



**NBOME**  
NATIONAL BOARD OF OSTEOPATHIC MEDICAL EXAMINERS

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## ENHANCING COMPLEX-USA

REPORT BY THE **BLUE RIBBON PANEL**  
OF THE NATIONAL BOARD OF OSTEOPATHIC  
MEDICAL EXAMINERS

INCLUDING RECOMMENDATIONS AND NEXT STEPS



**NBOME'S MISSION** ▶ TO PROTECT THE PUBLIC BY PROVIDING  
THE MEANS TO ASSESS COMPETENCIES FOR OSTEOPATHIC MEDICINE  
AND RELATED HEALTH CARE PROFESSIONS

## BACKGROUND

The Comprehensive Osteopathic Medical Licensure Examination of the United States (COMLEX-USA), the NBOME's signature examination series, is widely used for licensure of osteopathic physicians in the United States. It is the primary means by which the NBOME delivers on its mission "to protect the public by providing the means to assess competencies for osteopathic medicine and related health care professions."

In response to substantive changes in the evolution of osteopathic medical practice, and to ensure COMLEX-USA remains current in meeting the needs of the state medical licensing boards and other constituents, the NBOME commissioned a comprehensive review of the examination series in 2007. The need for a comprehensive review originated with discussions about continuous quality improvement during the 2006 NBOME Board retreat. The review (and subsequent recommendations for changes to COMLEX-USA) was driven by the need to:

- ▶ Stay meaningful and relevant in the licensing process,
- ▶ Elevate the breadth and quality of assessment to meet the expectations of the profession and the public – reliability and validity remain paramount, and
- ▶ Ensure continuous quality improvement in protecting the public.

The COMLEX-USA review included extensive input from the many stakeholders, including state medical board representatives, representatives from colleges of osteopathic medicine and graduate medical education programs, physicians in private practice, students, residents, and other content and testing experts. Numerous NBOME committees, subcommittees and task forces met to evaluate the content, format and consequences of the COMLEX-USA series, and to devise a plan for assuring that it will continue to elevate the breadth and quality of assessment to meet the expectations of the profession and the public.

The NBOME's Blueprint Audit Committee and its Committee on Competency Assessment were critical to the review process. The latter Committee published "The Seven Osteopathic Medical Competencies: Considerations for Future Testing and the Practice of Osteopathic Medicine" in 2007. An updated version, "The Fundamental Osteopathic Medical Competencies: Guidelines for Osteopathic Medical Licensure and the Practice of Osteopathic Medicine," was published in 2009. In 2011, the NBOME Board of Directors adopted the "Fundamental Osteopathic Medical Competency Domains: Guidelines for Osteopathic Medical Licensure and the Practice of Osteopathic Medicine" (FOMCD), an update to the 2009 document. The FOMCD considers these domains predominantly from the assessment perspective, particularly as related to licensure for osteopathic medical practice. ([Fundamental Osteopathic Medical Competency Domains](#)).

The 2011 update was authored by the NBOME's Blue Ribbon Panel on Enhancing COMLEX-USA (see next section), with contributions from a wide array of experts on the required elements and measurable outcomes for the seven core competency domains, as related to the practice of osteopathic medicine.

## BLUE RIBBON PANEL ON ENHANCING COMLEX-USA

The NBOME Board recognized that additional research would be necessary to implement changes to the COMLEX-USA examination series. In June 2009, Board members agreed to move forward with plans to further study and implement a future design for COMLEX-USA. The Blue Ribbon Panel on Enhancing COMLEX-USA (Blue Ribbon Panel) was assembled to establish a framework based on the stated criteria and current directions in assessment standards in medical education and practice.

The Blue Ribbon Panel was charged with researching, considering and outlining a plan to implement a two-decision point, competency-based COMLEX-USA that is consistent with the NBOME's mission. Additionally, the Blue Ribbon Panel was asked to consider the primary purpose of COMLEX-USA, as well as important secondary uses of the examinations.

