

NATIONAL BOARD OF OSTEOPATHIC MEDICAL EXAMINERS & COMPLEX-USA

COM STUDENT UPDATE

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President & CEO



NBOME
NATIONAL BOARD OF OSTEOPATHIC MEDICAL EXAMINERS

2017



**NATIONAL
BOARD OF
OSTEOPATHIC
MEDICAL
EXAMINERS**

The NBOME's mission is to protect the public by providing the means to assess competencies for osteopathic medicine and related health care professions.

NBOME National Offices - Come Visit!



Philadelphia



Chicago





NBOME Board of Directors






NBOME Board of Officers





Board Member & COM Locations



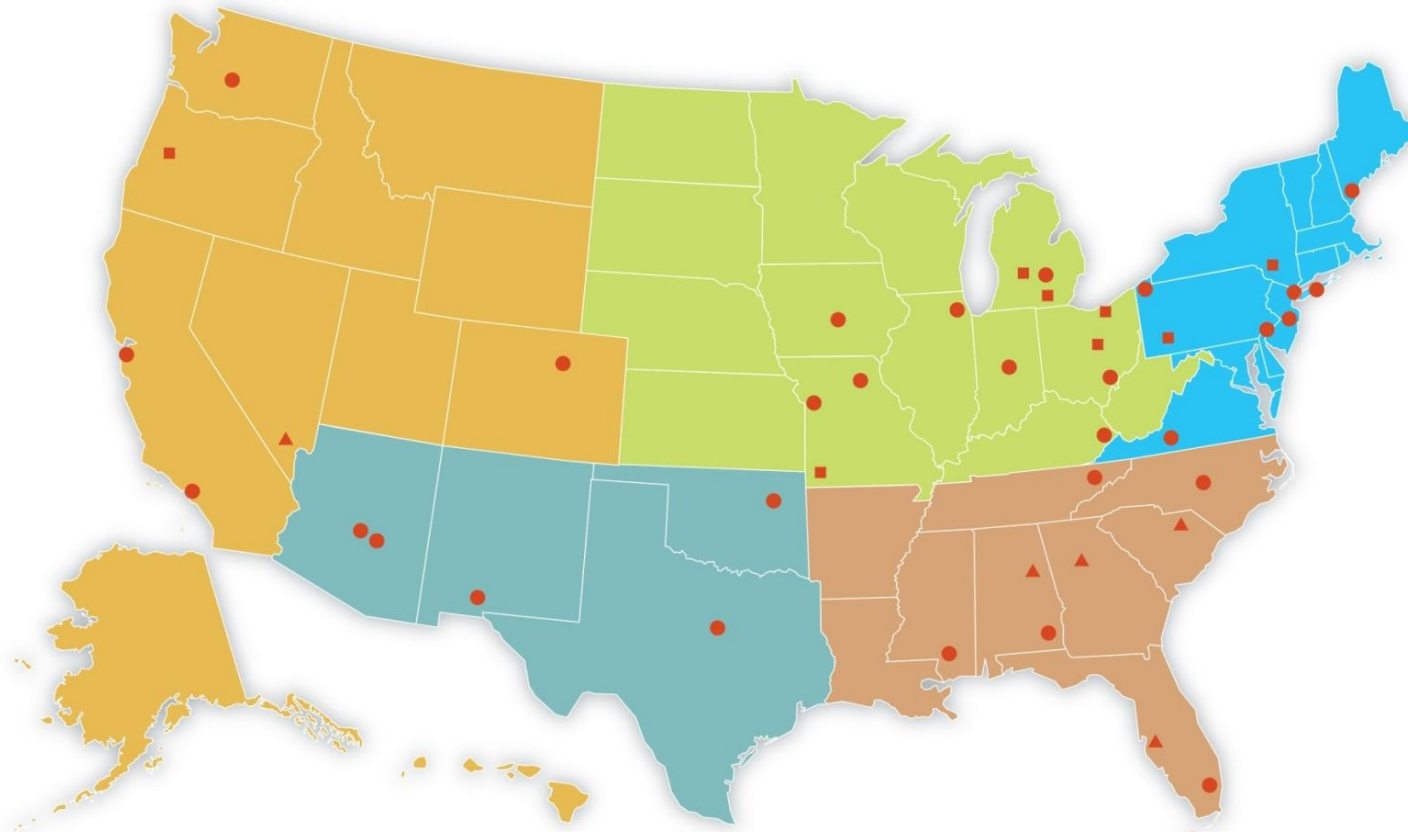
-  COM
-  NBOME Office
-  Board Member

COM STUDENT UPDATE 2017



NATIONAL FACULTY BY REGION

NORTHEAST 289 | **SOUTH 128** | **MIDWEST 315** | **SOUTHWEST 136** | **WEST 119**



COLLEGES OF OSTEOPATHIC MEDICINE

● CIRCLES INDICATE MAIN CAMPUS ■ SQUARES INDICATE ADDITIONAL SITE ▲ TRIANGLES INDICATE BRANCH CAMPUS

WHAT DOES THE NBOME DO FOR ME?



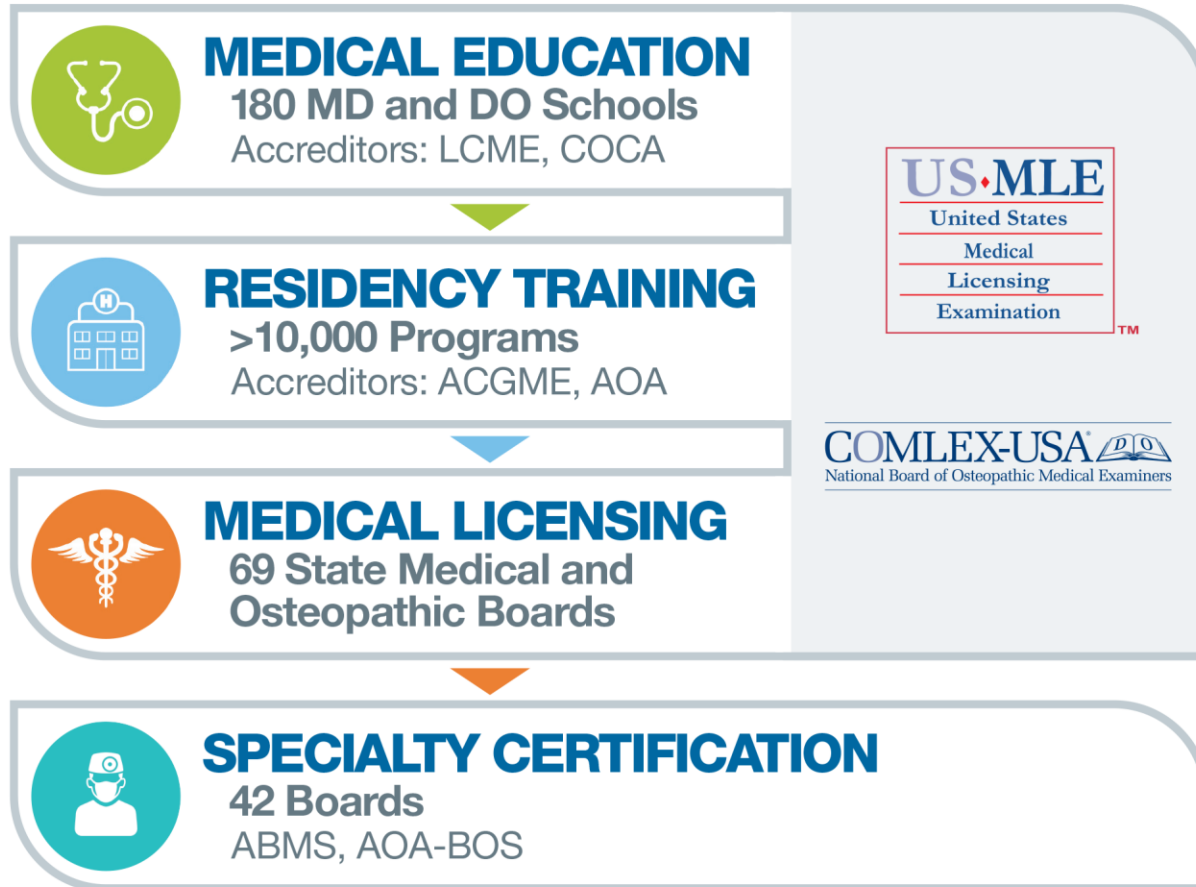
Services to DO Students

- “Protect the Public”- quality and patient safety
- Helping to honor sacred trust for key self-regulation mandate for a profession; entrustability
- Examinations for Licensure (COMLEX-USA, COMVEX) that have validity for the practice of osteopathic medicine
- Free and low-cost resources for self-assessment and test prep for COMLEX-USA (e.g., COMSAE)
- COMAT subject examinations
- Global advocacy for DOs for licensure and registration, and also with Residency Program Directors
- Faculty development – supporting AACOM and improving teaching, learning and assessment within the profession

MEDICAL REGULATION IN THE U.S.



