

COLLABORATION

2019 NBME ANNUAL REPORT



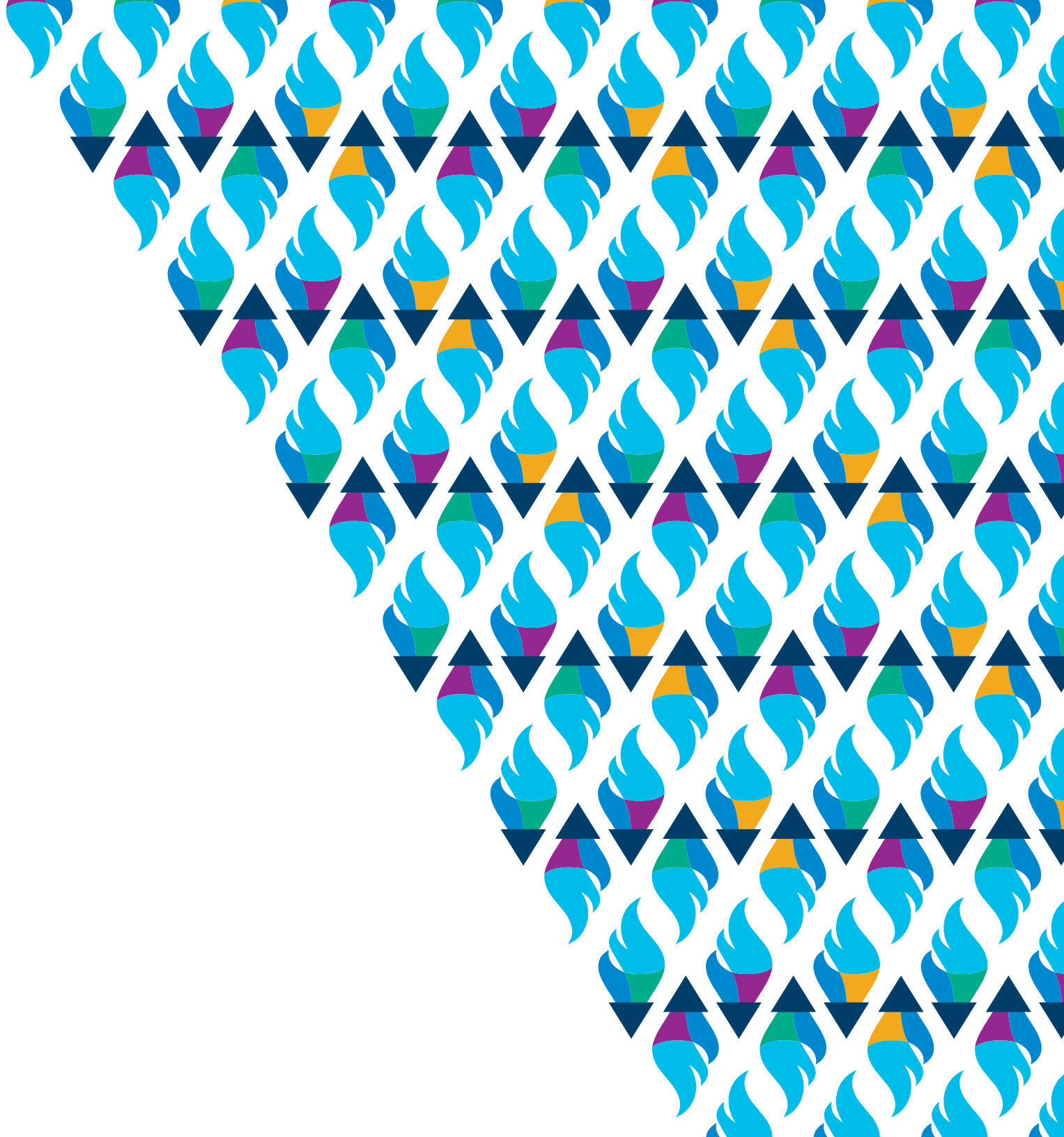


TABLE OF CONTENTS

2	Leadership Insights
4	Gaining Momentum
6	Collaborating for Progress
12	Improving Assessment
14	Supporting the Community
16	Talent and Recognition
22	Program Highlights
28	Membership & Members of Committees

LEADERSHIP INSIGHTS

OUR JOURNEY: FROM REALIZATION TO RECOMMITMENT



Three years ago, we started a journey to take a fresh look at today's medical education and health care system through the eyes of our stakeholders—the educators, students, regulators, physicians, and partners we support with high-quality assessments. Our desire was, and still remains, to ensure

that the services we bring forward fulfill the evolving needs for health professionals today and into the future.

The wide and rich variety of input sought across the house of medicine deepened in 2019. Frankly, it has required humility to learn the diverse perspectives and strength to internalize the feedback. From the Invitational Conference on USMLE® Scoring (InCUS) to the hard look at our lagging technology, the journey has inspired a fresh strategic road map with focused initiatives and accelerated deliverables. We do this for all health professionals to serve their needs, at the right

time, with the right tools. Many of you have commented that you were surprised and inspired by the exploration, collaborative problem solving, and expertise of our NBME team. Our teams are energized by the opportunities identified and are already delivering solutions in some of the areas where NBME has room to grow.

In this NBME Annual Report, *Collaboration*, we share with you a summary of our progress in 2019. We also offer a glimpse into potential directions for the years to come. Our objective, of course, is to better serve everyone—from the students who sit for our exams to the patients they will treat.

We remain more committed than ever to innovating and improving through collaborative exchanges, contributions to enhance the science of assessment, and programs that further support our community.

A handwritten signature in black ink, reading "Peter J. Katsufrakis". The signature is fluid and cursive, with a small dot at the end.