A future COMLEX-USA licensure examination series would be based on a framework that would:

- › Adopt a general competencies schema – osteopathic principles and practices integrated throughout all assessment tools and each of the seven core competencies
- › Further integrate application of biomedical sciences in all assessments
- › Use best evidence and appropriate information resources to address clinical presentations
- › Expand assessment of clinical skills
- › Address any resulting voids for secondary users through development of additional osteopathic assessment tools

The NBOME's mission to protect the public, and the validity and reliability of NBOME's assessments would remain paramount.

It was important that the Blue Ribbon Panel's work consider both the primary (licensure) and important secondary (undergraduate and graduate medical education) uses of the COMLEX-USA licensure examination series. Therefore, the Blue Ribbon Panel was chosen to be representative of the licensure community and the osteopathic medical profession. In addition to members of the NBOME Board of Directors, the Blue Ribbon Panel includes members from the following organizations:

- › Federation of State Medical Boards (FSMB)
- › American Osteopathic Association (AOA)
- › American Association of Osteopathic Examiners (AAOE)
- › Organization of Program Directors Association (OPDA)
- › Association of Osteopathic Directors and Medical Educators (AODME)
- › American Association of Colleges of Osteopathic Medicine (AACOM)
- › Education Council on Osteopathic Principles (ECOP)
- › Educational Commission for Foreign Medical Graduates (ECFMG)
- › National Board of Osteopathic Medical Examiners (NBOME)

In addition to the esteemed membership of the NBOME's Blue Ribbon Panel on Enhancing COMLEX-USA, the committee called upon highly renowned experts in the field of medical education and clinical assessment as part of the comprehensive review of the examination series and exploration of

enhancements in its redesign. The committee conducted a comprehensive literature review, which included the following seminal works:

- › *The CanMEDS 2005 Physician Competency Framework*
- › *Guide to Good Medical Practice – USA March 2009, Developed by the National Alliance for Physician Competence*
- › *The Seven Osteopathic Medical Competencies: Considerations for Future Testing and the Practice of Osteopathic Medicine (2007), by the NBOME*
- › *Fundamental Osteopathic Medical Competencies: Guidelines for Osteopathic Medical Licensure and the Practice of Osteopathic Medicine (2009), by the NBOME*

Some selected works reviewed by the Blue Ribbon Panel are included at the end of this document.

The NBOME initiated a series of practice analyses activities in 2011, including the following:

- › Clinical skills assessment of procedural and advanced communication skills: Performance expectations of osteopathic students, residents and residency program directors
- › Clinical Procedural Skills Survey of clinical preceptors and 3<sup>rd</sup> and 4<sup>th</sup> year undergraduate osteopathic medical students
- › Data analysis and comparison of ambulatory care visits of DOs and MDs from the 1999 and 2008 National Ambulatory Medical Care Surveys

Preliminary results confirm prior research regarding the distinctive nature of osteopathic medical practice and provide further information that will assist the NBOME in additional enhancements of COMLEX-USA. The NBOME plans further analyses to refine the results; the outcomes are expected to be reported and studied by the Blue Ribbon Panel by the end of 2012. By June 2011, the NBOME's Blue Ribbon Panel on enhancing COMLEX-USA reached consensus on the following key considerations:

- › A new COMLEX-USA would have two decision points:
  1. Entering supervised practice (residency) and
  2. Entering independent practice.
- › All seven competency domains would likely be assessed across each decision point.
- › Cognitive examinations will continue to provide numeric scores (in addition to pass/fail decision).
- › Assessment for licensure might also include a portfolio component.  
(This is potentially more relevant for Decision Point 2.)
- › Expected implementation is in the 2015-2020 timeframe.
- › Minor enhancements to COMLEX-USA will be evaluated and added in the interim.
- › An enhanced COMLEX-USA licensure examination will reflect an *evolutionary*, not *revolutionary* process.
- › An adaptation of the current COMLEX-USA examination blueprint and outline will consider competency domains.

