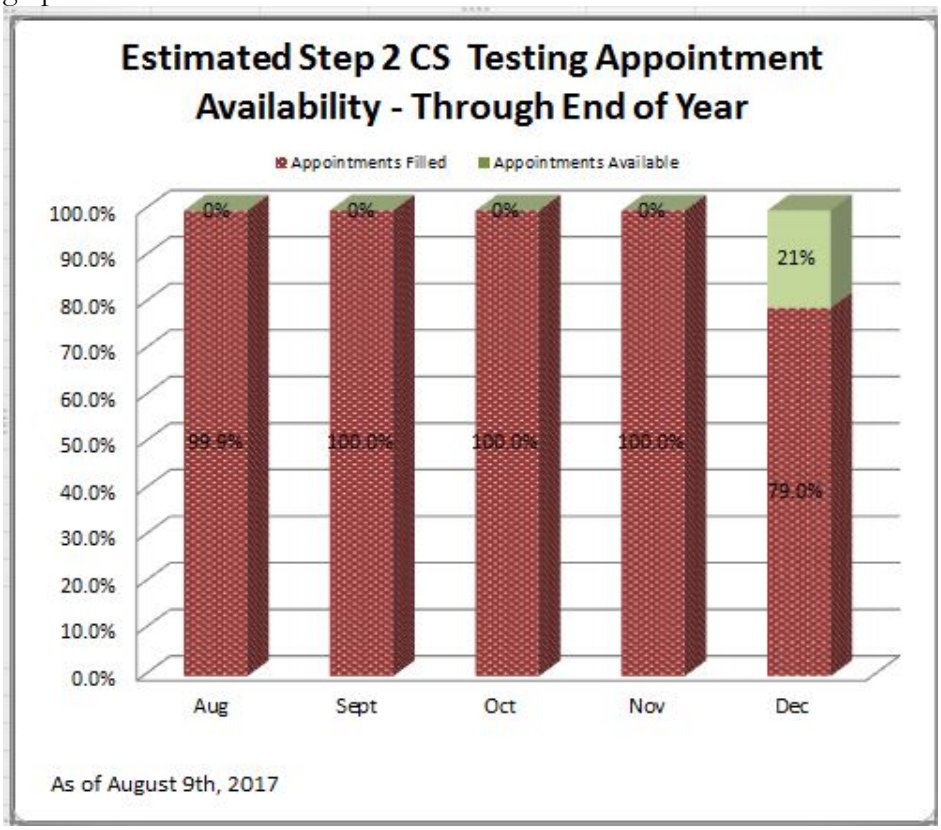
Score Validity:
Score validity refers to the extent to which existing evidence supports the appropriateness of the interpretation of test outcomes. For USMLE, the intended interpretation of passing all examinations is that the individual has the fundamental knowledge and skills required to begin patient care in a safe and effective manner. The best way to support a proposed score interpretation is through accumulation of developmental documentation and research on all components of the test design, delivery, and scoring processes, and through tracking the relationship of examination outcomes with later measures of the individual's ability. The USMLE program has a fairly extensive history of such activity. A list of research citations as well as descriptions of many of the USMLE processes is available on the USMLE website. (http://www.usmle.org/data-research/)

USMLE Program News, 2015-2017

Following are abbreviated versions of news items posted on the USMLE website from 2015-2017.

Step 2 CS cases – common presenting signs and symptoms (posted September 2017)
A list of common presenting signs and symptoms that Step 2 Clinical Skills (CS) examinees may expect to see during their examination has been posted to the USMLE website. These are examples only, and the list does not represent all possible presenting signs and symptoms that may be encountered.

Scheduling Reminder for Step 2 CS (posted August 2017)
Schedules at all test centers fill up quickly. We strongly encourage examinees to complete their scheduling before May 31 of the calendar year in which they plan to test. Based on scheduling trends, if you try to schedule after August 1, you may find that there are no available testing appointments through the end of the year unless there are cancellations. The graph below is an estimate of test appointment availability for the next six months as of the date at the bottom of the graph.