Peter J. Katsufrakis, MD, MBA
President and Chief Executive Officer

DIVERSITY OF VOICE AND EXPERIENCE



I am honored and privileged to assume the role of NBME Chair at this most eventful time in its history when many of the changes set in motion in recent years are coming to fruition. The first set of crucial initiatives are now working well because they were started for the best possible reason—to

serve the public, our patients, at the highest possible level as we go forward.

Behind the new initiatives and their execution is the conscientious adherence to a wide-ranging collaborative process involving all of NBME's stakeholders. These stakeholders include individuals and organizations from across the United States and around the world that cut across every aspect of the house of medicine. They, increasingly, include other disciplines and professions involved in achieving high-

quality health care. The public perspective is also growing and directly represented. By working with such a wide variety of voices, NBME gains the experience of each of these stakeholders. This diversity of voice and experience is making a positive difference in these efforts, and will continue to do so as health care change accelerates in the future.

As NBME moves forward into that future, the Executive Board and I see not only the progress, but also the absolute necessity of what the teams are doing. Having served this organization in a number of roles and on a variety of committees, I see a renewed passion at NBME. The momentum is definitely “on” as the organization strives to enable truly exceptional patient-centered health care through state-of-the-art assessment.

A handwritten signature in black ink that reads "Alfred F. Tallia". The signature is fluid and cursive, with the first name "Alfred" and last name "Tallia" clearly legible.

Alfred F. Tallia, MD, MPH
NBME Chair



GAINING MOMENTUM

SPRINGBOARD FOR OUR MOMENTUM

In 2019, we listened, learned, and committed to accelerating improvements and innovation.

Medical education and patient care are rapidly changing, and we recognize that in order to meet the near-term and future needs of our customers, we need to evolve. Progress last year included strategies to make a beneficial impact on our community:

- ▶ We embraced collaboration with many health care community members and subject-matter experts.
- ▶ We actively evaluated input from students, residents, educators, physicians, patient advocates, and regulators, whose insight and honesty were invaluable.
- ▶ We aligned our organization to drive transformative initiatives for improved assessment design and delivery and product management.
- ▶ We enhanced and improved our infrastructure to make our assessments easier to take and deliver, and many more enhancements are in the works.

RELATIONSHIPS STRENGTHEN NBME MOBILITY

To deliver valid information about knowledge and skills, it takes the unique combination of experienced NBME staff working with representatives from a wide variety of organizations who share our commitment to assessment. Together, we aim to create meticulously crafted assessments that embody the following attributes:

- ▶ Relevant and continuously improved
- ▶ Diverse and specialized experience from the forefront of medical education and patient care
- ▶ Proven NBME processes, validation, and quality measures

The dedicated individuals' valuable contributions are highlighted in our [Membership listing and Committee Directory](#). They represent important voices across the health care spectrum. Through their stewardship within and commitment to their respective fields, they enhance the work we do in creating assessments.

These relationships are meaningful and productive from the moment interactions with collaborators and partners begin. These interactions facilitate the development of assessments grounded in evidence-based science of objective measurement of skills and knowledge. As a result, our assessments can support important decisions along the continuum of health professions education and practice.

MAKING ASSESSMENTS EASIER THROUGH REBUILT TECHNOLOGY

At NBME, technology is an essential component of the products and services we provide. It's the way our examinees engage with us, and the mechanism through which they register, prepare, and take our exams.

To develop enhanced, faster, and more user-friendly technology, NBME gathered feedback from individuals and organizations on areas for improvement. In 2019, we implemented several new systems that benefit our users by replacing outdated systems, growing online capabilities, and improving our processes to make them easier for the entire community to use. Examples include:

- ▶ Based on feedback from students and residents through focus groups and pilot trials, [MyNBME](#) went live in February 2019. *MyNBME* enables users to more easily register, purchase, launch, and view assessments and improves how exam feedback is accessed.
- ▶ To build upon technology enhancements, online improvements for 2020 include a *MyNBME Services Portal* for institutions.
- ▶ NBME upgraded its assessment media player, used for displaying multimedia exam content in web- and computer-based testing, to address security and compatibility issues.
- ▶ An innovative and advanced content management system called *Surpass* now enables subject-matter experts to securely submit their test items and associated content.

COLLABORATING FOR PROGRESS

In keeping with our founders' collaborative spirit, working with others is key to fulfilling our mission. Whether we are working alongside the [Federation of State Medical Boards](#) to support licensure assessment, or collaborating with the National Board for Health & Wellness Coaching to create the standard of competence for this profession, we value and incorporate the diverse experience and expertise of others with the common goal of advancing assessment.

NBME LOOKS BEYOND ITS WALLS TO ENABLE LEARNING

In 2019, NBME's engagement with stakeholders reflected the role we play for the community in a number of ways—from actively participating in conferences to increase awareness, customer relationships, and product education to hosting researchers' presentations in our Philadelphia office:

► In November 2019, NBME staff attended *Learn Serve Lead*, the [Association of American Medical Colleges' \(AAMC\) Annual Meeting](#) in Phoenix. Staff shared our best practices for test item materials and workshops, gathered information about needs and experiences,

and piloted program and product enhancements, such as the Customized Assessment Services. In addition, NBME's Peter Katsufakis, Michael Barone, and Aggie Butler provided an organizational overview. Michael Barone also presented an update about the scoring of USMLE Step 1.

- ▶ Over a dozen thought-leaders in medical education throughout North America and Europe gathered at NBME to explore how best to support a global culture of assessment. The **Global Medical Education Assessment Horizons** meeting fostered an information exchange about the current state of assessment. Participants brainstormed to identify potential opportunities to expand the horizons of assessment of health care professionals. The discussions from this meeting will help inform NBME's ideas for research, innovation, and strategic directions.
- ▶ Margaret M. Luciano, PhD, MBA, an expert in team dynamics, multi-team systems, and improving team effectiveness in health care, visited NBME in November to discuss her research in **Issues in Healthcare Systems**. This type of presentation enables NBME to remain connected to the larger issues that impact medical education and underpin the realities of health care every day.