Medical Regulation in the United States

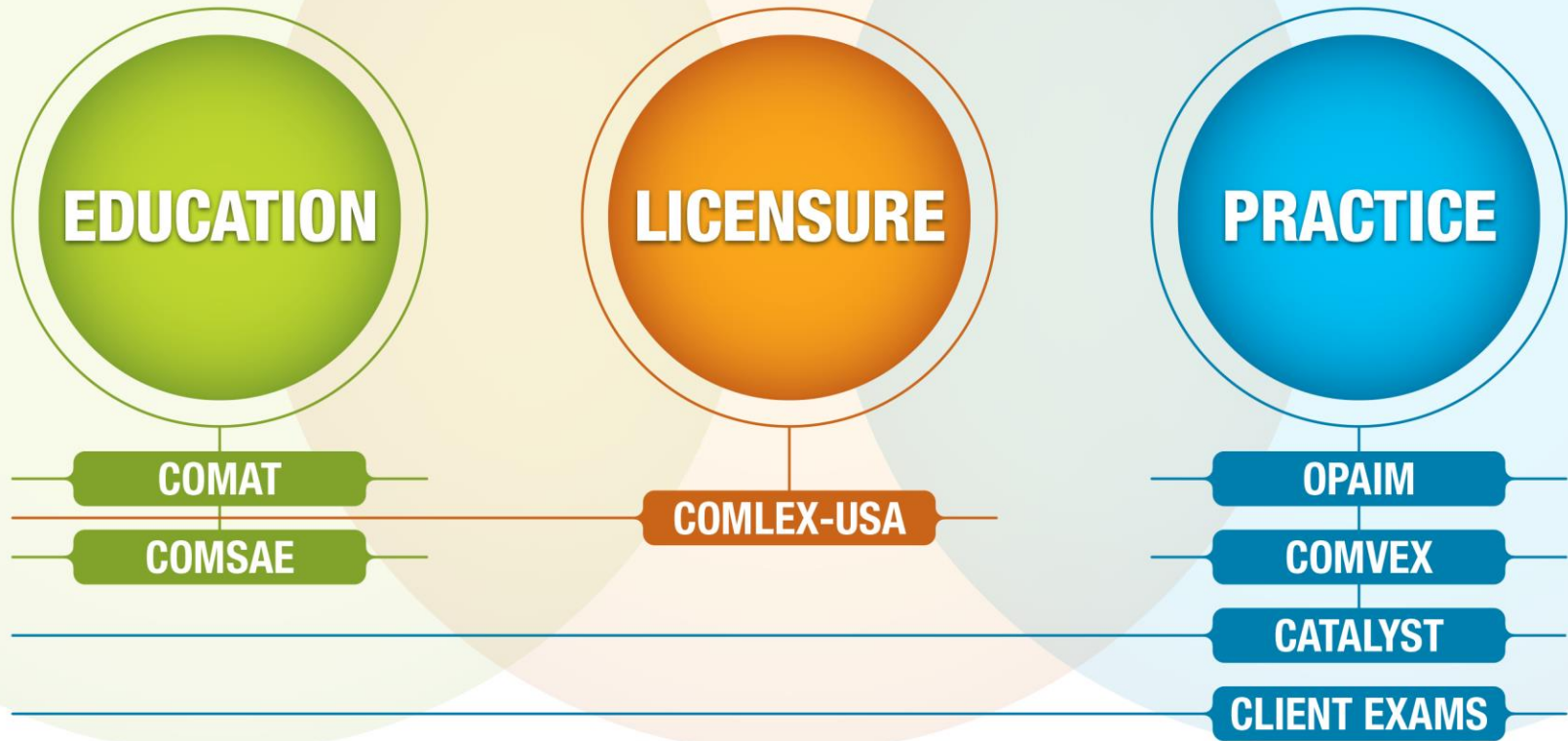


- ▶ State-based system
- ▶ License issued by individual state boards
- ▶ Licensed for undifferentiated practice
- ▶ License renewal required every 2-3 years
- ▶ > 900,000 physicians
- ▶ > 80% are specialty certified
- ▶ 23% are international medical graduates

Source: U.S. Medical Regulatory Trends and Actions Report, Federation of State Medical Boards, 2016.



Assessment Across the Continuum



700+
NATIONAL
FACULTY
MEMBERS

116,000
ACTIVE
LICENSED DOs

225+
FULL-TIME
STAFF

10,000+
RESIDENCY
PROGRAMS

70
STATE
LICENSING
BOARDS

35 COMs
48
CAMPUSES



COMPLEX-USA

National Board of Osteopathic Medical Examiners

Comprehensive Osteopathic Medical
Licensing Examination-USA



COMLEX-USA Overview

- Is the only licensure examination for osteopathic medical practice created by osteopathic physicians, basic scientists and other osteopathic medical educators
- Contains a distinctive examination blueprint and unique testing formats and content that address osteopathic principles, practices, osteopathic manipulative treatment (OMT) and the actual practice of osteopathic medicine
- Is a maturation-linked examination; each Level must be passed in order to take the next Level, and Levels 1 and 2 must be passed to earn the US DO degree (COCA Standard)



COMLEX-USA Overview, continued...

- The Federation of State Medical Boards of the United States (www.fsmb.org) has found evidence for COMLEX-USA validity to be “exemplary”
- Accepted and entrusted in all 50 states for licensure, and in increasingly recognized internationally (e.g., Canada, UK, New Zealand, Australia)
- **ACGME reports “COMLEX-USA and USMLE are both acceptable for ACGME-accredited residency programs” and with Fellowship Program applications; widespread acceptance in GME**



COMLEX-USA[®]

National Board of Osteopathic Medical Examiners

COMLEX-USA Level 1

COMLEX-USA Level 2 - Cognitive Evaluation (CE)

COMLEX-USA Level 2 - Performance Evaluation (PE)

COMLEX-USA Level 3



COMLEX-USA Current Blueprint for Testing

Dimension 1: Patient Presentation	Level 1, Level 2 CE, Level 3
Population Health Concepts and Patients with Presentations Related to Health Promotion, Chronic Disease Management, and Human Development	8 - 16%
Patients With Presentations Related to Digestion and Metabolism	4 - 10%
Patients With Presentations Related to Cognition, Behavior, Sensory & Central Nervous Systems, Substance Abuse, and Visceral and Sensory Pain	28 - 38%
Patients With Presentations Related to the Musculoskeletal System, including Somatic Pain	6 - 12%
Patients With Presentations Related to the Genitourinary System and Human Sexuality	3 - 8%
Patients With Presentations Related to Circulation and the Respiratory System	8 - 16%
Patients With Presentations Related to Thermoregulation	2 - 6%
Patients With Presentations Related to Trauma, Masses, Edema, Discharge, and the Skin, Hair and Nails	8 - 16%
Patients With Presentations Related to Pregnancy, the Peripartum, and the Neonatal Period	3 - 8%

Dimension 2: Physician Tasks	Level 1	Level 2 CE	Level 3
Health Promotion & Disease Prevention	1 - 5%	15 - 20%	15 - 20%
History & Physical Examination	5 - 15%	30 - 40%	10 - 20%
Diagnostic Technologies	1 - 5%	10 - 20%	15 - 25%
Management	2 - 7%	10 - 20%	25 - 40%
Scientific Understanding of Health & Disease Mechanisms	70 - 85 %	5 - 15 %	5 - 10%
Health Care Delivery Issues	1 - 3 %	5 - 10%	5 - 10%



COMLEX-USA Level 1

A one day, 8 hour, 400 question computer-based multiple choice examination, designed as a problem-based and symptom-based assessment integrating the foundational and basic biomedical sciences of anatomy, behavioral science, biochemistry, microbiology, osteopathic principles, pathology, pharmacology, physiology and other areas of medical knowledge relevant to solving clinical problems and promoting and maintaining health in providing osteopathic medical care to patients.



COMLEX-USA Level 2-Cognitive Evaluation (CE)

A computer-based, cognitive evaluation that emphasizes the medical concepts and principles necessary for making appropriate medical diagnoses for the practice of osteopathic medicine through patient history and physical examination findings. Level 2-CE integrates the clinical disciplines of emergency medicine, family medicine, internal medicine, obstetrics/gynecology, osteopathic principles, pediatrics, psychiatry, surgery, and other areas relevant to solving clinical problems and promoting and maintaining health in providing osteopathic medical care to patients.



COMLEX-USA Level 2-Performance Evaluation (L2-PE)

A standardized patient-based clinical skills examination that assesses fundamental clinical skills, including physician-patient communication, interpersonal skills and professionalism; medical history-taking and physical examination skills; osteopathic principles and osteopathic manipulative treatment; and documentation skills, including synthesis of clinical findings, integrated differential diagnosis, and formulation of a diagnostic and treatment plan.



COMLEX-USA Level 2-Performance Evaluation

- One-day clinical skills examination (7 hours)
- AM and PM sessions throughout the year 6 days/week
- NBOME National Centers for Clinical Skills Testing (suburban Philadelphia and Chicago)
- 12 encounters with standardized patients
- Timed stations (14-minute encounters, 9 minutes for SOAP Note)
- Integrates and assesses OPP and OMT; SOAP Note Integrity
- Orientation Guide and Instructional Program on-line



COMLEX-USA Level 3

A computer-based, cognitive evaluation that emphasizes the medical concepts and principles required to make appropriate patient management decisions. Level 3 integrates the clinical disciplines of emergency medicine, family medicine, internal medicine, obstetrics/gynecology, osteopathic principles, pediatrics, psychiatry, surgery, and other areas relevant to solving clinical problems and promoting and maintaining health in providing osteopathic medical care to patients.

- New examination blueprint coming in 2018, with 2-day administration and PD attestation of “good academic and professional standing”



Features of COMLEX-USA Cognitive Testing

- Level 1, Level 2-CE and Level 3 each feature one-day computer-delivered examinations (8 hours)
- ~400 Test items (including pre-test items)
- Eight (8) separate sections with 50 test items in each
- Level 3 includes Clinical Decision-Making (key features) items
- Level 3 reverts to a two-day exam format in September 2018 to assess across 7 competency domains (Note: black out period May-August 2018)



COMLEX-USA Cognitive Testing

NBOME-Prometric Professional Test Sites in the U.S. & Canada

More than 350 labs/280 locations

More than 4,700 work stations

Recently expanded sites!





COMLEX-USA Common Question Designs: Levels 1, 2-CE, 3

- Stand-alone multiple choice
 - Contains a stem, usually with a clinical presentation
 - Interrogatory – the question
 - Only one best/correct answer
 - 5 possible answers in most cases
- Matching
 - Simple choice that may be used once, multiple times or not at all
 - Extended match



COMLEX-USA Common Question Designs: Levels 1, 2-CE, 3

- Clinical Case Scenarios
 - Frequently require interpretation of clinical patient presentations- history and physical/structural findings, laboratory data, x-ray, EKG, graphs, diagrams, other images or videos
 - Characteristically have 2- 3 questions based on clinical case presented

Note: Test item types are not mixed during the exam.



COMLEX-USA Common Question Designs: Cognitive Examinations - Level 3

Clinical Decision-making items

- Clinical scenarios with directive for constructed responses (e.g., short answers), or extended matching
- Only found currently in Level 3
- Incorrect answers that effect patient safety (i.e., “killer items”) result in points lost
- See tutorials on website

COM STUDENT UPDATE 2017



A screenshot of a web browser window displaying an ECG. The browser title is "Exhibit - Windows Internet Explorer" and the address bar shows "http://www.nbome.org/intro/level2/html/002559.htm". The ECG is displayed on a grid with 10 leads: I, aVR, V1, V4, II, aVL, V2, V5, III, aVF, V3, and V6. A fourth row shows a rhythm strip labeled "II". Below the ECG is a "Close Window" button. The browser's status bar shows "Done" and "Internet". Below the browser window is a navigation bar with buttons for "PREVIOUS", "NEXT", "COMMENT", "MARK", and "REVIEW". At the bottom is the Windows taskbar with the Start button, several application icons, and a system tray showing the time as 2:01 PM.

**Typical Screens
Seen During the
COMLEX-USA
Cognitive
Testing**

COM STUDENT UPDATE 2017



A screenshot of a web browser window displaying the NBOME test interface. The browser title is "NBOME - Windows Internet Explorer" and the address bar shows "http://www.nbome.org/intro/level2/html/item_L2_Q43.htm". The interface includes a blue header with "Section 1, Question 43 Of 50", "Total Questions of the Test: 50", "Test Taker COMLEX Level 2-CE", and "Time left for the test 0:0:0". The main content area contains a clinical vignette: "A 68-year-old male is brought to the emergency department after being found lying on the sidewalk next to an empty bottle of whiskey. He complains of a headache, he is somewhat confused, and he has the odor of alcohol on his breath. Examination reveals a hematoma to the right side of the parietal skull. CT scan of the head is obtained as shown in the exhibit." Below the vignette, it says "Question 1 of 2 in set" and "The most likely diagnosis is". There are five multiple-choice options: A. cerebral contusion, B. epidural hematoma, C. normal pressure hydrocephalus, D. subarachnoid hemorrhage, and E. subdural hematoma. A "Show Answer" button is located below the options. At the bottom of the question area, there are buttons for "EXHIBIT" and "LAB VALUES". The bottom navigation bar contains buttons for "PREVIOUS", "NEXT", "COMMENT", "MARK", and "REVIEW". The Windows taskbar at the bottom shows the Start button, several application icons, and the system tray with the time "2:02 PM".