Change in Performance Standards for Step 2 CS (posted August 2017)
This announcement describes a change in the performance standards for the USMLE Step 2 CS examination that will affect examinees testing on or after September 10, 2017. At its July 2017 meeting, the USMLE Management Committee conducted a review of the recommended minimum passing levels for USMLE Step 2 CS and voted to increase the required minimum passing level for all three Step 2 CS subcomponents: Communication and Interpersonal Skills (CIS), Spoken English Proficiency (SEP), and Integrated Clinical Encounter (ICE). Because numerical scores are not

reported for Step 2 CS, the decisions of the Management Committee are reported in terms of potential impact on examinees, using data from recent administrations. If the new minimum passing requirements were applied to the group of first-time examinees who recently tested, the overall passing rate for examinees from US medical schools would be approximately three percent lower and the overall passing rate for examinees from international medical schools would be approximately eight percent lower.

Review of USMLE Step 1 minimum passing performance (posted July 2017)
The USMLE program recommends a minimum passing level for each Step examination. The USMLE Management Committee is responsible for establishing and monitoring these standards, and is asked to complete an in-depth review of standards for each examination every three to four years. For the 2017 Step 1 review, information from multiple sources will be considered:

- Results of content-based standard setting exercises conducted with three independent groups of physicians in 2017;
- Results of surveys of various groups (e.g., state licensing representatives, medical school faculty, samples of examinees) concerning the appropriateness of current pass/fail standards for Step examinations;
- Trends in examinee performance; and
- Score precision and its effect on the pass/fail outcome.

The USMLE Management Committee is scheduled to review the minimum passing score for the USMLE Step 1 examination at its meeting on November 29-30, 2017. If the Committee determines that a change to the minimum passing score is appropriate, the new recommended minimum passing score will become effective for all examinees who take a Step 1 examination on or after January 1, 2018. The decision of the Committee will be posted at the USMLE website.

USMLE Score Interpretation Guidelines (posted July 2017)
USMLE Score Interpretation Guidelines (SIG) have been posted to the USMLE website at http://www.usmle.org/data-research/. Topics include in the SIG include: Description of Examinations; Understanding Your Score; Recent Means and Standard Deviations (SDs); Norm Table; Passing Scores; Precision of Scores; and Guidelines for Use of USMLE Step Scores for Selection Decisions. The means and SDs and the norm table will be updated annually. Because percentile ranks depend on the cohort of examinees, you should always use the most recent norm table available on the USMLE website to obtain percentile ranks.

New features in Step 2 CS patient note program (posted June 2017)
Two user-adjustable display features, text magnification and color inversion, are now available in the patient note program used by Step 2 CS examinees after each patient encounter. The color inversion feature changes the color of the text and background from black-on-white to white-on-black. The ability to invert color improves readability for some users. The text magnification feature will magnify the entire screen.

Change to patient note program for the Step 2 CS exam (posted June 2017)
On or after September 10, 2017, patient notes written in the Step 2 CS exam will automatically submit at the end of the 25 minutes allotted for each patient encounter. Each patient encounter includes 15 minutes in the examination room, plus an additional 10 minutes to write the patient note. Examinees who leave the exam room before 15 minutes will continue to have additional time

for the patient note. A countdown clock will be visible in the upper right hand corner of the patient note program screen, showing how much time remains. An announcement will be made when two minutes remain for writing the note. The countdown clock will change to red when 30 seconds remain. At the end of 25 minutes, the note will automatically submit and examinees will not be able to continue writing.

Step 2 CS communication skills cases (posted May 2017)
Beginning May 21, 2017, USMLE Step 2 CS examinees may see a case in which the primary task is to assist the standardized patient with making decisions and/or with disease or problem management. For these cases, a physical examination will not be required, and the data interpretation section of the patient note will not need to be completed.

2018 schedule for reporting Step 2 CS results is available (posted April 2017)
The 2018 schedule provides guidelines regarding when a result for a Step 2 Clinical Skills (CS) exam date will be reported. The schedule is available at http://www.usmle.org/step-2-cs/#reporting.

Enhanced security policies at CSEC test centers (posted March 2017)
Enhanced security policies will take effect in all Clinical Skills Evaluation Collaboration (CSEC) test centers beginning April 4, 2017. The enhanced security procedures are being conducted to inspect for electronic devices. The USMLE Step 2 CS is administered at CSEC test centers in Atlanta, Chicago, Los Angeles, Houston, and Philadelphia. Under the enhanced procedures:

- All examinees will be required to remove eyeglasses for close visual inspection by the test center administrators. These inspections will be brief and will be done at check-in and upon return from breaks.
- Jewelry, except for wedding and engagement rings, is prohibited.
- Hair accessories are subject to inspection. Examinees wearing ornate clips, combs, barrettes, headbands, and other hair accessories may be asked to store such items in their locker.