In late 2011, the Blue Ribbon Panel on Enhancing COMLEX-USA issued a series of 10 key recommendations, outlined on the next page.

## RECOMMENDATIONS

### RECOMMENDATION #1

The NBOME will adopt a two-decision point model for the COMLEX-USA examination whereby:

- › A series of assessments will lead to a decision for entry into supervised practice, i.e., in residency/GME training (Decision Point 1).
- › A series of assessments will lead to a decision for entry into unsupervised practice, i.e., unrestricted licensure (Decision Point 2).

Implementation will begin with assessments for Decision Point 2.

### RECOMMENDATION #2

All osteopathic competency domains will be assessed at each of the two decision points.

### RECOMMENDATION #3

At a minimum, cognitive (predominantly multiple choice question-based) and clinical skills examinations will continue to comprise the COMLEX-USA examination at Decision Point 1; cognitive examinations will comprise assessments used at Decision Point 2.

### RECOMMENDATION #4

The NBOME will adopt a new COMLEX-USA examination blueprint, to include the following dimensions:

- › Patient Presentations (Replaces current Dimension 1 – Clinical Presentation)
- › Competency Domains (Replaces current Dimension 2 – Physician Tasks)
- › Lifecycle (New Dimension 3)

### RECOMMENDATION #5

The NBOME will create a new item bank (repository for examination items) to support the enhanced COMLEX-USA examination. Concurrently, item coding procedures will be reviewed to reflect this new blueprint for the series.

### RECOMMENDATION #6

COMLEX-USA cognitive examinations will continue to provide pass-fail as well as numeric scores, while the clinical skills assessments will provide pass-fail determinations only.

### RECOMMENDATION #7

The NBOME will continue to develop and pilot test novel test items and formats to assess an expanded competency subset. These novel item types include: clinical decision-making (CDM)/key features clinical case formats, authentic patient presentations with audiovisual clips, heart and lung sounds, evidenced-based medicine items such as pharmaceutical advertisement items and abstract interpretation items, etc.

### RECOMMENDATION #8

The NBOME shall provide a display-worthy document (e.g. a certificate) to all candidates who successfully pass all components of COMLEX-USA.

### RECOMMENDATION #9

The NBOME will explore expanded eligibility criteria and/or a portfolio model for certain competency domains.

### RECOMMENDATION #10

Documentation of SOAP notes on the COMLEX-USA Level-2 Performance Evaluation will transition from paper-and-pencil written notes to computer keyboard entry by July 2014.



## RESEARCH

Research on defining the model and the required elements and measurable outcomes for each competency domain is ongoing. The NBOME is exploring new question formats and clinical skills enhancements in areas including, but not limited to, critical appraisal of medical literature, higher order application of knowledge, orphan competency domains (systems-based practice, professionalism, etc.), and clinical decision-making cases. Further work is ongoing on the assessment of the ability to use point-of-care resources and clinical decision-making support tools in patient care.

## NEXT STEPS

Below are some of the activities planned for completion in 2012 through 2014, as part of the Blue Ribbon Panel's recommendations.

- ▶ Substantive work will continue in 2012-2013 on the COMLEX-USA examination blueprint to address competency domains, patient presentations and lifecycle.
- ▶ Novel test items will continue to be pilot-tested in COMLEX-USA examinations. Multi-media test items, which have been pretested in COMLEX-USA since 2008, will be further incorporated.
- ▶ Announcements have been made about transitioning from written SOAP notes in COMLEX-USA Level 2-Performance Evaluation to computer keyboard entry by July 2014. Further logistics research is underway, and examination orientation materials are being developed to affect the change.
- ▶ A recommendation for the replacement of the NBOME's current item bank repository will be made by the end of 2012, with implementation of the new bank slated for the end of 2013.
- ▶ Comprehensive electronic score reporting will be implemented by June 2013.
- ▶ The finalized two-decision point model for an enhanced COMLEX-USA, including potential structural changes to the assessments (e.g., timing, components, other novel item types or features), will be defined and announced no later than July 2014.