OUR VITAL NATIONWIDE FACULTY OF MEDICINE

Our nationwide faculty of medicine comprises hundreds of subject matter experts. They are to be commended for their selfless dedication to measuring health care knowledge and skills. This unique body is vital to keeping NBME assessments robust and relevant. Those who participate on advisory panels, such as the USMLE Medical Student and Residency Advisory Panel or the State Board Advisory Panel to USMLE, provide the feedback needed to remain engaged, address issues, and make decisions on how best to serve customers, students, and practitioners.

The committee members who write and review our test items for our licensure, certification, and medical school subject examinations are dedicated to sharing their expertise and learning best practices in developing test items for NBME. Our test development staff work alongside test item writers to help implement item and case writing standards; thoughtfully edit for meaning and style; and tailor exam content to assess the appropriate competencies for the right audience.

Together, the committee members and staff amplify the quality of our exams, and our committee members leave NBME looking forward to their next educational collaboration with us. Moreover, the benefits of this unique editorial and educational collaboration for our faculty continue to grow with each passing year:

- ▶ Faculty can earn continuing medical education (CME) credit for their work.
- ▶ Members can access an extensive network of professionals within and outside of their fields; these relationships allow for academic or clinical opportunities that they might not otherwise find.
- ▶ By writing for and participating in an editorial cycle, the subject matter experts are fully immersed in an authentic peer-review process, analogous to serving as an editor of an academic journal or authoring a scholarly article for a publication.
- ▶ Committee collaborations can serve as catalysts for career advancement.

WEBINARS EXPAND AUDIENCE REACH

In 2019, NBME hosted several webinars to foster deeper interactions with medical school faculty and students. These webinars provided opportunities for faculty and students to learn about NBME products and services. They also provided a forum for our staff to engage in meaningful dialogue about our assessment services such as Customized Assessments, the Ambulatory Care Subject Examination, and comprehensive and subject examination score reports. NBME also hosted a live webinar on USMLE [score reporting](#) to foster a rich conversation about this important topic.

NEW HEALTH SYSTEMS SCIENCE EXAM BRIDGES THE GAP

In collaboration with the American Medical Association, the [Health Systems Science Examination](#) was made available to all medical schools. This high-quality, standardized assessment supports the implementation of health system science curricula and educational initiatives. Together with clinical and basic science instruction, this new assessment prepares medical students for effective clinical practice during residency and throughout their careers.

HEALTH AND WELLNESS COACHING FIELD SEES GROWTH

NBME has been collaborating with the National Board for Health & Wellness Coaching (NBHWC) since 2016 to create and administer a national board certification [assessment for health and wellness coaching](#). In 2019:

- ▶ NBHWC received a grant from the Centers for Disease Control and Prevention for a coaching program designed to help prevent or delay type 2 diabetes mellitus. The organization will partner with the American College of Preventative Medicine to develop group coaching competencies, a training program, and a certificate examination to advance this work.

The American Medical Association approved the use of new Category III Current Procedural Terminology (CPT®) Codes for health and wellness coaching beginning in January 2020. NBHWC and the US Department of Veterans Affairs (VA) applied for these new tracking codes to be based off NBHWC standards, and the VA plans to utilize them to evaluate the effectiveness of coaching within its health care system. As the VA uses the new codes to track services provided by coaches who are trained by the VA and certified by the NBHWC, both organizations hope to increase recognition of the value of health and wellness coaching in improving public health.



INVITATIONAL CONFERENCE ON USMLE SCORING (INCUS)

In early 2019, NBME co-sponsored the [Invitational Conference on USMLE Scoring \(InCUS\)](#) to collaboratively review the USMLE program's practice of numeric score reporting within the context of its primary use (initial medical licensure), and to discuss secondary uses of scores, such as residency selection.

The meeting was also co-sponsored by the American Medical Association, Association of American Medical Colleges, Educational Commission for Foreign Medical Graduates, and Federation of State Medical Boards.

In all, 65 attendees participated in a professionally facilitated two-day meeting in order to connect, advise, and inform each other. Prior to the meeting, additional input was gathered from more than 200 organizations to ensure that a complete range of perspectives was considered. Areas of consensus include:

- ▶ **The current medical school-to-residency transition is not meeting stakeholders' needs** because each stakeholder group has optimized its part of the system over time.
- ▶ **Unilateral changes to USMLE will not “fix” the entire system**, absent changes in other parts of the system.
- ▶ **Changes—both systemic and specific to USMLE—** must be explored, identified, and implemented on a reasonable timeline.

[Four preliminary recommendations](#) emerged from InCUS that begin to address the complex challenges of a flawed system of residency selection.

Stakeholders were invited to submit feedback about the preliminary recommendations through an open comment period. More than 20,000 responded to a survey that accompanied the four recommendations. [A summary of themes](#) that emerged from InCUS and public commentary was published on USMLE.org in fall 2019. These comments provided valuable input that has helped to inform our efforts as we continue this important conversation.

In 2020, the USMLE program announced three future policy changes:

- ▶ Changing Step 1 score reporting from a three-digit numeric score to reporting only pass/fail;
- ▶ Reducing the allowable number of exam attempts on each Step or Step Component from six to four; and
- ▶ Requiring all examinees to successfully pass Step 1 as a prerequisite for taking Step 2 Clinical Skills.

Learn more about the policy changes on [USMLE.org](#).

REIMAGINING ASSESSMENT PRACTICES

When Amy Morales, Director of Test Materials Development at NBME, attended a meeting of the Committee on Clerkship Directors of the Association for Surgical Education (ASE) in April 2017, she learned a hard truth: the committee was unhappy with the [Surgery subject examination](#). Its content did not align with the core curriculum for surgery.