Understanding your USMLE score report (posted March 2017)
A short video designed to help examinees interpret the USMLE score report, and understand decisions and actions that can be taken based on exam performance, is now available at: http://www.usmle.org/transcripts/. The video is part of an effort to address frequently asked questions from examinees and others about the USMLE examination process. Additional videos will be forthcoming.

USMLE takes action against individuals found to have engaged in Irregular Behavior (posted November 2016)
The USMLE Committee for Individualized Review (CIR) meets periodically throughout the year to review cases involving allegations of irregular behavior by applicants and/or examinees. At its recent meetings, the CIR considered multiple cases involving the following:

- falsifying information, including the creation of falsified score reports
- seeking to obtain unauthorized access to examination materials (including the solicitation of exam content via online web forums)
- communicating about specific test items, cases, and/or answers with other examinees (including the sharing of examination content via online web forums and file sharing websites)
- applying for and/or attempting to take an examination when ineligible
- accessing unauthorized items, equipment, or materials while on an unauthorized break

- making notes on test day on something other than the writing materials provided by test center staff
- failure to follow test center instructions, including typing past the 'End Patient Note' announcement in Step 2 Clinical Skills

Actions taken by the CIR at its recent meetings included:

- annotating individual USMLE records with a finding of irregular behavior
- barring access to USMLE for periods up to 5 years
- reporting the finding of irregular behavior to the disciplinary data bank (Physician Data Center at the Federation of State Medical Boards)
- State medical boards routinely query this data bank as part of their licensing processes
- cancelling the examinee's score because the validity of a passing level score is in question

As evidenced by the sanctions listed above, a finding of irregular behavior carries significant potential impact. USMLE applicants and examinees are reminded to read the *USMLE Bulletin of Information* carefully, follow the rules of conduct during testing, and refrain from any pre- or post-examination conduct deemed to be irregular behavior. Applicants and examinees are also encouraged to watch the USMLE Security Video.

The USMLE is committed to maintaining the integrity of its examination so that state medical boards may continue to rely upon it as an integral part of their decision-making process for licensure. Applicants and examinees are advised to observe all USMLE policies and procedures to avoid the potentially significant implications arising from a finding of irregular behavior. USMLE encourages you to provide information about cheating and other activity of which you are aware that may compromise the security and integrity of USMLE. Please use the contact form on the USMLE website to report such information.

Enhanced security policies at Prometric test centers (posted October 2016)
Beginning October 15, 2016, Prometric center administrators will conduct inspections of all eyeglasses, jewelry, and other accessories. The purpose of the enhanced security procedures is to inspect for electronic devices. Under the enhanced procedures:

- All examinees will be required to remove eyeglasses for close visual inspection by the test center administrators. These inspections will be brief and will be done at check-in and upon return from breaks.
- Jewelry, except for wedding and engagement rings, is prohibited.
- Hair accessories are subject to inspection. Examinees wearing ornate clips, combs, barrettes, headbands, and other hair accessories may be prohibited from wearing them in the testing room and asked to store such items in their locker.

Images in Step 2 Clinical Skills examination (posted March 2016)
Beginning May 22, 2016, USMLE Step 2 CS examinees may see a case in which the standardized patient provides a digital image (for example, a photograph, x-ray, MRI, or CT) on a tablet computer. Examinees will be able to enlarge the image. During the pre-session orientation, examinees will have an opportunity to view a sample image on a tablet, and to practice enlarging the image. Not all examinations will include a case with an image. Examinees will see a maximum of one case with an image per examination.

Important announcement regarding Fifth Pathway certificates and USMLE Step 3 (posted March 2016)
As previously announced, the USMLE will cease acceptance of Fifth Pathway certificates for the purpose of meeting Step 3 eligibility requirements, effective January 1, 2017. Individuals who hold valid Fifth Pathway certificates, and are otherwise eligible, may use their Fifth Pathway certificates to meet Step 3 eligibility requirements, and may apply for Step 3 through December 31, 2016. Individuals holding Fifth Pathway certificates that are not accepted by the USMLE program for purposes of meeting Step 3 eligibility will be required to obtain ECFMG certification in order to be eligible for Step 3.