Typical Screens
Seen During the
COMLEX-USA
Cognitive
Testing

COM STUDENT UPDATE 2017



Exhibit - Windows Internet Explorer
http://www.nbome.org/intro/level2/html/001044.htm

R

Time left for the test
0:0:0

found lying on the sidewalk next what confused, and he has the ght side of the parietal skull. CT

EXHIBIT LAB VALUES

PREVIOUS NEXT COMMENT MARK REVIEW

start S. T. D. M. S. D. C. 2:03 PM

**Typical Screens
Seen During the
COMLEX-USA
Cognitive
Testing**

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NBOME - Windows Internet Explorer
http://www.nbome.org/intro/level3/HTML/item_13_Q28.htm

Section 1, Question 28 of 50
Total questions in this test: 50

Test Taker
COMLEX-USA Level 3 Practice Exam

Time remaining
00:00:00

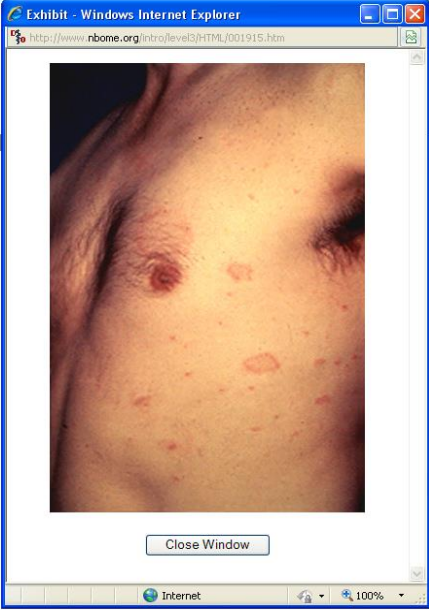
A 29-year-old male presents to the office with a non-pruritic rash. The initial lesion appeared over the left chest area, as shown in the exhibit a generalized eruption. VDRL test and serum Lyme titer are negative.

Question 2 of 2 in set

The most appropriate management is

- A. intramuscular penicillin
- B. systemic ketoconazole
- C. systemic steroid therapy
- D. topical steroid therapy
- E. ultraviolet light therapy

Show Answer



Close Window

PREVIOUS NEXT COMMENT MARK

start Spherical Desk... ppt presentatio... Aacom progra... RE: presentati... NBOME | COML... NBOME | CBT P... NBOME - Wind... Exhibit - Windo... My Documents

Typical Screens
Seen During the
COMLEX-USA
Cognitive
Testing



Sample COMLEX-USA-style Question Program:

Disclosure: While sample test items are intended to be written in the style typically found in COMLEX-USA examinations, this item is not currently found nor will it be found in any actual COMLEX-USA examination.

A 32-year-old female executive has been under your care for peptic ulcer disease. Repeat esophagogastroduodenoscopy reveals a 0.5-cm gastric ulcer. Biopsy is negative for carcinoma, and testing for *Helicobacter pylori* is negative. Her medications include standard antacid therapy and an H₂-blocker. The most appropriate next step in management is to add:

- A** calcium carbonate
- B** cimetidine
- C** famotidine
- D** nizatidine
- E** rabeprazole



LIKE US ON
FACEBOOK
FOR THE
CORRECT
ANSWER!



Sample COMLEX-USA-style Question Program

A 48-year-old female presents to the office with a 3-week history of head, back, and neck pain. She has not been sleeping well and is tired all the time. She states that she “just aches all over,” but she cannot be more specific about the pain. She has been healthy and is on no medications. Physical examination reveals bilateral tenderness over the suboccipital triangle, sternum, medial scapulae, PSIS, low back, and pes anserine bursae. The most appropriate recommendation to help relieve her symptoms is:

- A** low-impact exercise program
- B** long-acting opioid analgesics
- C** myofascial release to affected areas
- D** nonsteroidal anti-inflammatory drugs
- E** oral corticosteroids



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FACEBOOK
FOR THE
CORRECT
ANSWER!



Novel Item Formats in COMLEX-USA

- Multimedia- Video, Audio, avatar with heart or lung sounds, structural findings
- Mock pharma ad items
- Research abstract items
- Clinical decision-making (Key Features) cases (L3)
- These items help to assess elements of competency domains other than application of osteopathic medical knowledge

Example Multi-Media Test Item*

A 55-year-old female presents with a chief complaint of frequent stumbling and tripping. There has been no history of trauma to her extremities or her head. The patient reports that her brother was similarly affected 2 years ago. She has also noted fasciculations, and an ankle jerk reflex is noted to be absent on the right. The patient is not experiencing any pain. The patient is asked to walk across the room and presents with the gait demonstrated in the exhibit. Which muscle group is affected based on the demonstrated gait?

- A** anterior tibial
- B** gastrocnemius
- C** peroneal
- D** quadriceps femoris
- E** soleus



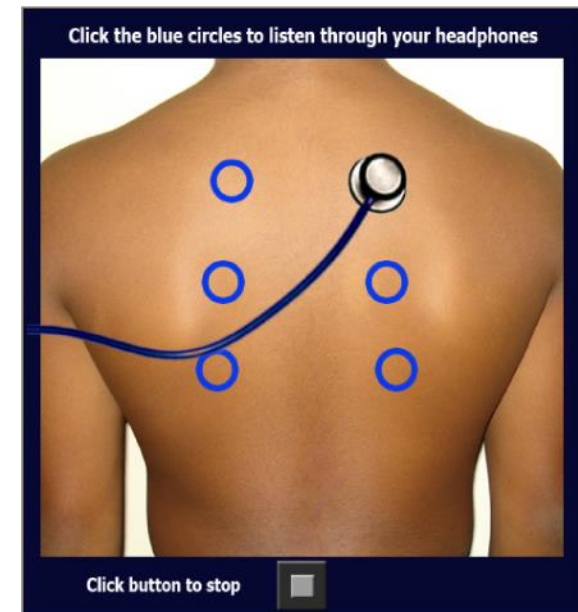
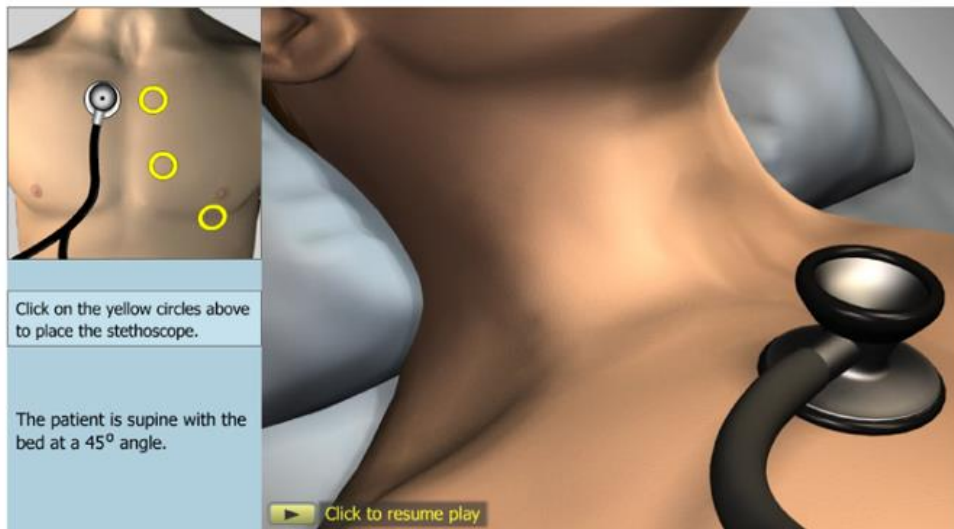
*not in COMLEX-USA format



Novel Item Formats in COMLEX-USA

- Add to authenticity and validity
- Broaden the assessment over an expanded competency subset, across 7 competency domains
- Include use of multimedia test items (e.g., audio, video, patient scenarios, heart and lung sounds)- in COMLEX-USA since 2007
- Newer prototype formats exploring assessment of information-mastery skills, biostatistics, evidence-based medicine (following FOMCD)
- Clinical decision-making (CDM)/Key Features cases are now in COMLEX-USA Level 3