The changes outlined by the Blue Ribbon Panel on Enhancing COMLEX-USA are in line with the NBOME Board of Directors' directive to implement gradual content outline changes to the COMLEX-USA licensure examination series. It is anticipated that full implementation will take place between 2015-2020, with minor enhancements to the COMLEX-USA licensure examination series to be added and evaluated in the interim.

## SELECTED BIBLIOGRAPHY – BLUE RIBBON PANEL

Osteopathic Medical Education in the United States, Improving the Future of Medicine – AACOM 2004 – Howard S. Teitelbaum, DO, PhD, MPH

Using National Ambulatory Medical Care Survey Data to Validate Examination Content on a Performance-based Clinical Skills Assessment for Osteopathic Physicians – *JAOA* May 2003

Five-Year Summary of COMLEX-USA Level 2-PE Examinee Performance and Survey Data – *JAOA* March 2010

Perspective: Anticipating the Challenges of Reforming the United States Medical Licensing Examination – *Academic Medicine* March 2010

Job Analysis and the Specification of Content for Licensure and Certification Examinations – *Applied Measurement in Education*, 2001 – M. R. Raymond

Using practice analysis to improve the certifying examinations for PAs – *JAAPA* February 2009

Integrated Core Competencies – COPT 07/09

Guide to Good Medical Practice – USA March 2009, Developed by the National Alliance for Physician Competence

Competency-based Physician Education, Recertification, and Licensure – *Wisconsin Medical Journal* 2007

Assessing the ACGME General Competencies: General Considerations and Assessment Methods – *Academic Emergency Medicine* November 2002

Patient Note Fabrication and Consequences of Unprofessional Behavior in a High-Stakes Clinical Skills Licensing Examination, *Academic Medicine* October 2009

Advancing Resident Assessment in Graduate Medical Education – *Journal of Graduate Medical Education* December 2009

The ACGME outcome project: Retrospective and prospective – *Medical Teacher* 2007

Diagnostic error and clinical reasoning – *Medical Education* 2010

Dual processing and diagnostic errors – *Adv in Health Sci Educ* 2009

Non-analytical models of clinical reasoning: The role of experience – *Medical Education* 2007

ABMS Press Release – Sept 30, 2010 – ABMS, ACGME Increase Emphasis on “Procedural Skills” as a Core Competency for Physician Measurement

Learning Objectives for Medical Student Education – Guidelines for Medical Schools: Report I of the Medical School Objectives Project – *Academic Medicine* 1999

The CanMEDS 2005 Physician Competency Framework

Assessing the Underlying Structure of the United States Medical Licensing Examination Step 2 Test of Clinical Skills Using Confirmatory Factor Analysis – *Academic Medicine* October 2006

How clinical features are presented matters to weaker diagnostics – *Medical Education* 2010

A practical guide to assessing clinical decision-making skills using the key features approach – *Medical Education* 2005

MCC – Guidelines for the Development of Key Feature Problems & Test Cases – April 2010

How specific is case specificity? – *Medical Education* 2006

Medical Curriculum Reform in North America, 1765 to the Present: A Cognitive Science Perspective – *Academic Medicine* 1999

Physician Scores on a National Clinical Skills Examination as Predictors of Complaints to Medical Regulatory Authorities – *JAMA* 2007

The Medical Council of Canada’s Key Features Project: A More Valid Written Examination of Clinical Decision-making Skills – *Academic Medicine* 1995

Learning in Medicine in the 21<sup>st</sup> Century, The Education of Medical Students, The General Professional Education of the Physician – The Flexner Report, 1910 – Henry S. Pritchett

Unmet Needs – Teaching Physicians to Provide Safe Patient Care – Report of the Lucian Leape Institute Roundtable On Reforming Medical Education

Measurement of the General Competencies of the Accreditation Council for Graduate Medical Education: A Systematic Review – *Academic Medicine* March 2009