This could have hurt the relationship between NBME and the clerkship directors, but instead, it strengthened it. Listening to the clerkship directors' concerns sparked the reimagining of how to better align the Surgery subject exam with the curriculum. NBME realized that the exam questions needed to be curated more closely by the surgeons who best understood the subject matter, and who could ensure that the exam content aligned with the core curriculum.

From that original conference, Marc de Moya, MD, Chief of Trauma/Acute Care Surgery at the Medical College of Wisconsin/Froedtert Hospital, invited Amy to attend the American

College of Surgeons (ACS)/ASE Medical Student Core Curriculum Steering Committee. In that meeting, Amy was introduced to the individuals responsible for developing the national surgery curriculum and learned more about the core topics.

The next improvement in the collaboration was for NBME's Test Development staff to host an item-writing workshop and item review session in Philadelphia. There, Carly Daniels and Miranda Gipe sat down with 13 surgery clerkship directors to teach them best practices for writing multiple-choice questions. Afterward, the surgeons wrote new Surgery subject exam content and vetted existing content. Typically, new subject exam content is reviewed remotely by clerkship directors, so this was a different approach. Many of the writers noted that it was helpful to be in the room with one another because the conversations that took place provided new perspectives, and at times, resulted in making decisions they would not have made had they reviewed the content alone.



It has been a fantastic collaboration. NBME's openness to improving the Surgery subject exam has been impressive. Working with NBME has been a personal pleasure. I've learned a great deal.

Jesse Moore, MD

"When you have a group of people in a room, that collective voice is helpful," Amy said. "Additionally, it creates an environment that enables editorial staff to interact with subject matter experts and ask questions. There is learning on both sides."

This collaboration has now evolved into an NBME task force that writes and reviews new exam content. Jesse Moore, MD, an Associate Professor of Surgery at the Larner College of Medicine at the University of Vermont, chairs the group. He underscored the richness of this collaboration.

"It has been a fantastic collaboration. NBME's openness to improving the Surgery subject exam has been impressive," he said. "Working with NBME has been a personal pleasure. I've learned a great deal."

And for NBME, the feeling is mutual.

"There's no way that we could create a quality product if we didn't have the subject matter experts work together with us," Amy said. "Collaboration is not just an enhancement of what we do, it's essential to what we do."

We take pride in collaborating with medical education professionals whose values echo our own. Their experience and expert viewpoints respectfully challenge, and ultimately deepen, our commitment to innovating and improving our offerings.



IMPROVING ASSESSMENT

IMPROVING ASSESSMENT THROUGH RESEARCH AND DEVELOPMENT

To keep pace with rapid changes both in medical education and in the delivery of patient care, NBME innovates to create new products and enhance existing ones. In doing so, we better meet the needs of our customers.

In 2019, collaborations with University of Wolverhampton and the University of Pennsylvania enabled NBME's Center for Advanced Assessment to develop capabilities based on Natural Language Processing (NLP). These capabilities have led to improved assessment practices:

- ▶ **Computer-assisted scoring** of the patient note for USMLE Step 2 Clinical Skills Examination combines judgments from licensed, board-certified physician raters with NLP-based computer-generated scores. Use of NLP enables NBME to apply the best available

technology to ensure accuracy and validity for all our examination programs.

- ▶ **Automatic generation of multiple-choice question distractors**—incorrect yet plausible alternatives to the correct answer—can facilitate the test-item writing process. NLP enables review of existing test content and the generating of a list of distractors that can be used by item writers. This technology will increase the efficiency and quality of the item writing process.
- ▶ **Identifying items that should not be placed on the same test form** because of an overlap in content can be achieved using NLP-based procedures. This will allow for savings in test development time and will result in improving the quality and fairness of our assessments.

In 2019, Psychometrics and Data Analysis (PADA) worked to enhance assessment-related products and services, inform best practices, and promote evidence-based decisions about students and health care professionals:

- ▶ A new method of computing and reporting subscores resulted in the [design of new score reports](#) for USMLE, subject examinations, and self-assessments. The new reports were extensively evaluated prior to their adoption; evaluation included input from multiple stakeholders across medical education. These reports enable examinees to appropriately interpret their strengths, address more challenging areas, and function as overall guides for remedial study.
- ▶ NBME researchers have led, independently or together with collaborating organizations, a number of studies around fairness and equity in assessment:
 - Use of expert review to identify potential bias in test questions;
 - A study in collaboration with a number of medical schools to understand the potential effects of delaying the taking of Step 1 to after clinical clerkship.
- ▶ NBME has continued to support medical specialty boards by assessing the degree that performance on USMLE and in-training examinations predicts success on respective board certification examinations.
 - In collaboration with the American Board of Internal Medicine, NBME has evaluated these relationships. Findings have overwhelmingly shown that in-training examination scores serve as a useful indicator of future board certification success and can help program directors identify at-risk trainees.



SUPPORTING THE COMMUNITY

Health care educators receive support from NBME through several avenues. First, the Strategic Educator Enhancement Fund serves the next generation of medical educators through professional development and a newly introduced fellowship program. Grants bestowed through the Edward J. Stemmler Medical Education Research Fund and the Latin America Grants Program contribute to excellence in medical education assessment research and faculty development. Item writing workshops facilitate knowledge sharing to help educators enhance the quality of their own assessments.

STRATEGIC EDUCATOR ENHANCEMENT FUND (SEEF)

Two opportunities for medical educators available through this fund are the NBME Invitational Conference for Educators (NICE) and the SEEF Medical Education Research Fellowship.