COMLEX-USA Innovative Items

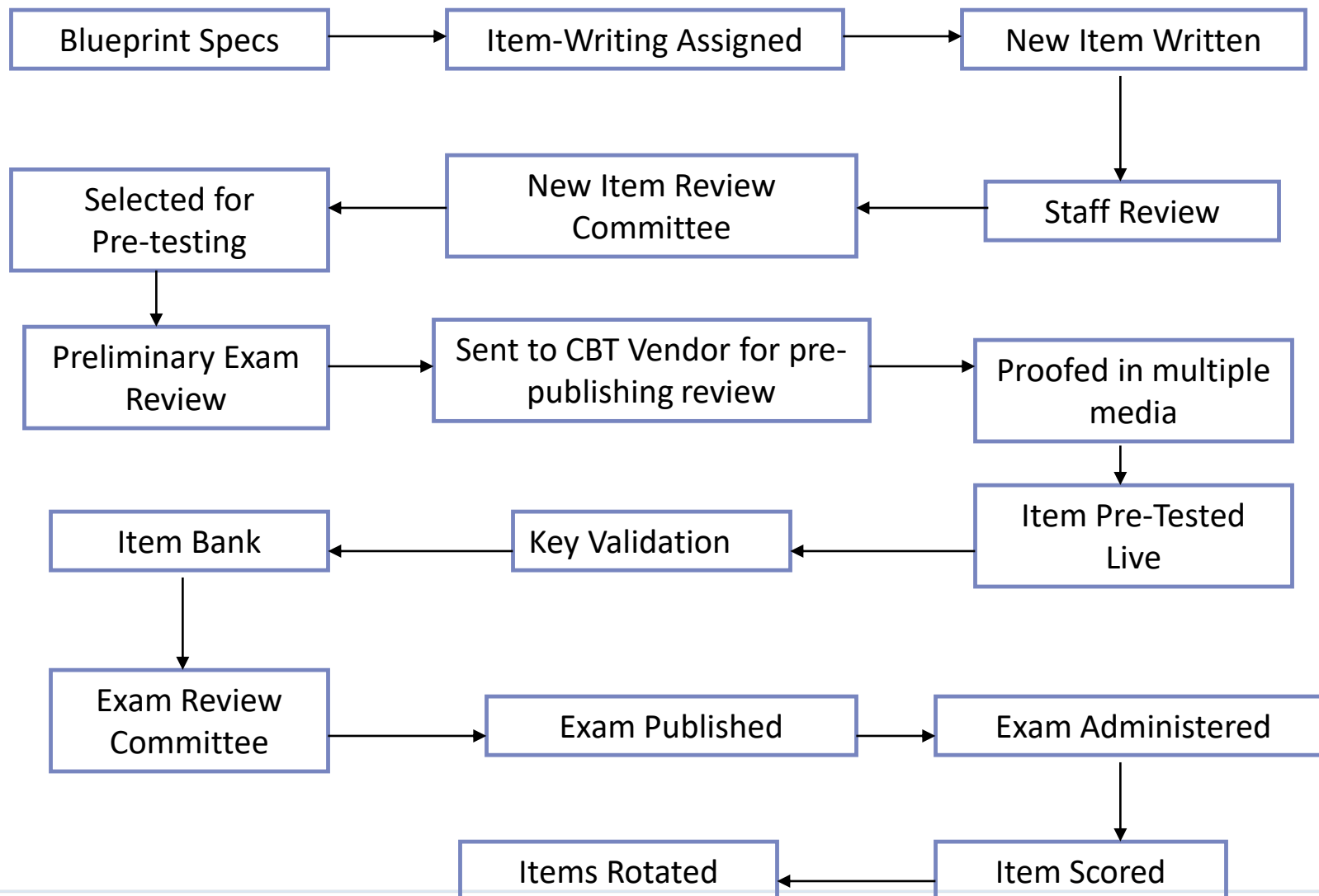




COMLEX-USA Videos



TEST ITEM PATHWAY: CONCEPTION TO SCORE

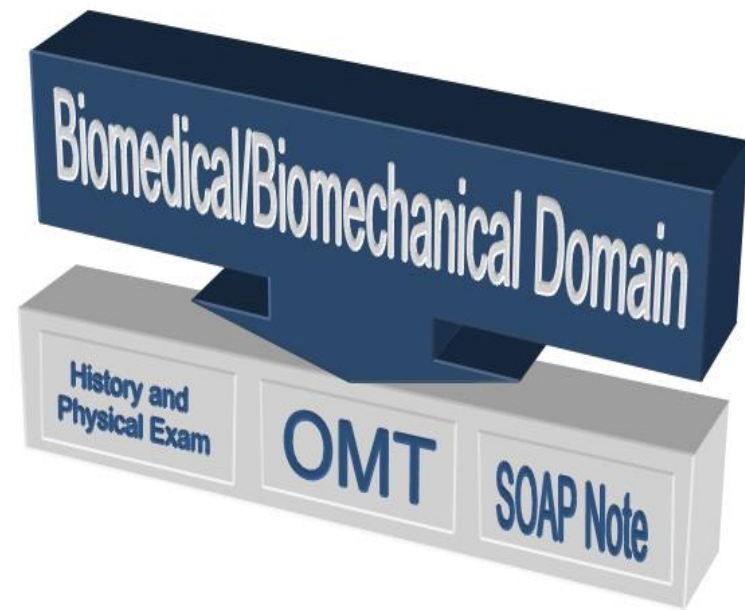




COMLEX-USA Level 2-Performance Evaluation

- One-day clinical skills examination (7 hours); AM and PM sessions throughout the year 6 days/week
- NBOME's National Centers for Clinical Skills Testing (Philadelphia and Chicago)
- 12 encounters with standardized patients
- Timed stations (14-minute encounters, 9 minutes for electronic SOAP Note)
- Integrates and assesses OPP and OMT
- Orientation Guide, Instructional Program Video, eSOAP Practice module online

Clinical Skills in COMLEX-USA Performance Evaluation



Langenau E, Dyer C, Roberts WL, Wilson CD, Gimpel JR. Five year summary of COMLEX-USA Level 2-PE examinee performance and survey data. Journal of the American Osteopathic Association. March 2010; 110(3).



COMLEX-USA Bulletin of Information (BOI)

- Available online at www.nbome.org
- The BOI is a legally binding document
- Provides detailed information regarding policies, rules, procedures and obligations of candidates taking the COMLEX-USA sequence of exams
- Clearly stipulates that you may not bring notes or electronic resources, etc., into testing stations, or share content-specific information from exams
- Make sure to familiarize yourself with information herein and avoid irregular conduct



Candidates requesting accommodations under the Americans with Disabilities Act, as amended

- Application and Guidelines are downloadable from the NBOME website
- Apply early, as it may take 8-12 weeks for review, verification and approval to take place before an administrative accommodation can be given
- While considerable weight is given to prior testing accommodations, documentation is required



COMLEX-USA Scoring and Reporting

COMLEX-USA uses “criterion-referenced” methodology

COMLEX-USA exams are “Pass/Fail”

- “Pass” if meets or exceeds the established passing score
- Passing means having met or exceeded the standard for competency (minimum competency required)
- Passing Candidates cannot retake the test for a higher score



COMLEX-USA Scoring and Reporting

COMLEX-USA Cognitive Examinations	Passing Score	Mean Score
Level 1	400	500-550
Level 2-CE		
Level 3		
COMLEX-USA Performance Evaluation	Score	
Level 2-PE	Pass/Fail	



COMLEX-USA Scoring and Reporting

- Score Reporting: Pass/Fail, 3-digit standard scores
*2-digit standard scores phased out in 2015
- L2-PE Score Reporting: Pass-fail only
- Percentile conversion tool available on website, ALL ACCESS
- Reported on ERAS for all DO applicants
- Smart phone app available! (NBOME App...iPhones)



Percentile Score Converter in App Store and on Website

A graphic for downloading the NBOME mobile app. It features a blue square with a white downward arrow, the text "DOWNLOAD the NBOME mobile app for easy access to the COMLEX-USA Percentile Score Conversion Tool", a QR code, and the NBOME logo.

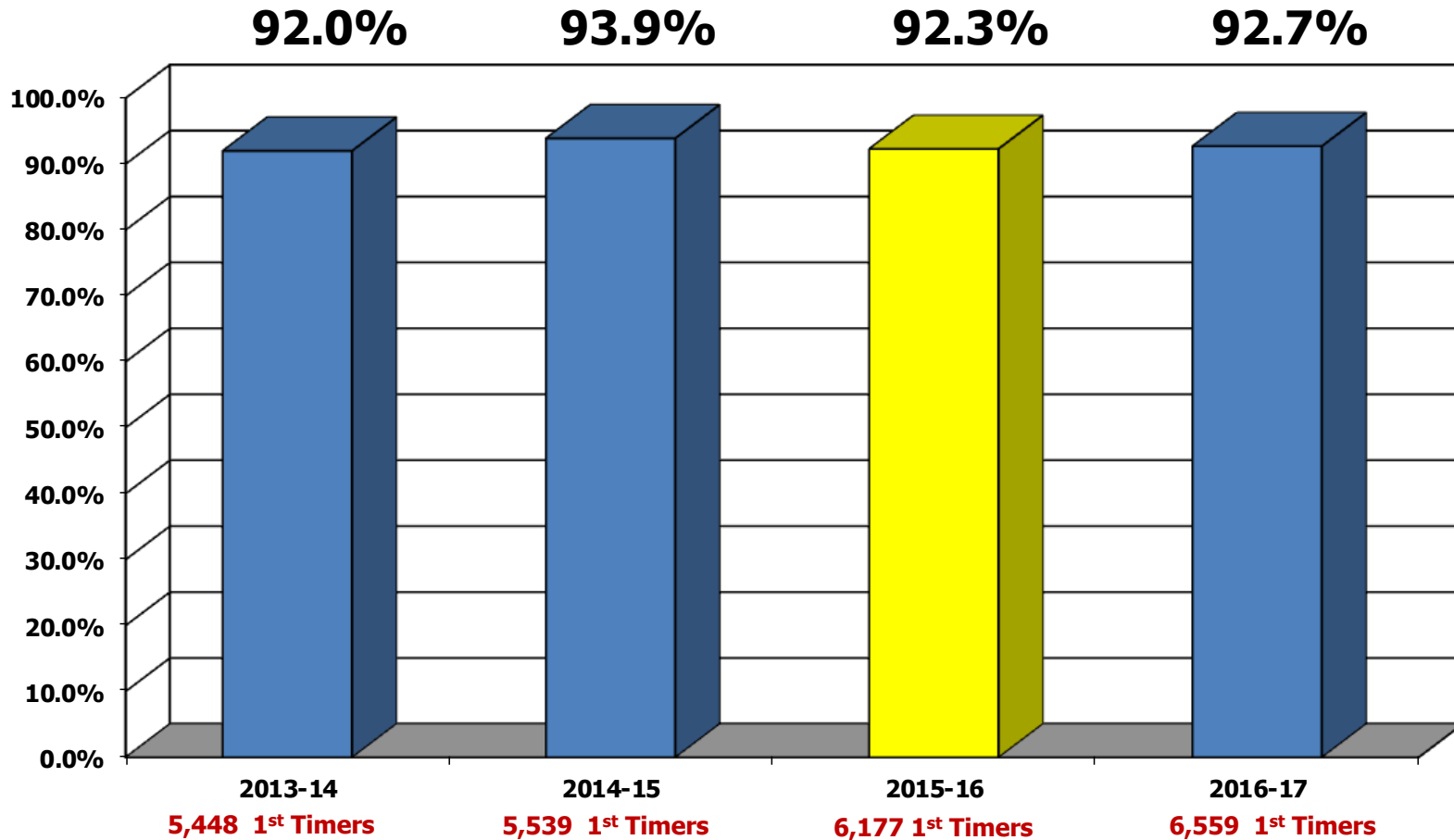
DOWNLOAD the NBOME mobile app for easy access to the COMLEX-USA Percentile Score Conversion Tool

COMLEX-USA Level 1
(May 2015 - April 2016)