USMLE Security Video (posted January 2016)
Remember, the stakes on a medical licensing exam are high! Don't do something that might jeopardize your future as a licensed physician. Be sure you understand all the USMLE policies on security and irregular behavior by viewing our new security video, http://www.usmle.org/security.

Change in minimum passing requirements for Step 3 (posted December 2015)
At its December 2015 meeting, the USMLE Management Committee conducted a review of the Step 3 examination minimum passing score and decided to raise the recommended Step 3 minimum passing score from 190 to 196.

Expanded Version of USMLE Content Outline (posted April 2015)
An expanded version of the USMLE Content Outline, which provides a common organization of content across all USMLE exams, is available at www.usmle.org/pdfs/usmlecontentoutline.pdf. The expanded version provides additional detail about subcategories of the 18 sections of the content outline. It is important to note that the USMLE Content Outline is not intended as a curriculum development or study guide. It provides a flexible organization of content for test construction that can readily accommodate new topics, emerging content domains, and shifts in emphasis. While the USMLE Content Outline is common to all exams, each exam continues to have its own test specifications. Each exam emphasizes certain parts of the outline, and no single examination will include questions on all topics in the outline.

USMLE Strategic Communication Outreach

In 2016, the USMLE program received its heaviest criticism since the period preceding the launch of the Step 2 Clinical Skills (CS) component in 2004 – specifically, national pushback against the USMLE Step 2 CS from U.S. medical students. While the USMLE program has worked over the past year to address the students' concerns, the criticism has served as a valuable prompt to revisit fundamental elements of how the USMLE program communicates with the primary stakeholders in the exam – that is, directly to examinees, medical educators and medical regulators and, indirectly, to the public.

Consideration and evaluation of the program's current communication with stakeholders highlight the need for a more proactive approach to communicating about the USMLE, as well as the need for improved *listening* to stakeholder concerns. Below are the main elements and initiatives comprising a new strategic communication outreach for the USMLE.

Key messaging:
Work is ongoing to refine key messages and themes that USMLE seeks to highlight. These key messages constitute the philosophical foundation for communication platforms (USMLE website, Facebook, Twitter, etc.) and are critical to ensuring that postings are consistent with an overall messaging strategy. Continued work is also underway to identify a specific overarching set of core messages regarding USMLE as well as messages tailored to specific audiences (examinees, medical regulators, the public, etc).

Examinee input:
The 'national faculty' of volunteers working on the USMLE provide the program with direct input from medical educators and regulators. The latter's perspective is also formally captured through the ten-member State Board Advisory Panel to USMLE that meets annually with staff. While these are effective in their own right, the current USMLE committee structure does not offer a platform for more direct input and feedback from those most directly impacted by the exam – examinees.

The USMLE is establishing a Medical Student & Resident Advisory Panel to serve in an advisory capacity to the program. The 15-member panel will be composed of five U.S. allopathic students, two osteopathic medical students, two students from international medical schools, five residents and one public member. All students and residents will have passed at least one USMLE Step exam. The panel's charge will be three-fold: 1) to assist USMLE staff in working through operational issues directly impacting the examinee experience of the exam, 2) to serve as an additional voice and resource to inform more substantive policy questions from or before the USMLE Management and Composite Committees and (3) to serve as informal ambassadors of the USMLE program.

The Medical Student & Resident Advisory Panel to USMLE will allow FSMB and NBME staff working on USMLE program to:

- *collect feedback* from students and residents on issues and topics specific to the USMLE, especially ongoing and/or planned strategic enhancements or similar processes;
- *test assumptions* about the USMLE with a medical student and resident audience; and
- *gain insight* into the perspective of medical students and residents on USMLE policy issues.

Social Media:
To date, the USMLE has made limited use of the social media. For example, the program has a Facebook account and has secured, but not yet started utilizing, a Twitter account ("@USMLE"). The goal in moving toward greater use of social media is to supplement and strengthen USMLE communication and outreach efforts via the USMLE website (www.usmle.org).

The primary audience for social media outreach is the 100,000+ individual examinees taking the USMLE each year. Important secondary audiences include medical educators at both the undergraduate and graduate levels and members of the state medical board community.