- ▶ The NBME Invitational Conference for Educators fosters skill development in assessment and provides a venue for networking for medical school faculty. The second of these conferences was held in Indianapolis, Indiana, on May 15-16, 2019, with 240 faculty participating from 135 US allopathic and osteopathic medical schools. With help from current and past NBME test committee members, NBME staff presented interactive workshops on written and performance assessments.
- ▶ The Medical Education Research Fellowship was introduced for the first time in 2019 and is a project-based faculty development program. It was established to support a cohort of individuals who will work with a senior mentor and NBME staff to identify and develop questions, and a research project. The fellowship provides an opportunity for medical school faculty interested in developing skills in medical education and assessment research and who have a commitment to working with a team of interested colleagues. Eight individuals have been selected to form the inaugural cohort.

EDWARD J. STEMMLER MEDICAL EDUCATION RESEARCH FUND

2020 marks the 25th year of the [Stemmler Fund](#), and plans are in place to acknowledge and celebrate the contributions by grant recipients since its inception in 1995. The fund promotes advancements in the theory, knowledge, or practice of assessment at any point along the continuum of medical education.

In 2019, NBME awarded a total of \$449,000 to these research projects:

- ▶ *Assessing Residents' Clinical Performance Using Resident-Sensitive Quality Measures* – Daniel Schumacher, MD; University of Cincinnati College of Medicine
- ▶ *Using NLP to Unleash the Potential of Narrative Data to Assess a Student's Readiness to Progress in a Competency-Based Curriculum* – Celia Laird O'Brien, PhD; Northwestern University Feinberg School of Medicine
- ▶ *Standardized Patient Assessment of Communication Skills: A Standardized Examinee Audit Study of Gendered and Racial Differences* – Laura Hirshfield, PhD; University of Illinois at Chicago College of Medicine

LATIN AMERICA GRANTS

The Latin America Grants program continues to support three consortia that were selected as part of the 2018-2020 grant cycle and are making great progress in these projects:

- ▶ *Teacher Development for Programmatic Evaluation of Students in Health Degree Courses in Brazil* submitted by a consortium of six Brazilian medical schools
- ▶ *MOOC Design for Training Teachers in Educational Assessment in Health Sciences* submitted by a consortium of three medical schools in Mexico
- ▶ *Assessment of Abilities and Skills by Direct Observation in Medical Internship* submitted by two medical schools in Brazil

The recipients of the 2020-2022 grant cycle will be announced on April 1, 2020. All grants serve to improve assessment tools through funding and counsel from NBME.

ITEM WRITING WORKSHOPS

To enhance the quality of assessments, NBME facilitated approximately 30 in-person and virtual workshops in 2019 for medical school faculty and others, including Meharry Medical College, Carle Illinois College of Medicine, Marshall University, and University of Texas at Tyler. The workshops are designed for those who would like to increase their knowledge and skills, and to learn to utilize tools to improve their own assessments. Professional development benefits include:

- ▶ Techniques to improve the quality of test items in assessments across health professions education
- ▶ Checklists, templates, and a copy of [NBME's Constructing Written Questions for the Basic and Clinical Sciences](#), 4th edition, to support writing test items.
- ▶ Networking with colleagues who are also learning about and developing assessments

TALENT AND RECOGNITION

NBME WELCOMES KEN RIDGLEY AS VICE PRESIDENT OF TEST DEVELOPMENT SERVICES



In February 2019, NBME welcomed Ken Ridgley as its new Vice President of Test Development. A champion of innovative assessment practices and organizational development, Ken cultivated his expertise in assessment at Prometric within a decade-long tenure as the Vice President of Test

Development, and as the leader of its Global Test Center Support organization. Ken's commitment to NBME's mission and his knowledge of progressive content management technologies enrich NBME's values and vision for excellence in assessment.

Ken earned a BA in psychology from the University of Maryland, Baltimore County, and an MS in industrial/organizational psychology from the University of Baltimore.

MEDICAL ADVISORS IN THE COMMUNITY

NBME medical advisors are immersed in the same settings as our customers and students—they practice and teach clinical medicine and contribute scholarship to respected, peer-reviewed journals and educational venues.

Through their multifaceted relationships, our medical advisors connect NBME with the community. They remain engaged in medical education's ever-changing, complex conversations. In doing so, NBME can continuously align assessments with the realities that customers encounter.

In 2019, Miguel Paniagua, MD, and Thomas Rebbecchi, MD, presented at several venues to connect with the communities we educate and learn from:

- ▶ “Evidence-Based Assessment: Envisioning the Future” - University of South Carolina School of Medicine, Greenville Department of Emergency Medicine Grand Rounds



Miguel Paniagua, MD



Thomas Rebbecca, MD

- ▶ “Re-envisioning Exams: NBME’s Effort on Wellness (RENEW) Project,” *Short Communications* - Student Wellbeing, Association for Medical Education in Europe (AMEE) Conference, Vienna, Austria
- ▶ “Analytical Approaches for Improving the Quality of Observational Workplace-based Assessments,” International Association of Medical Regulatory Authorities (IAMRA) Symposium: Continued Competency: Balancing Assurance and Improvement, Chicago, IL
- ▶ “How Do they Know What I Know? ‘Steps’ to becoming a Competent Physician” - University of South Carolina
- ▶ USMLE/NBME Update - Temple University School of Medicine Faculty Retreat, Philadelphia, PA
- ▶ Overview of NBME Offerings at the Council on Medical Student Education in Pediatrics (COMSEP) Annual Meeting, St. Petersburg, FL
- ▶ USMLE/NBME Update at the Association of Program Directors in Internal Medicine (APDIM) fall meeting, Denver, CO
- ▶ History of Assessment at the NBME - American Board of Medical Specialties (ABMS) Visiting Scholars Program, Webinar, November 2019

2019 JOHN P. HUBBARD AWARD



The 2019 John P. [Hubbard Award](#) for excellence in the field of evaluation in medicine was awarded to William C. McGaghie, PhD, Professor of Medical

Education and Preventative Medicine at Northwestern University Feinberg School of Medicine in Chicago, Illinois.