Score	Percentile
400	8
450	22
500	44
550	66
600	84
650	94
700	98

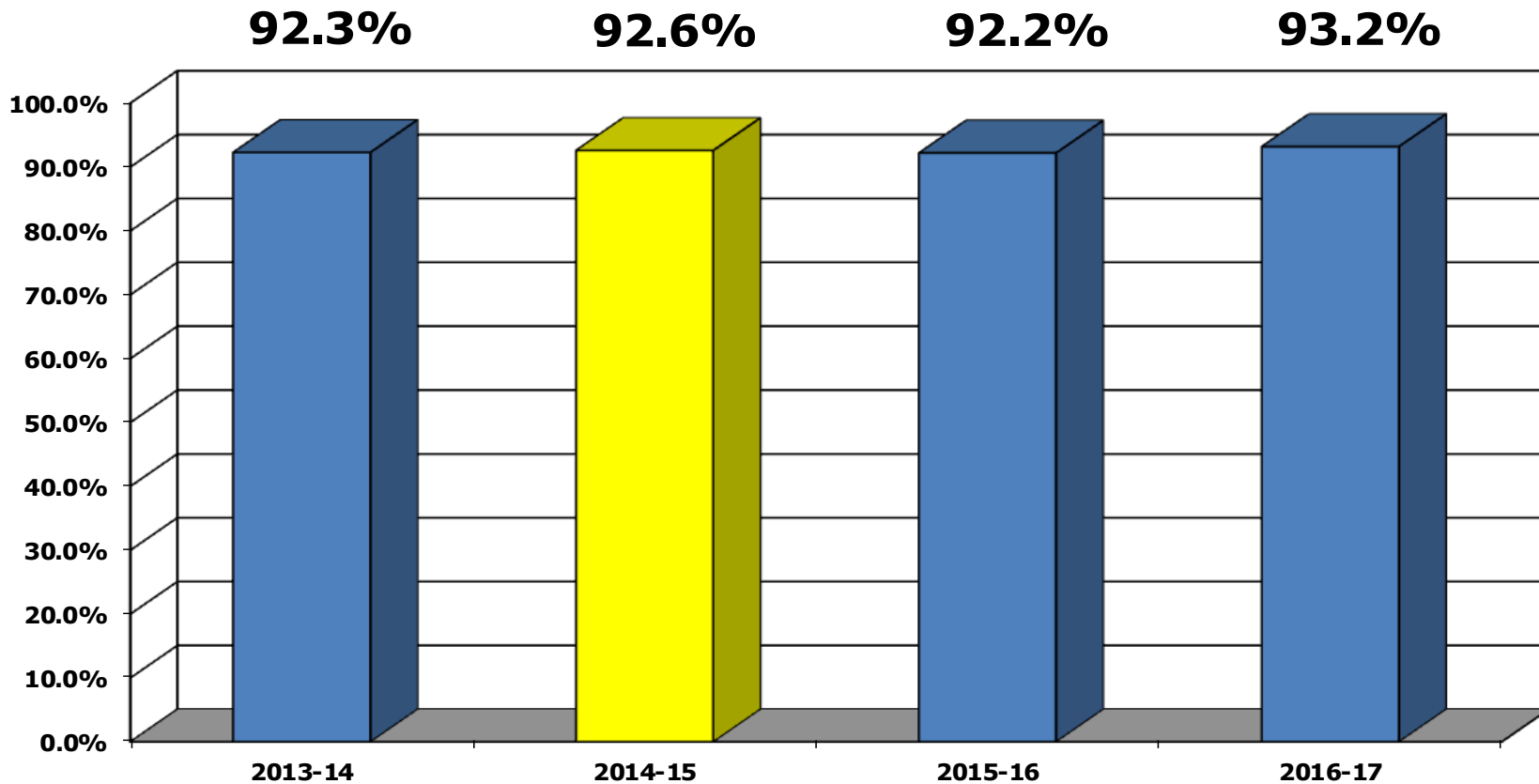
Vary by testing cycle

COMLEX-USA LEVEL 1 FIRST-TIME TAKER PASSING RATES



The yellow bar indicates the admin year when a new/revalidated pass standard is applied.

COMLEX-USA LEVEL 2-CE FIRST-TIME TAKER PASSING RATES



4,973 1st-timers

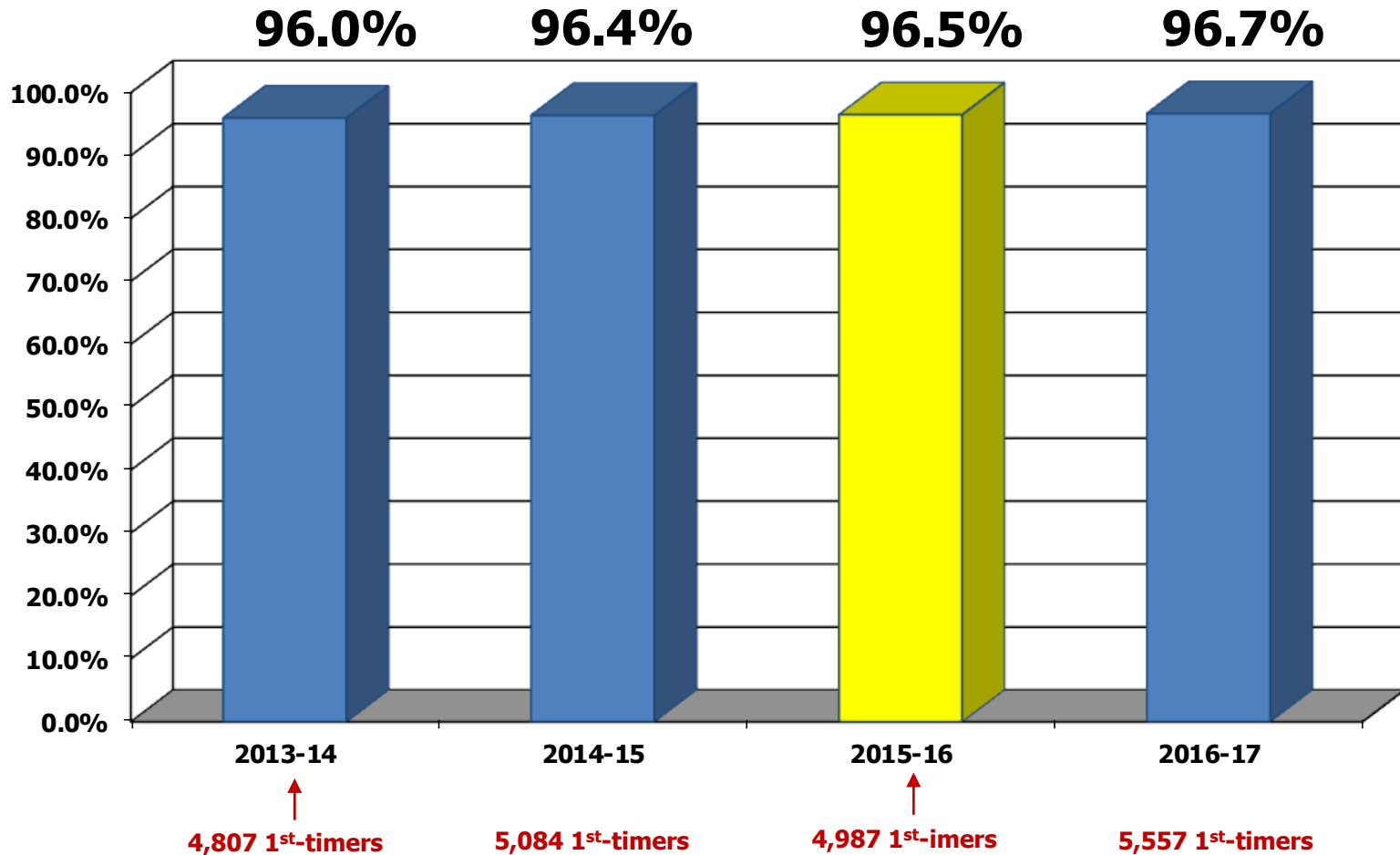
5,423 1st-timers

5,416 1st-timers

6,084 1st-timers

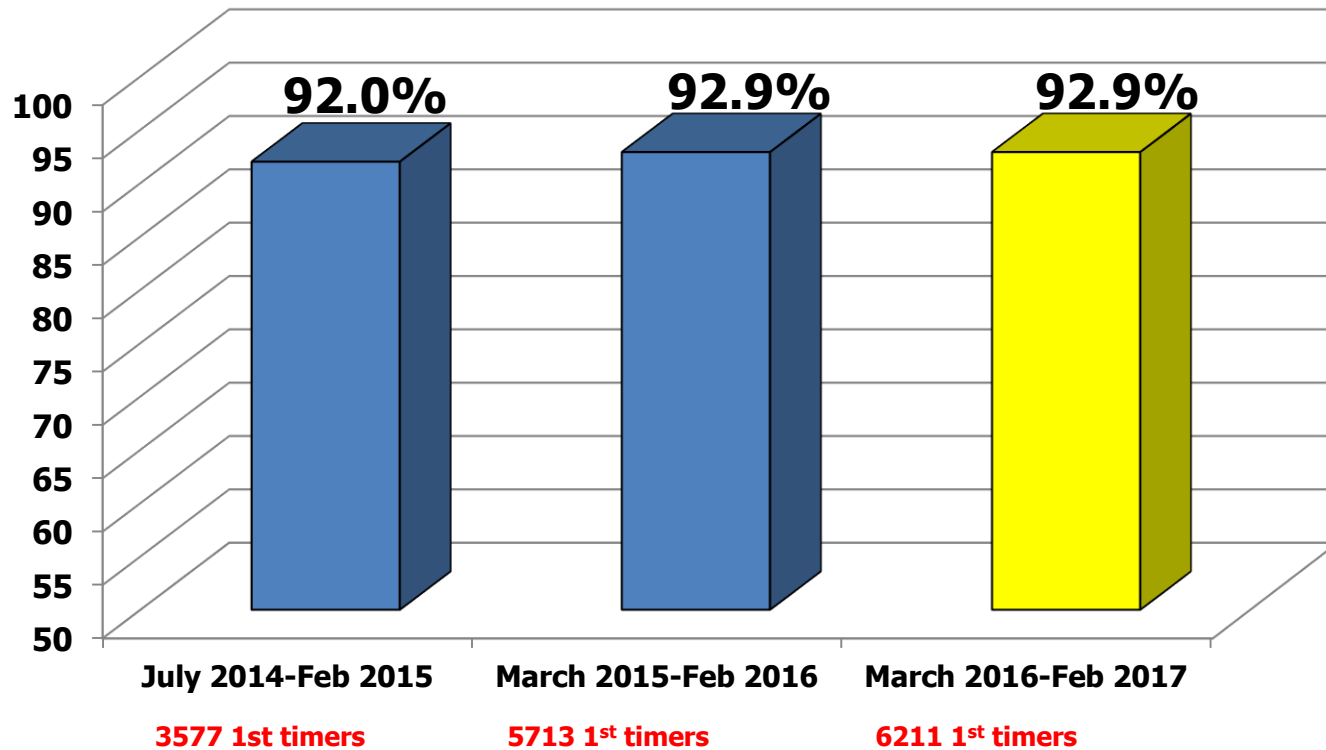
The yellow bar indicates the admin year when a new/revalidated pass standard is applied.

COMLEX-USA LEVEL 3 FIRST-TIME TAKER PASSING RATES



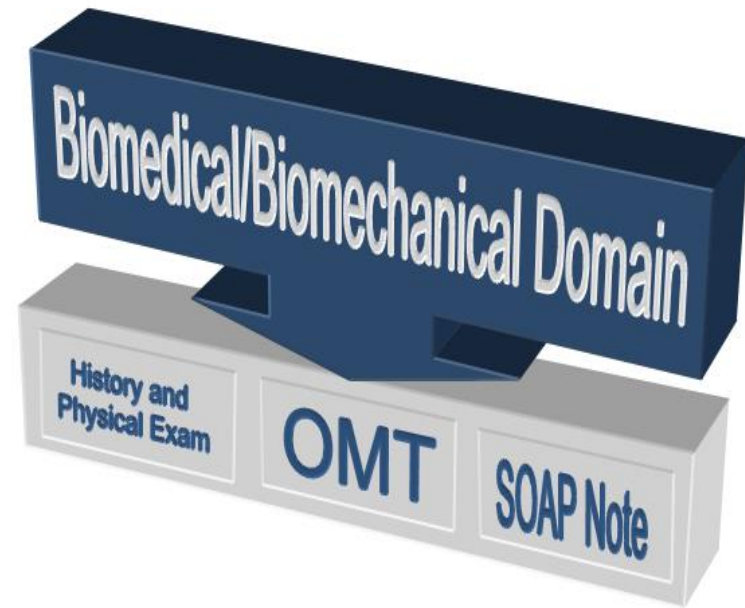
The yellow bar indicates the admin year when a new/revalidated pass standard is applied.