Video:
Targeted use of short videos is another tool for proactive communication to stakeholders. The goal of any USMLE video will be to:

- *inform or explain practical issues or topics* important to the experience of examinees in registering or testing; or
- *communicate the integrity and value* of USMLE as a critical piece of the US medical regulatory landscape; or
- *humanize* the USMLE by showcasing the people and/or groups involved in its construction and governance, e.g., our 'national faculty.'

Other elements of a strategic communication currently under evaluation:

- Routine (often automated) email communications with applicants and examinees are being reviewed to ensure consistency in messaging among the three USMLE registration entities (i.e., FSMB, NBME and ECFMG).
- Targeted use of focus groups as a means of garnering feedback on USMLE initiatives. For instance, this approach was utilized in early 2017 when local Philadelphia-area medical students participated in focus group exercises to provide feedback on draft models for updating and improving the USMLE score report.
- Major revisions to the USMLE website. This would represent a longer-term project.

USMLE Enhancements

Design Review of Step 1 and Step 2 Clinical Knowledge Examinations
Similar to the review of the USMLE Step 3 examination that prompted recent changes to the examination, USMLE governance is conducting a review of the Step 1 and Step 2 Clinical Knowledge examinations to determine if these examinations should be redesigned. The USMLE Management Committee is investigating a potential expansion of the competencies important to supervised practice, including but not limited to further development of content related to communication, patient safety, and professionalism. Planned changes will be announced on the USMLE website well in advance of implementation.

Investigating Improvements to Reporting of USMLE Results to Examinees and Medical Schools
The USMLE program continues to investigate ways to improve the reporting of USMLE results to examinees and medical schools. The investigation includes a review of the current reports; surveys to both examinees and schools to determine how examinees and medical schools use and interpret score reports; a review of the informational materials provided to examinees and medical schools; and input from USMLE governance. In 2017, several examinee score report prototypes were reviewed by the USMLE Management Committee and evaluated by examinee focus groups. A subset of those score report prototypes are being shared with examinees through a Cognitive Interview pilot in order to determine whether the new format is easier for examinees to understand and interpret.

New features in Step 2 CS patient note program
Two user-adjustable display features, text magnification and color inversion, are now available in the patient note program used by Step 2 CS examinees after each patient encounter. The color inversion feature changes the color of the text and background from black-on-white to white-on-black. The ability to invert color improves readability for some users. The text magnification feature will magnify the entire screen.

In September 2017, typed patient notes will automatically submit at the end of the 25 minutes allotted for each patient encounter in the Step 2 CS examination. As a part of this enhancement, a countdown clock will be visible in the upper right hand corner of the patient note program screen, showing how much time remains. An announcement will be made when two minutes remain for writing the note. The countdown clock will change to red when 30 seconds remain. At the end of 25 minutes, the note will automatically submit and examinees will not be able to continue writing.

Medical Licensing Authorities and the USMLE

USMLE Services to State Medical Boards

In 2016, the FSMB registered approximately 34,000 applicants for the USMLE Step 3. Step 1 and Step 2 registration services are provided by NBME for students and graduates in US medical and osteopathic schools and by ECFMG for students and graduates of international medical schools under eligibility requirements established by the USMLE Composite Committee.

The FSMB also produced and delivered approximately 76,000 USMLE transcripts, including approximately 37,000 transcripts produced as part of the Federation Credentials Verification System profile sent to state medical boards for physicians seeking licensure.

The USMLE makes a wide range of informational materials on the program available to medical licensing authorities. A series of informational articles on USMLE have appeared in the FSMB's *Journal of Medical Regulation*, and the FSMB regularly hosts web seminars on USMLE-related topics. Subjects covered in past webinars include USMLE attempt, time limit, and retake policies; update on content changes to Step 3, including the discontinuance of state board sponsorship for Step 3; challenges to the Step 2 CS; and annotations on the USMLE transcript. Copies of these presentations are available upon request from the FSMB.

State Medical Boards' Participation in USMLE

The FSMB and NBME also hosts an annual USMLE Orientation workshop for members of state medical boards. This free workshop is open to current and former members of state medical boards with an interest in participating in the program. The 12th workshop took place in late September 2017 at NBME's offices in Philadelphia. Thirteen members of the following state boards participated: District of Columbia, Guam, Iowa, North Dakota, South Dakota, Texas, Utah-Medical, Virginia, Vermont-Medical and Washington-Medical. To date, 114 individuals from 50 medical and osteopathic boards have participated. Forty-five (45) past workshop participants have served subsequently with the USMLE program. This includes participation on standard-setting and advisory panels, as well as serving on the USMLE Management Committee and item-writing committees for the program. Physician and public members of state medical and osteopathic boards interested in attending this workshop should contact the FSMB for more information.