“Dr. McGaghie has made significant and sustained contributions to the assessment of professional competence in medicine and the development of medical education programs for more than four decades. His focus on patient safety and clinical outcomes has fostered improvements in the health of the public through effective education methods and assessment,” said Peter G. Anderson, DVM, PhD, 2019 Hubbard Award Committee Chair.

DISTINGUISHED SERVICE AWARD RECIPIENTS

At the 2019 NBME Annual Meeting, five individuals received the Edithe J. Levit Distinguished Service Award for their many years of service, which are highlighted here.



Paul R. G. Cunningham, MD



From His Citation

“Dr. Paul Cunningham’s NBME volunteer service history began in 1998, when he served on a Step 3 Clinical Case Scenario Development Committee. Since that time, he has served as an at-large member of the NBME and at-large member of the Executive Board. He has chaired the Advisory Committee on Medical School Programs, was a member of the Presidential Search Committee, and most recently served on this year’s Nominating Committee. Over the years, Paul has provided the Executive Board with wise and unique counsel. And, though we know we can always count on him for advice, we will miss him at our Executive Board meetings.”

N. Lynn Eckhart, MD, MPH, DRPH



From Her Citation

“Lynn Eckhart’s service history with NBME began in 2002, when she served on the USMLE Composite Committee. Since that time, Lynn has served two terms as an at-large member of the NBME. She has served on several international oversight committees, the Strategic Futures Committee, and the governing committee for NBME’s collaboration for veterinary assessments. Lynn has gone the extra mile for NBME on several occasions and her friendship and support have been greatly appreciated over the years.”

Janelle A. Rhyne, MD, MA



From Her Citation

“NBME’s official records for Jan Rhyne date back to 2009, when she served on the Step 3 Committee. It is likely she came to our attention through her many years of service to the FSMB and its collaboration with NBME on USMLE. Jan personifies the strong ties between the FSMB and the NBME; this can be seen in the separate yet overlapping work she has done as a volunteer to both organizations. Jan has been an at-large member of the Executive Board since 2013 and has served on more than a few committees during her time on the Executive Board. In addition to all she does at her home base in North Carolina and with NBME and FSMB, Jan has spent significant time in a remote area in Arizona working for the Indian Health Service. Jan truly personifies the spirit of volunteerism.”

Nuno J. Sousa, MD, PhD



From His Citation

“Nuno Sousa’s service history with NBME began in 2010, when he served on the International Foundations of Medicine Oversight Committee. In 2011, he was elected as an at-large member of the NBME, and he was elected to the Executive Board in 2015. Nuno has served on NBME’s International Programs committees and chaired several of them. Nuno’s experience and insights have been instrumental in NBME’s growing understanding of the global medicine landscape. Nuno’s home base is in Porto, Portugal and I’d be remiss in not thanking him for putting in all those air miles to participate in Executive Board and other NBME meetings.”

Judith Westman, MD



From Her Citation

“Judith Westman has been a test committee representative in the NBME membership for nine years, the maximum number permitted by the bylaws. She began her NBME service in 2006 on a standard-setting panel. Since then, she has served on 12 committees and task forces, including the Step 1 Committee, USMLE Management Committee, the USMLE Budget Committee and the USMLE Committee for Individualized Review. While Judith has served the maximum number of years as a test committee representative, we hope we can call on her again for other roles in the future.”

ELECTIONS

At its 2019 Annual Meeting, NBME membership elected Executive Board members, officers, and at-large members. Except for the president and immediate past chair, the members of the Executive Board are elected for two-year terms.

Executive Board

Officers

Alfred F. Tallia, MD, MPH – 1st term as chair
Paul M. Wallach, MD – 2nd term as vice chair
Latha Chandran, MD, MPH – 1st term as treasurer

At-large members, 2nd term:

Donna D. Elliott, MD, EdD
Reena Karani, MD, MHPE
Pat Mastors

At-large members, 1st term:

Marie Foley, PhD, RN
David Milling, MD
Karen M. Sanders, MD
Kamili Wilson

Ex officio:

Suzanne T. Anderson – immediate past chair
Peter J. Katsufakis, MD, MBA–President

Members-at-Large

Second terms:

Karen W. Feinstein, PhD
Kate Fick
Cristina M. Gonzalez, MD
O'Rese J. Knight, MD
Enrique Mendoza, MD
Jeffery L. Susman, MD
Danny M. Takanishi, Jr., MD

First terms:

Eliana Amaral, MD, PhD
Peter S. Amenta, MD, PhD
Susan M. Cox, MD
Chanita Hughes-Halbert, PhD
Regina Stokes Offodile, MD, MHPE
José Miguel Pêgo, MD, PhD
Dusadee Sarangarm, MD
Kyla Terhune, MD, MBA
Jon V. Thomas, MD, MBA

NEW HONORARY MEMBER

At the 2019 Annual Meeting, Lewis First, MD, MS, was elected as a chair emeritus and honorary NBME member for life. For more than 20 years, Dr. First, Professor and Chairman of Pediatrics at the University of Vermont Larner College of Medicine and Chief of Pediatrics, Vermont Children's Hospital at Fletcher Allen Health Care, has dedicated his time, knowledge, and passion to working with NBME. He has served on nearly 30 committees and has held various



leadership roles, including NBME treasurer and chair of various NBME and USMLE committees. He was elected as the chair of NBME in 2011 and served for two full terms.

"I began to recognize, in the people at NBME, the care and concern they had for medical students. Particularly, at the time that USMLE was coming into its own... and the work that went into every individual question and every overall assessment, blew my mind," said Dr. First at the 2019 annual meeting.

NBME has been honored to work with someone as passionate as Dr. First and looks forward to continued collaboration with him.