COMLEX-USA LEVEL 2-PE FIRST-TIME TAKER PASSING RATES



The yellow bar indicates the admin year when a new/revalidated pass standard is applied.

Clinical Skills in COMLEX-USA Performance Evaluation



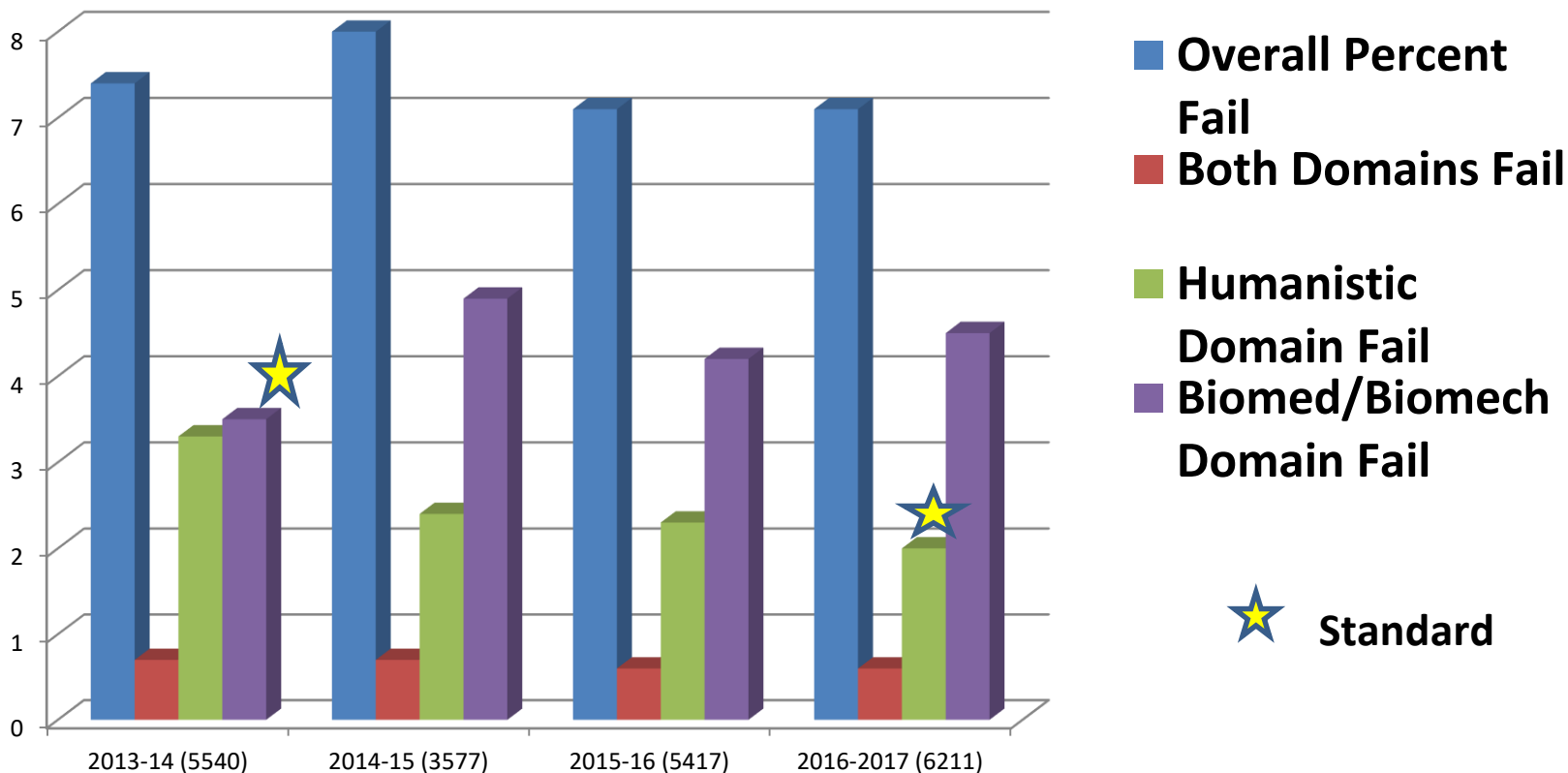
Sandella JM, Smith LA, Gallagher LA, Langenau EE. Patterns of misrepresentation of clinical findings on patient notes during the COMLEX-USA Level 2-PE. *J Am Osteopath Assoc.* 2014;114(1):22-29. doi:10.7556/jaoa.2014.004.

Helstrom J, Langenau EE, Sandella JM, Mote B. Keyboard Data Entry: Use among Osteopathic Medical Students and Residents. *J Am Osteopath Assoc.* 2014;114(4):274-282. Doi: 10.7556/jaoa.2014.053.

Sandella JM, Smith LA, Dowling DJ. Consistency of interrater scoring of student performances of osteopathic manipulative treatment on COMLEX-USA Level 2-PE. *J Am Osteopath Assoc.* 2014;114(4):253-258. doi:10.7556/jaoa.2014.050.



COMLEX-USA Level 2-PE First Time-Taker Fail Rates





When are COMLEX-USA results available?

- Computer-based Examinations (Levels 1, 2-CE, 3): 4-6 weeks after examination
- Level 2-Performance Evaluation: 8-10 weeks after examination
- Score reporting subject to delays when new passing standards implemented or other circumstances



Examination Integrity and Security

- NBOME Bulletin of Information
- Test Center Protocols and Monitoring
- Irregular Conduct
- Confidentiality Agreements (Candidates, National Faculty)
- Investigation and Forensics
- Unprofessional Language and other behavior
- Level 2-PE SOAP Note Integrity



Test Preparation Material

- Free tutorials for all COMLEX-USA examinations are available for viewing and download from the NBOME website www.nbome.org
- The NBOME does not recommend any one review book, review system, or prep course to prepare for COMLEX-USA examinations (Be wary of confidentiality issues and breaches)
- Studies have concluded that best preparation is active engagement with the COM curriculum. And the best predictors of performance are COM GPA (and undergrad GPA; MCAT scores are not good predictors of medical licensure exam scores)
- Low-cost COMSAE-self assessment created in response to student input, widely used now. Connect with FACEBOOK for free QOM!



Comprehensive Osteopathic Medical Self-Assessment Examination

- Phase 1, Phase 2 and Phase 3 have distinct test forms
- School bulk purchase program for assisted self assessment
 - Phase 1, three forms for student use; two forms for COM bulk purchase



COMSAE and COMLEX-USA Performances November 2014 - January 2016*

COMLEX-USA	COMSAE	
	N	CORR
Level 1	5,446	.73
Level 2-CE	3,548	.69
Level 3	695	.71

* Included in analysis are candidates who took the COMSAE for the first time in a timed environment, and prior to their respective COMLEX-USA examinations.



COMLEX-USA

National Board of Osteopathic Medical Examiners

Enhanced COMLEX-USA Blueprint 2018-2019





Enhancements to COMLEX-USA

1. Embedded Test Item Lab Values and Calculator- ~~2017-2018~~
2. Optional AM and PM Sessions Breaks (Clock Stopped)- ~~2017-2018~~
3. Eligibility Modification: Level 3-Attestation of Resident being in “Good Academic and Professional Standing” by an AOA or ACGME- Accredited Residency PD- 2018-2019
4. Eligibility Modification: Levels 1-2- Attestation of OMS being in “Good Academic and Professional Standing” by an AOA COCA-accredited COM Dean- 2019-2020
5. Two-day Level 3 in 2018-2019 (likely September after blackout May-August 2018); expanded Clinical Decision-Making scenarios and other novel item formats
6. Updated and detailed COMLEX-USA Test Specifications and Guides published to www.nbome.org by July 2017



Enhanced COMLEX-USA Blueprint Recent Publications

Gimpel JR, Horber D, Sandella J, Knebl J, Thornburg J. Evidence-based redesign of the COMLEX-USA series. *J Am Osteopath Assoc.* 2017;117(4):253-261. doi:10.7556/jaoa2017.043

Gimpel, JR. Redefining Competency Domains for Osteopathic Medical Practice. *J Am Osteopath Assoc.* 2016;116:568-570.



Enhanced COMLEX-USA Blueprint 2018-2019

Focuses the assessment on two dimensions that continue to integrate:

- Osteopathic philosophy of whole person healthcare
- Underlying structure-function relationships
- Interdependence of body systems
- Self-healing and self-regulatory mechanisms, and
- Osteopathic approach to patient care, including osteopathic manipulative medicine and OMT