In 2011, the USMLE established an advisory panel composed of members and senior staff from state medical boards. The State Board Advisory Panel to the USMLE convened again in October 2017. The panel provides the USMLE with firsthand feedback on timely issues and major initiatives from the primary intended user of USMLE scores – state medical boards. Topics addressed by the panel in 2017 included forthcoming updates to USMLE score reports, the Step 2 CS exam, USMLE strategic communication work, requests for exceptions to USMLE policies, and other updates or issues of interest to state boards and the panel members. The current members of the panel include staff and board members from the California-Medical, Illinois, Montana, Nevada-Medical, North Carolina, Pennsylvania-Medical, Tennessee-Medical & Tennessee-Osteopathic, Virginia, Wisconsin and Wyoming boards.

Groups such as the State Board Advisory Panel to USMLE and outreach efforts such as the annual orientation workshop for medical board members continue the long history of the USMLE program involving the state medical board community directly in the operations of the program. Since its implementation in 1992, 202 members and staff from state medical boards have participated in the

USMLE program in some capacity. These individuals represent 58 different medical and osteopathic licensing boards throughout the United States.

USMLE Policies

The USMLE recommends that state medical boards require the dates of passing Step 1, Step 2, and Step 3 to occur within a seven-year period. The program, however, recommends that state medical boards consider additional time for individuals completing a dual degree program (MD/PhD; DO/PhD). Additionally, the USMLE program imposes a limit of no more than six attempts to pass each of the Step or Step Components. Additional attempts are allowed only at the written request of a state medical board.

Most state medical boards utilizing the USMLE impose both time and attempt limits on the USMLE as part of their requirements for obtaining an initial medical license. Currently, 40 out of 53 medical boards impose some limit on the number of attempts at the USMLE; 45 out of 53 medical boards impose a time limitation for the completion of the USMLE sequence. For a complete listing, please visit: www.fsmb.org/licensure/usmle-step-3/state_specific.

Specific requirements for taking and retaking USMLE are provided in the FAQs on the USMLE website at: www.usmle.org/frequently-asked-questions/.

For information on exceptions to USMLE policy, contact the FSMB or visit the USMLE website at www.usmle.org/bulletin/eligibility/.

USMLE Data and Research

Aggregate Performance Data
The USMLE program publishes aggregate performance data for all Steps since the program's inception. These data include examinee volume and passing percentages categorized by first-taker and repeater examinees; US/Canadian and international students/graduates; allopathic and osteopathic examinees. These performance data are available at the USMLE website at www.usmle.org/performance-data/.

Passing rates and examinee counts for 2015-2016 are provided for each Step in this report's Appendix.

Research Agenda
Each year, the USMLE Composite Committee reviews and endorses a research agenda for the program. The committee endorsed the following research themes and/or topics for the program for 2017-2018: enhancements to the USMLE; relating scores and pass/fail outcomes to external measures; determining strategies for providing meaningful performance feedback to examinees and stakeholders; and USMLE security procedures.

2016 Publications
Below is a list of program-related publications by USMLE staff in 2015. A more extensive listing (2009-2016) is available on the USMLE website at http://usmle.org/data-research/.

Clauser J, Hambleton R, Baldwin P. The effect of rating unfamiliar items on Angoff passing scores. *Educational and Psychological Measurement*. 2016; Oct 10. [Epub ahead of print]

Margolis MJ, Mee JM, Clauser BE, Winward M, Clauser JC. Effect of content knowledge on Angoff-style standard setting judgments. *Educational Measurement: Issues and Practice*. 2016;35(1):29-37.

Cuddy MM, Winward ML, Johnston MM, Lipner RS, Clauser BE. Evaluating validity evidence for USMLE Step 2 Clinical Skills data gathering and data interpretation scores: Does performance predict history-taking and physical examination ratings for first-year internal medicine residents? *Academic Medicine*. 2016;91:133-139.

Prober CG, Kolars JC, First LR, Melnick DE. A plea to reassess the role of United States Medical Licensing Examination Step 1 scores in residency selection. *Academic Medicine*. 2016;91:12-15.