HONORS, AWARDS, AND ACCOMPLISHMENTS FOR NBME STAFF

Brian Clauser, Vice President of the Center for Advanced Assessment, acted as editor for the *National Council on Measurement in Education Applications of Educational Measurement and Assessment* book series.

Monica Cuddy, Measurement Scientist, was appointed as the 2020 Program Chair for the American Educational Research Association (AERA) Division I: Education in the Professions.

Lale Khorramdel, Senior Measurement Scientist, acted as an associate editor for a special issue on "Advances in Modeling Response Styles and Related Phenomena" in the *British Journal of Mathematical and Statistical Psychology*.

Matthias von Davier, Distinguished Research Scientist, was appointed as Executive Editor of the journal *Psychometrika*, one of the most prestigious journals in psychometrics.

Victoria Yaneva, Data Scientist, and **Peter Baldwin**, Senior Measurement Scientist, received the Ambassador Paper award at the *NLP for Building Educational Applications* workshop for their paper on "Predicting the Difficulty of Multiple Choice Questions in a High-stakes Medical Exam."



PROGRAM HIGHLIGHTS

HEALTH PROFESSIONS ORGANIZATIONS

NBME works with organizations that address major medical issues of our time. Together, we develop and administer assessments that support education, training, and credentialing that lead to competent practitioners at the forefront of important medical advances.

- ▶ Our work developing and administering In-Training Examinations (ITEs) serves medical residents, fellows, and anesthesiology assistants. The multiple-choice test questions, which cover a broad range of clinical practice, often incorporate multimedia to display state-of-the-art diagnostic imaging in order to accurately assess knowledge and skills. ITEs, which provide individualized feedback to examinees, are administered through US-based and international programs. The results help training program examinees identify areas for improvement in preparation for certifying exams and help training programs evaluate the impact of their curricula.
- ▶ Through our work with numerous credentialing boards for medical and other health professions, NBME develops, delivers, and scores over 30 certifying examinations. For example, in 2019, NBME collaborated with the American Board of Physical Therapy Specialties to administer an oncology exam, a new area of specialization.
- ▶ In the beginning of 2020, NBME announced that it will transition away from domestic, high-stakes, point-in-time certification exams to sharpen its focus on current and evolving needs for in-training-focused assessments, as well as to explore new methods of assessment for health care professionals. This determination was based on a thoughtful community needs analysis completed in 2019 in the context of evolving organizational strategy. NBME teams are working closely with affected programs to plan for a smooth transition over the next few years.

THE INTERNATIONAL FOUNDATIONS OF MEDICINE (IFOM)

The [IFOM program](#) serves international medical schools and agencies that need standardized, high-quality, and accessible tools to help them assess examinees' knowledge and benchmark their performance against an international comparison group.

- ▶ In 2019, 31 medical schools worldwide used IFOM for purposes ranging from benchmarking through medical school exit exams. In addition, national testing agencies in both Kazakhstan and Ukraine administered IFOM for benchmarking, and Costa Rica, Oman, and Panama used the program for intern or residency selection purposes.

SUBJECT EXAMS

NBME's [subject examinations](#) assist educators in measuring students' understanding of critical medical knowledge in foundational and clinical sciences as well as to identify areas for improvement.

Used in assessment throughout medical school curricula, NBME Subject Examinations saw modest growth in 2019 with the total number of exams administered domestically and internationally exceeding 277,000. Over 33,000 of these examinations were administered at Prometric testing centers.

- ▶ The Ambulatory Care Subject Exam replaced the Adult Ambulatory Medicine examination. The Clerkship Directors for Internal Medicine (CDIM) Task Force selected all test items, ensuring the exam is guided by the CDIM curriculum. Equated percent scores are now reported, aligning with score reporting for the other clinical science subject exams.
- ▶ Grading guideline studies were conducted and results published for the Emergency Medicine Advanced Clinical Examination and the Obstetrics and Gynecology Clinical Science subject exam. NBME provides participating schools with guidelines to analyze performance and assist clerkship directors in determining passing and honors grades for their students.

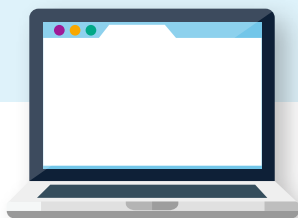


FACULTY ASSESSMENT TOOLS TAILORED TO SPECIFIC CURRICULA

The [Customized Assessment Services](#) program allows faculty to build high-quality, standardized assessments targeted to local curricula using secure NBME item banks.

To enable medical educators to build better exams that reflect today's classroom demands and integrated curricula, NBME introduced the redesigned Customized Assessment Services system in July 2019.

In 2019, 128 medical schools subscribed to Customized Assessment Services, including 21 international schools.



Approximately 2,000 examinations were created and administered to more than 140,000 examinees in 2019 using the system.



Key features include:

- ▶ User-friendly interface enables easy navigation of the entire exam-build
- ▶ Keyword search function to help users find test questions faster
- ▶ New clinical science content along with basic science content allows for exam building that integrates both content areas

NBME SELF-ASSESSMENT SERVICES (NSAS)

In 2019, several new Comprehensive Basic Science Self-Assessment (CBSSA) forms were released to help examinees correctly identify their strengths and address more challenging areas. The improved targeted forms are better predictors of Step 1 scores than scores from the previous forms.

NBME continues to improve the examinee experience for the [NBME Self-Assessments](#). In 2019, we listened to examinee feedback through focus groups and end-of-assessment surveys and redesigned our score reports for the CBSSA and Comprehensive Clinical Science Self-Assessments to embody a more modern feel as well as include more meaningful performance feedback.

UNITED STATES MEDICAL LICENSING EXAMINATION® (USMLE®)

The USMLE program takes pride in delivering the best possible assessment of expected physician competencies for contemporary medical practice. Through the work of thoughtful collaboration and implemented process improvements, the USMLE program continually strives to meet the needs of its stakeholders, which include examinees, state medical boards, and undergraduate and graduate medical educators.