COM STUDENT UPDATE 2017



ASSESSMENT PURPOSE

1

DECISION POINT 1

Graduation/
DO Degree

ENTRY INTO GME

- › LEVEL 1
- › LEVEL 2-CE
- › LEVEL 2-PE

2

DECISION POINT 2

State
Licensure

ENTRY INTO INDEPENDENT PRACTICE

- › LEVEL 3A
- › LEVEL 3B

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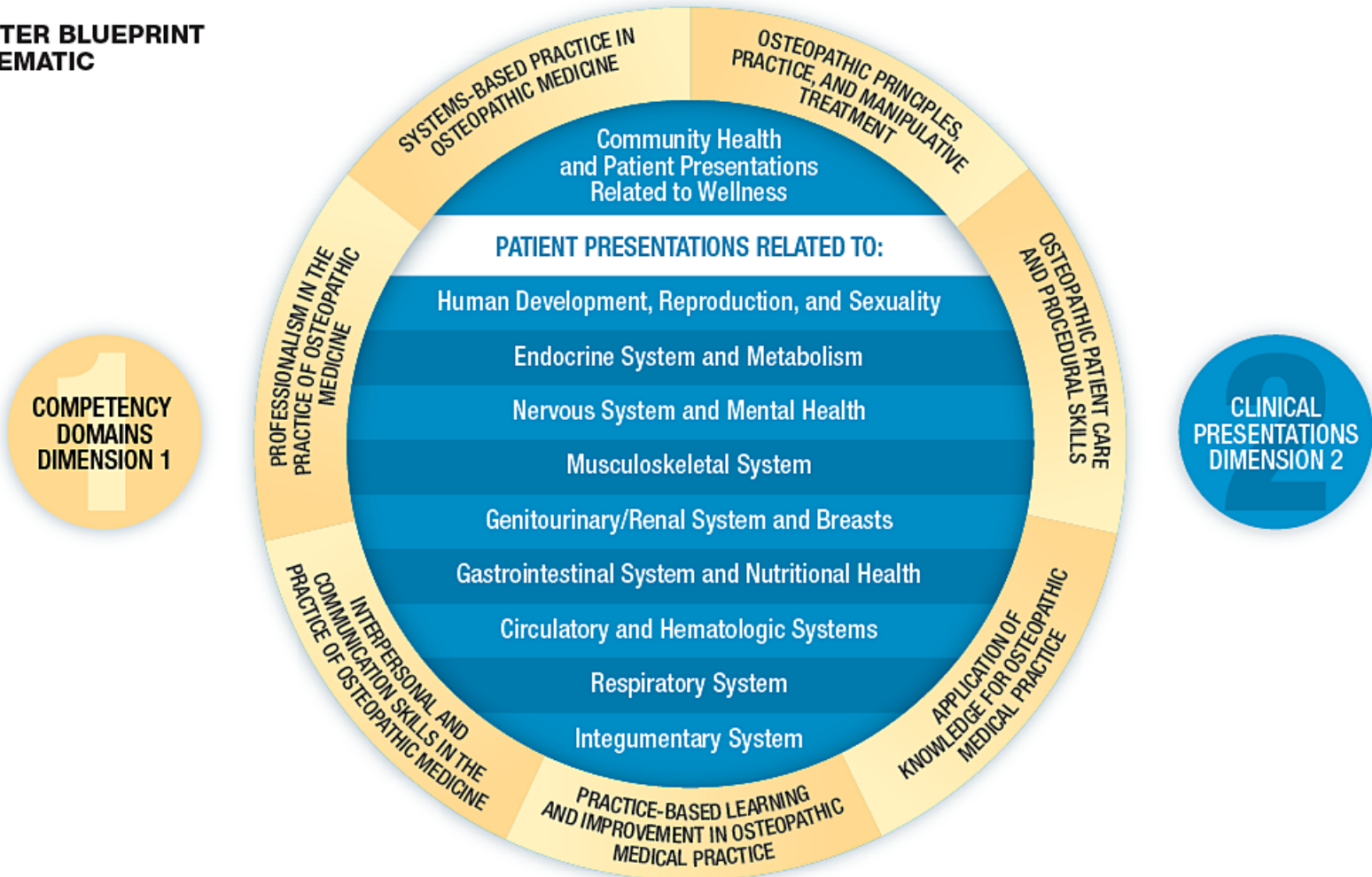


COMLEX-USA EXAMINATION PROGRAM			
LEVEL 1	LEVEL 2-CE	LEVEL 2-PE	LEVEL 3
One-day computer-based examination 400 predominantly multiple-choice test questions	One-day computer-based examination 400 predominantly multiple-choice test questions	One-day 12 station standardized patient-based performance evaluation of fundamental clinical skills	Two-day computer-based examination 500-550 MCQs, clinical decision-making cases, and other novel test item formats (up to 30 additional clinical cases)
MAY 2019	IMPLEMENTATION TIMELINE		SEPT. 2018
	JUNE 2019	MAR. 2019	

COM STUDENT UPDATE 2017



MASTER BLUEPRINT SCHEMATIC



CONTENT ACROSS THE EXAMINATION SERIES

COMPETENCY DOMAINS: DIMENSION 1		MINIMUM
1	Osteopathic Principles, Practice, and Manipulative Treatment	10%
2	Osteopathic Patient Care and Procedural Skills	25%
3	Application of Knowledge for Osteopathic Medical Practice	30%
4	Practice-Based Learning and Improvement in Osteopathic Medical Practice	5%
5	Interpersonal and Communication Skills in the Practice of Osteopathic Medicine	10%
6	Professionalism in the Practice of Osteopathic Medicine	5%
7	Systems-Based Practice in Osteopathic Medicine	5%
CLINICAL PRESENTATIONS: DIMENSION 2		MINIMUM
1	Community Health and Patient Presentations Related to Wellness	12%
2	Patient Presentations Related to: Human Development, Reproduction, and Sexuality	5%
3	Patient Presentations Related to: Endocrine System and Metabolism	5%
4	Patient Presentations Related to: Nervous System and Mental Health	10%
5	Patient Presentations Related to: Musculoskeletal System	13%
6	Patient Presentations Related to: Genitourinary/Renal System and Breasts	5%
7	Patient Presentations Related to: Gastrointestinal System and Nutritional Health	10%
8	Patient Presentations Related to: Circulatory and Hematologic Systems	10%
9	Patient Presentations Related to: Respiratory System	10%
10	Patient Presentations Related to: Integumentary System	5%

TEST SPECIFICATIONS FOR EACH EXAMINATION

DIMENSION 1: COMPETENCY DOMAINS		TEST SPECIFICATIONS PERCENTAGES				
		Level 1	Level 2-CE	Level 2-PE HUM* BM/BM*	Level 3	Series Minimum
1	Osteopathic Principles, Practice, and Manipulative Treatment	11%	10%	0% 15%	10%	10%
2	Osteopathic Patient Care and Procedural Skills	6%	30%	0% 25%	40%	25%
3	Application of Knowledge for Osteopathic Medical Practice	60%	26%	0% 15%	17%	30%
3.1	Foundational Biomedical Sciences Knowledge Base	75%	25%		10%	
4	Practice-Based Learning and Improvement in Osteopathic Medical Practice	5%	7%	0% 5%	8%	5%
5	Interpersonal and Communication Skills in the Practice of Osteopathic Medicine	3%	5%	60% 20%	3%	10%
6	Professionalism in the Practice of Osteopathic Medicine	3%	7%	30% 5%	6%	5%
7	Systems-Based Practice in Osteopathic Medicine	2%	5%	0% 5%	6%	5%
DIMENSION 2: CLINICAL PRESENTATIONS		Level 1	Level 2-CE	Level 2-PE	Level 3	Series Minimum
1	Community Health and Patient Presentations related to Wellness	12%	12%	14%	12%	12%
2	Patient Presentations Related to Human Development, Reproduction, and Sexuality	5%	5%		5%	5%
3	Patient Presentations Related to Endocrine System and Metabolism	5%	5%		5%	5%
4	Patient Presentations Related to Nervous System and Mental Health	10%	10%	14%	10%	10%
5	Patient Presentations Related to Musculoskeletal System	13%	13%	14%	13%	13%
6	Patient Presentations Related to Genitourinary/Renal System and Breasts	5%	5%		5%	5%
7	Patient Presentations Related to Gastrointestinal System and Nutritional Health	10%	10%	14%	10%	10%
8	Patient Presentations Related to Circulatory and Hematologic Systems	10%	10%	14%	10%	10%
9	Patient Presentations Related to Respiratory System	10%	10%	14%	10%	10%
10	Patient Presentations Related to Integumentary System	5%	5%		5%	5%

*HUM: Humanistic Domain | BM/BM: Biomedical/Biomechanical Domain

COM STUDENT UPDATE 2017



Dimension 1

COMPETENCY DOMAINS: DIMENSION 1		MINIMUM
1	Osteopathic Principles, Practice, and Manipulative Treatment	10%
2	Osteopathic Patient Care and Procedural Skills	25%
3	Application of Knowledge for Osteopathic Medical Practice	30%
4	Practice-Based Learning and Improvement in Osteopathic Medical Practice	5%
5	Interpersonal and Communication Skills in the Practice of Osteopathic Medicine	10%
6	Professionalism in the Practice of Osteopathic Medicine	5%
7	Systems-Based Practice in Osteopathic Medicine	5%

COM STUDENT UPDATE 2017



Fundamental Osteopathic Medical Competency Domains 2016



Guidelines for Assessment for Osteopathic Medical Licensure
and the Practice of Osteopathic Medicine

MASTER BLUEPRINT EXAMPLE: COMPETENCY DOMAIN 3



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NATIONAL BOARD OF OSTEOPATHIC MEDICAL EXAMINERS

2017

overview

Osteopathic physicians must demonstrate the understanding and application of established and evolving principles of foundational biomedical and clinical sciences integral to the practice of patient-centered osteopathic medical care. As with the other competency domains, application of knowledge is about ability (ie, knowledge put into action). Cognitive and other learning science theorists explain that the acquisition of declarative knowledge in biomedical and clinical sciences, the conscious knowledge that something is the case, progressively transforms into procedural knowledge (knowing how to do something). This gradual transformation leads the osteopathic physician to develop a problem and task-specific knowledge base that is integrated across individual disciplines. It is this knowledge base that provides a foundation for competent patient-centered osteopathic medical care. An osteopathic physician with a fluent knowledge base in foundational biomedical and clinical sciences, for example, would be able to explain principles of health, disease, and diagnostic and treatment options to patients. Included in this knowledge base is the articulation of core scientific and clinical practice principles relevant to osteopathic medical practice (eg, health and the body's innate capacity to heal, differential diagnoses, disease etiologies, indications and contraindications, assessment of the risks and benefits of diagnostic and therapeutic interventions).

Knowledge fluency is fundamental to a generalist osteopathic physician's competency to practice osteopathic medicine. Knowledge fluency is demonstrated by the ability to efficiently interpret, process, and skillfully apply principles of foundational biomedical and clinical sciences in a timely manner. Also important to an osteopathic physician's knowledge competency is the ability to formulate appropriate clinical questions, retrieve evidence to inform patient care, acquire additional and evolving knowledge for lifelong learning, and apply this knowledge for continuous practice improvement. Demonstration of the understanding and application of core knowledge is fundamental to the incorporation of new knowledge. Continuous quality improvement, however, is primarily addressed in the practice-based learning and improvement domain (Domain 4).

As osteopathic medical knowledge provides the foundation for many physician competency domains, considerable overlap exists between this competency domain and the other six. Testing concepts are mapped here when the primary component being assessed is application of knowledge (eg, the knowledge of the scientific understanding of mechanisms of action; molecular and macro systems including biomolecules, molecules, cells, and organs; origins of disease processes; why certain diagnostic tests and treatments are used).

The principles that underlie the human condition, including its biologic complexity, genetic diversity, homeostatic mechanisms, structure-function interrelationships, development, and interactions of systems and environmental influences, guide the osteopathic physician in the understanding of health and the diagnosis and treatment of disease. While these foundational principles often cross biomedical science and clinical disciplines in the practice of osteopathic medicine, they are mapped here for primary characterization.

REQUIRED ELEMENT 3.1
FOUNDATIONAL BIOMEDICAL SCIENCES KNOWLEDGE
BASE

REQUIRED ELEMENT 3.2
CLINICAL SCIENCES KNOWLEDGE BASE

REQUIRED ELEMENT 3.3
CONTINUOUS KNOWLEDGE-BASE DEVELOPMENT AND
LIFELONG LEARNING

REQUIRED ELEMENT 3.1**FOUNDATIONAL BIOMEDICAL SCIENCES
KNOWLEDGE BASE****DEFINITION**

Given the various clinical presentations common and important to osteopathic medical practice and described herein, the osteopathic physician must be able to demonstrate the application of knowledge of clinically applicable foundational biomedical science concepts related to patient care and health, homeostasis, structure-function relationships, prevention, and disease, and do so in an integrated, patient centered, osteopathic manner.