Raymond MR, Ling Y, Grabovsky I. Investigating the performance of second language medical students on lengthy clinical vignettes. *Evaluation & the Health Professions*. 2016; Oct 19. [Epub ahead of print]

Katsufrakis PJ, Uhler TA, Jones LD. The residency application process: pursuing improved outcomes through better understanding of the issues. *Academic Medicine*. 2016;91:1483-1487.

Standard Setting

USMLE General Procedures for Standard Setting

The USMLE system for setting standards is established by the USMLE Composite Committee, which includes representatives of the ECFMG, FSMB, NBME and the public. The system specifies the kinds of data to be gathered and how the data are to be gathered, the frequency of reviewing the standards and adjusting them, and assigns the judgment task to the Management Committee. The Management Committee, jointly appointed by the FSMB and NBME, must use the procedures defined by the Composite Committee, but is free to set the standard and revise the standard as it deems necessary. The decision of the Management Committee is final; no superior governing committee is authorized to alter its decision. The Management Committee includes those with educational, licensing, and clinical practice perspectives, as well as a representative from the public.

Current policy requires that the Management Committee review the effectiveness of Step standards at least annually. A comprehensive review and possible adjustment of the standard must be undertaken approximately every four years. In addition, when there are any major changes to the design or format of the Step examination, the Management Committee is asked to establish new passing requirements for the redesigned components. USMLE believes that there must be an opportunity for review and adjustment of standards in order to reflect the realities of change in the content of medicine, the nature of the test, the characteristics of examinees, and the expectations of stakeholders. Such review of the standard is essential to assure that the judgment inherent in defining the standard reflects current conditions, not those that were pertinent in the past.

Mandated Data Sources Informing the Judgment Process

USMLE policy mandates the use of four categories of data in making judgments about standards. These are:

- Content-referenced judgments of experts. Content experts provide their opinions, based upon review of content and examinee performance, on the appropriate requirements for passing the examination.
- Survey of stakeholders. Expectations of stakeholders for the percent of examinees, to whom the stakeholder is exposed, that should pass the examination.
- Cohort performance trends. Trends in examinee performance over a long period of time and the effect of repeated attempts at the examinations on the failure rate in a defined cohort of examinees.
- Confidence intervals in the region of the cut-score. Estimates of numbers of misclassified examinees based on historical distributions of examinee performance and the measurement error in the scale area under consideration for the cut-score.

Setting the Standard

The Management Committee meets to consider the collected data. As part of this process the committee reviews all of the data collection processes and considers the combined data as part of the decision-making process. Typically, the question posed of the committee is whether the externally collected data, performance trends, and score reliability data suggest that the current standards need to be changed. The committee can allow the standards to remain the same or can vote to make a change. If the latter occurs then the committee identifies the new performance requirements.

USMLE policy requires that standards be implemented on the first day of the month following the decision of the Management Committee. Information regarding the timing of the standard setting process and its outcomes is posted on the USMLE website.

Resources

Websites:
Multiple avenues for obtaining additional information on the USMLE exist:

- USMLE website (www.usmle.org) provides the most current information on the program.
- FSMB website (www.fsmb.org) contains information specific to USMLE Step 3.
- NBME website (www.nbme.org) contains information specific to registering for USMLE Steps 1, 2CK and 2CK for students and graduates of U.S. and Canadian medical schools.
- ECFMG website at (www.ecfmg.org) provides information on ECFMG certification and registering for USMLE Steps 1, 2CK and 2CK for students and graduates of international medical schools seeking information.

Written materials:

- *USMLE Bulletin of Information* – provides USMLE policies and procedures and can be accessed from the main page of the USMLE website (www.usmle.org).
- NBME *Examiner* – the official newsletter of the NBME & provides additional information on USMLE; the current and archived issues can be found under the Publications tab at www.nbme.org.
- *Journal of Medical Regulation* (previously the *Journal of Medical Licensure and Discipline)* – published by the FSMB, the *Journal* occasionally provides informational articles summarizing major aspects of the USMLE program. Topics covered include Step 2 Clinical Skills, the development of multiple-choice questions for test content, research, and processes for maintaining program security. The following articles are available at http://jmr.fsmb.org/archives/ or upon request from the FSMB:
    - "Implementing Strategic Changes to the USMLE." *Journal of Medical Regulation*. Vol. 100, No. 3, 2014.
    - "An Assessment of USMLE Examinees Found to Have Engaged in Irregular Behavior, 1992-2006." *Journal of Medical Regulation*. Vol. 95, No. 4, 2010.
    - "Developing Content for the United States Medical Licensing Examination." *Journal of Medical Licensure and Discipline*. Vol. 95, No. 2, 2009.
    - "Maintaining the Integrity of the Unites States Medical Licensing Examination." *Journal of Medical Licensure and Discipline*. Vol. 92, No. 3, 2006.
    - "The Introduction of Clinical Skills Assessment into the United States Medical Licensing Examination (USMLE): A Description of the USMLE Step 2 Clinical Skills (CS)." *Journal of Medical Licensure and Discipline.* Vol. 91, No. 3, 2005.
    - "The United States Licensing Examination." *The Journal of Medical Licensure and Discipline*. Vol. 91, No. 1, 2005.