Student/Resident Advisory Panel

The Medical Student and Resident Advisory Panel, which includes US and international medical students and residents, met twice in 2019. Staff have convened this group to:

- ▶ collect feedback from medical students and residents on issues and topics specific to the USMLE (e.g., ongoing and/or planned enhancements and operational elements);
- ▶ test assumptions about the USMLE with an examinee audience; and
- ▶ gain insight into the perspective of examinees on USMLE policy issues.

Topics the panel has been asked to address or weigh in on include:

- ▶ USMLE scoring policies;
- ▶ medical student stress and burnout; and
- ▶ Step 2 Clinical Skills (CS) examinee score report redesign.

State Board Advisory Panel

The State Board Advisory Panel, composed of staff and members from US state licensing authorities, met once in 2019. The panel convenes to provide feedback on current and potential USMLE issues and policies that may impact state medical boards.

In 2019, this group discussed:

- ▶ the *Annual Report on USMLE to Medical Licensing Authorities in the US*;
- ▶ the Invitational Conference on USMLE Scoring and USMLE score reporting;
- ▶ content coverage on USMLE exams; and
- ▶ changes to the Special Purpose Examination (SPEX®).

Standard Setting – Step 3

For each Step examination, a pass or fail result is provided. Passing results are based on achievement of specified levels of proficiency established prior to administration of examinations. Statistical procedures are employed by NBME psychometric experts to ensure that for each Step, the level of competence required to pass remains uniform across test forms of the examination.

To learn about USMLE performance data, visit <https://www.usmle.org/performance-data>

The USMLE Management Committee is asked to complete an in-depth review of standards for each examination every three to four years. The Management Committee conducted a review of standards for the Step 3 examination in 2019, considering information from multiple sources:

- ▶ Recommendations from independent groups of physicians from medical schools and state medical boards who participated in content-based standard-setting activities in 2019;
- ▶ Results of surveys of various groups (e.g., state licensing representatives, medical school faculty, examinees) concerning the appropriateness of current passing requirements for the Step 3 examination;
- ▶ Data on trends in examinee performance; and
- ▶ Data on precision of pass/fail classifications.

Following data review and discussion, the USMLE Management Committee raised the recommended Step 3 minimum passing score from 196 to 198. This decision took effect on Jan. 1, 2020.

Examinee Score Reports

Work on the redesign of USMLE score reports continued in 2019. A primary goal of the redesign is to provide as much meaningful and useful information as possible to examinees, as long as security of the program can be maintained, and the primary use of results (licensure) is not negatively impacted.

Step 3 examinees saw the redesigned score report in 2018, and Step 1 and Step 2 Clinical Knowledge (CK) examinees began receiving new reports in early 2019. A redesigned version of the Step 2 Clinical Skills (CS) examinee score report will launch in the first half of 2020.

POST-LICENSURE ASSESSMENT SYSTEM

The Post-Licensure Assessment System (PLAS) assists medical licensing authorities in assessing the competency of previously licensed physicians who have fallen out of practice for personal or disciplinary reasons. It is a joint activity of NBME and the Federation of State Medical Boards (FSMB). PLAS includes Special Purpose Examination (SPEX), which was administered to 96 examinees in the United States in 2019.

- ▶ In 2019, the new SPEX examination was released; it is shorter in length by 2 ½ hours, and the content primarily focuses on tasks that physicians perform in practice (i.e., competencies for practice) and less on disease mechanisms.

South Africa Pilots Assessment for Physician Licensure

- ▶ The Health Professions Council of South Africa (HPCSA) asked NBME and FSMB to help them deliver

a high-quality written exam that can be used as a standardized assessment for international graduates who wish to practice medicine in South Africa. In April 2019, the NBME and FSMB signed an agreement with HPCSA representatives.

HPCSA selected the SPEX examination for this pilot, and the examination was administered to 221 candidates in August 2019 at a Prometric center in South Africa.

Assessment Center Activities

- ▶ The PLAS program continues to provide a toolbox of assessment services to third-party collaborators at eight different locations.
- ▶ In 2019, 108 physicians received assessments through the assessment center network collaborator sites.

THE NORTH AMERICAN VETERINARY LICENSING EXAMINATION (NAVLE)

The NAVLE, cosponsored and co-owned by the ICVA (International Council for Veterinary Assessment) and NBME, is a requirement for licensure to practice veterinary medicine in all licensing jurisdictions in North America. The NAVLE is overseen by the Collaboration for Veterinary Assessments (CVA) Governance Committee, comprising members appointed by the ICVA and NBME.

The following summary includes examinee performance data and highlights of significant collaboration activities in 2019.

NAVLE Administration and Minimum Passing Scores

	2016-2017 Academic Year		2017-2018 Academic Year		2018-2019 Academic Year	
	# Tested	% Passing	# Tested	% Passing	# Tested	% Passing
¹ Criterion Group	4,072	88.4%	4,242	89.1%	4,390	88.4%
² Non-Criterion Group	931	65.5%	988	65.4%	1,067	62.7%
³ Non-Accredited Group	584	44.3%	602	40.9%	716	46.5%
Total	5,587	80.0%	5,832	80.1%	6,173	79.1%

¹Criterion group: senior students of accredited veterinary schools who took the NAVLE for the first time under standard testing conditions.

²Non-criterion group: senior students of accredited veterinary schools who had previously taken the NAVLE or took the NAVLE with test accommodations or graduate veterinarians from accredited schools.

³Non-accredited group: graduates or senior students of foreign veterinary schools that are not accredited by the American Veterinary Medical Association's Council on Education.

NBME collaborates with a variety of organizations to provide high-quality assessments. Committee members with extensive clinical expertise work together with NBME staff to develop assessments covering important concepts concerning today's health care environment.

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