Key contacts:
The following individuals are key contacts for state medical boards on matters involving the USMLE.

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APPENDIX

The data tables below are extracted from the performance data provided on the USMLE website at http://www.usmle.org/performance-data/. Similar data are available for all years of the USMLE program.

Table 1

2016 STEP 1 ADMINISTRATIONS *
Number Tested and Percent Passing

	# Tested	# Passing
Examinees from US/Canadian Schools that Grant:		
MD Degree	21,122	94%
1st Takers	20,122	96%
Repeaters**	1,000	64%
DO Degree	3,454	93%
1st Takers	3,398	94%
Repeaters**	56	75%
Total US/Canadian	24,576	94%
Examinees from Non-US/Canadian Schools		
1st Takers	15,031	78%
Repeaters**	2,575	39%
Total non-US/Canadian	17,606	72%

Notes for Table 1
* Represents data for examinees tested in 2016 and reported through February 1, 2017.
** The # tested listed for repeaters represent examinations given, not the number of examinees for the specified time period.

Table 2

2015-2016 STEP 2 CLINICAL KNOWLEDGE (CK) ADMINISTRATIONS *
Number Tested and Percent Passing

	# Tested	# Passing
Examinees from US/Canadian Schools that Grant:		
MD Degree	21,515	96%
1st Takers	20,535	97%
Repeaters**	980	71%
DO Degree	2,272	94%
1st Takers	2,228	94%
Repeaters**	44	84%
Total US/Canadian	23,787	95%
Examinees from Non-US/Canadian Schools		
1st Takers	12,720	80%
Repeaters**	2,738	53%
Total non-US/Canadian	15,440	75%

Notes for Table 2

* Data for Step 2 CK are provided for examinees tested during the period of July 1, 2015 to June 30, 2016.

** The # tested listed for repeaters represent examinations given, not the number of examinees for the specified time period.

Table 3

2015-2016 STEP 2 CLINICAL SKILLS (CS) ADMINISTRATIONS *
Number Tested and Percent Passing

	# Tested	# Passing
Examinees from US/Canadian Schools that Grant:		
MD Degree	20,662	97%
1st Takers	19,906	97%
Repeaters**	716	85%
DO Degree	46	91%
1st Takers	46	91%
Repeaters**	0	NA
Total US/Canadian	20,668	97%
Examinees from Non-US/Canadian Schools		
1st Takers	12,051	82%
Repeaters**	2,300	71%
Total non-US/Canadian	14,351	81%

Notes for Table 3

* * Data for Step 2 CS are provided for examinees tested during the period of July 1, 2015 to June 30, 2016.

** The # tested listed for repeaters represent examinations given, not the number of examinees for the specified time period.

Table 4

2016 STEP 3 ADMINISTRATIONS *
Number Tested and Percent Passing

	# Tested	# Passing
Examinees from US/Canadian Schools that Grant:		
MD Degree	19,574	96%
1st Takers	18,997	97%
Repeaters**	597	70%
DO Degree	21	85%
1st Takers	20	95%
Repeaters**	1	§
Total US/Canadian	19,595	96%
Examinees from Non-US/Canadian Schools		
1st Takers	8,804	86%
Repeaters**	1,355	53%
Total non-US/Canadian	10,159	81%

Notes for Table 4
* The table represents data for examinees tested in 2016 with scores reported by February 1, 2017.
** The # tested listed for repeaters represent examinations given, not the number of examinees for the specified time period.
§ USMLE does not report percent for cohort populations of five or fewer examinations