MEASURED OUTCOMES

The osteopathic physician must effectively apply clinically relevant foundational biomedical science knowledge related to:

- the molecular, biochemical, tissue, and cellular bases of health and disease.
- medical genetics.
- the anatomic and structural bases of health and disease.
- the physiologic and pathologic bases of health and disease.
- the microbiologic and immunologic bases of health and disease.
- pharmacologic principles and pharmacotherapeutics in health and disease.
- neurosciences.
- biopsychosocial sciences.
- epidemiology and population sciences.
- medicolegal and governing regulatory principles in medical practice.

REQUIRED ELEMENT 3.2**CLINICAL SCIENCES KNOWLEDGE BASE****DEFINITION**

Given the various clinical presentations common and important to osteopathic medical practice and described herein, the osteopathic physician must be able to demonstrate the application of knowledge of established and evolving clinical science concepts related to patient care and health, homeostasis, structure-function relationships, prevention, and disease and do so in an integrated, patient-centered, osteopathic manner.

MEASURED OUTCOMES

The osteopathic physician must effectively apply clinical science knowledge related to disciplines pertaining to the primary-care-oriented focus of osteopathic medical practice, including generalist concepts from the following specialties:

- emergency and acute care medicine.
- family medicine.
- general internal medicine and its subspecialties (eg, allergy/immunology, cardiology, endocrinology, gastroenterology, hematology, infectious diseases, nephrology, oncology, pulmonary medicine, rheumatology).
- preventive and occupational medicine.
- neurology.
- obstetrics and gynecology.
- osteopathic neuromusculoskeletal medicine.
- pain medicine, hospice, and palliative care.
- physical medicine and rehabilitation.
- pediatrics and adolescent medicine.
- geriatrics.

- psychiatry and behavioral medicine.
- general surgery and its subspecialties (eg, colon and rectal, neurologic, pediatric, plastic, thoracic, urologic, and vascular).
- orthopedics and sports medicine.
- anesthesiology.
- otorhinolaryngology and ophthalmology.
- radiology.
- pathology.
- dermatology.
- other clinical discipline areas relevant to primary care in osteopathic medicine.

REQUIRED ELEMENT 3.3**CONTINUOUS KNOWLEDGE-BASE
DEVELOPMENT AND LIFELONG LEARNING****DEFINITION**

The osteopathic physician must demonstrate that he/she acquires and sustains knowledge of applicable foundational biomedical and clinical science concepts appropriate for clinical practice for lifelong learning, including, as applicable, at the point of care.

MEASURED OUTCOMES

The osteopathic physician must demonstrate that he/she:

- incorporates new developments in foundational biomedical and clinical science knowledge relevant to the practice of osteopathic medicine into his/her practice.

COMLEX-USA MASTER BLUEPRINT 2018-2019



Dimension 2

CLINICAL PRESENTATIONS: DIMENSION 2		MINIMUM
1	Community Health and Patient Presentations Related to Wellness	12%
2	Patient Presentations Related to: Human Development, Reproduction, and Sexuality	5%
3	Patient Presentations Related to: Endocrine System and Metabolism	5%
4	Patient Presentations Related to: Nervous System and Mental Health	10%
5	Patient Presentations Related to: Musculoskeletal System	13%
6	Patient Presentations Related to: Genitourinary/Renal System and Breasts	5%
7	Patient Presentations Related to: Gastrointestinal System and Nutritional Health	10%
8	Patient Presentations Related to: Circulatory and Hematologic Systems	10%
9	Patient Presentations Related to: Respiratory System	10%
10	Patient Presentations Related to: Integumentary System	5%

CLINICAL PRESENTATIONS represent the manner in which a particular patient, group of patients, or community present(s) to osteopathic physicians. These are high-frequency, high-impact categories based on evidence from osteopathic medical practice and are further categorized as topics.

Clinical presentations may include, but are not limited to, presentations of patients across all relevant age categories, from special populations, and in varied clinical settings, and the following ways in which patients present for osteopathic medical care:

1. Community Health and Patient Presentations Related to Wellness

PATIENT PRESENTATIONS RELATED TO

2. Human Development, Reproduction, and Sexuality

PATIENT PRESENTATIONS RELATED TO

3. Endocrine System and Metabolism

PATIENT PRESENTATIONS RELATED TO

4. Nervous System and Mental Health

PATIENT PRESENTATIONS RELATED TO

5. Musculoskeletal System

PATIENT PRESENTATIONS RELATED TO

6. Genitourinary/Renal System and Breasts

PATIENT PRESENTATIONS RELATED TO

7. Gastrointestinal System and Nutritional Health

PATIENT PRESENTATIONS RELATED TO

8. Circulatory and Hematologic Systems

PATIENT PRESENTATIONS RELATED TO

9. Respiratory System

PATIENT PRESENTATIONS RELATED TO

10. Integumentary System

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 4.1 ANXIETY
- 4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS
- 4.3 COGNITIVE DISTURBANCES
- 4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION
- 4.5 LIFE ADJUSTMENT AND STRESSORS
- 4.6 DISTURBANCES OF THE SPECIAL SENSES
- 4.7 HEADACHE
- 4.8 SPEECH AND LANGUAGE DISTURBANCES
- 4.9 MOVEMENT DISTURBANCES
- 4.10 SEIZURES
- 4.11 SENSORY DISTURBANCES AND PAIN
- 4.12 SLEEP DISTURBANCES
- 4.13 SUBSTANCE ABUSE
- 4.14 NERVOUS SYSTEM TRAUMA
- 4.15 WEAKNESS AND PARALYSIS
- 4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH
- 4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH

The Guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:

abuse and neglect, child or elder • acalculia • action tremors • adjustment disorder • agnosia • agraphia • akinesia • amyotrophic lateral sclerosis • anomia • anxiety disorders, including generalized anxiety, anxiety secondary to another medical condition, anxiety secondary to another mental disorder or induced by illicit, prescribed, or over-the-counter drugs or other substances • apraxia • arteriovenous malformations • astereognosia (tactile agnosia) • athetosis • atrophy of extremity muscles • ballism (ballismus) • behavioral abnormalities, including avoidance, dependency, and obsessive-compulsive disorder • bipolar and related disorders • brain tumors, including sellar/pituitary masses, neoplasms, and metastatic tumors; paraneoplastic syndromes • cerebral concussion/mild traumatic brain injury • cerebral palsy • cerebral vascular disorders, including aneurysms and vasculitis (eg, temporal arteritis) • cerebrospinal fluid abnormalities • chalazion • chronic fatigue syndrome, fibromyalgia • cognitive impairments, including altered level of consciousness, mild cognitive impairment, amnesia, coma, confusion, delirium, disorientation, subcortical and cortical dementia (eg, Alzheimer disease, Huntington disease, Parkinson disease) • cogwheel rigidity • cyclothymic disorder • depressive disorders • disruptive behaviors, including attention deficit/hyperactivity disorder, pediatric anxiety (eg, disruptive mood dysregulation disorder, selective mutism, separation anxiety) • dizziness and true vertigo, including peripheral or central vestibular dysfunction, benign paroxysmal positional vertigo, labyrinthitis, Meniere disease) • dysautonomias • dyskinesias • dystonias • ear and hearing disorders, including acoustic neuroma and other neoplasms; conductive, sensorineural, or neurogenic hearing loss; presbycusis; otosclerosis; ototoxic drugs; Meniere disease •



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

4.1 ANXIETY**4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS****4.3 COGNITIVE DISTURBANCES****4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION****4.5 LIFE ADJUSTMENT AND STRESSORS****4.6 DISTURBANCES OF THE SPECIAL SENSES****4.7 HEADACHE****4.8 SPEECH AND LANGUAGE DISTURBANCES****4.9 MOVEMENT DISTURBANCES****4.10 SEIZURES****4.11 SENSORY DISTURBANCES AND PAIN****4.12 SLEEP DISTURBANCES****4.13 SUBSTANCE ABUSE****4.14 NERVOUS SYSTEM TRAUMA****4.15 WEAKNESS AND PARALYSIS****4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS
SYSTEM AND MENTAL HEALTH****4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING
RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH**

The Guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:

eating and feeding disorders (eg, anorexia nervosa, bulimia nervosa, pica, binge-eating) • elimination disorders (eg, enuresis, encopresis) • encephalopathies (eg, Reye Syndrome, Wernicke-Korsakoff encephalopathy, shock) • epidural hematoma • eye and vision disorders, including discharge, pain, lacrimal drainage, blepharitis, iritis, subconjunctival hemorrhage, hordeolum, floaters, cataracts, glaucoma, red eye(s), eye trauma (eg, orbital floor fracture), diplopia, amblyopia, nystagmus, strabismus, refractive error, ptosis, optical migraine, photophobia, blurred vision (eg, acute narrow-angle glaucoma), unilateral and bilateral vision loss, acute vision loss (eg, amaurosis fugax [temporary blindness]) • fasciculation • gambling disorder • gender dysphoria • grieving and normal bereavement • head and spinal cord injury • headache (acute and chronic), including cluster, migraine, tension; episodic and constant; unilateral and bilateral; primary and secondary, with and without red flag symptoms (eg, aura); trigeminal autonomic cephalgia; headache attributed to a substance or its withdrawal; headache from trauma/traumatic brain injury • hoarding disorder • Huntington disease • hypomania • infantile and pediatric seizures and spells • infections (eg, systemic, central nervous system, sinusitis, encephalitis, meningitis) • learning disorders • malingering • mood disorders, including depressed mood, elevated mood, elevated mood with or without depressed mood, mania, cyclothymia • mouth and jaw disorders, including taste disorders, mastication pain • movement disorders, including voluntary and involuntary abnormal movements, such as cerebellar and sensory ataxias, chorea, and other hyperkinetic (eg, Tourette syndrome) and bradykinetic (eg, Parkinson disease) disorders and diseases • myoclonus • nerve-, muscle-, and pain-related syndromes, including complex regional pain syndrome, post-herpetic neuralgia, meralgia paresthetica, →

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 4.1 ANXIETY
- 4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS
- 4.3 COGNITIVE DISTURBANCES
- 4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION
- 4.5 LIFE ADJUSTMENT AND STRESSORS
- 4.6 DISTURBANCES OF THE SPECIAL SENSES
- 4.7 HEADACHE
- 4.8 SPEECH AND LANGUAGE DISTURBANCES
- 4.9 MOVEMENT DISTURBANCES
- 4.10 SEIZURES
- 4.11 SENSORY DISTURBANCES AND PAIN
- 4.12 SLEEP DISTURBANCES
- 4.13 SUBSTANCE ABUSE
- 4.14 NERVOUS SYSTEM TRAUMA
- 4.15 WEAKNESS AND PARALYSIS
- 4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH
- 4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH

The Guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:

compression or diabetic neuropathy, spinal stenosis, Guillain-Barré syndrome, multiple sclerosis, Bell palsy, myasthenia gravis • neurocognitive disorders • neurologic gait disorders (eg, hemiplegic gait, spastic diplegic gait, neuropathic gait, myopathic gait, Parkinsonian gait, choreiform gait, ataxic [cerebellar] gait, sensory gait) • obsessive-compulsive and related disorders (eg, body dysmorphic disorder, trichotillomania, excoriation disorder) • olfactory disorders • pain, chronic nonmalignant • pain, neuropathic, nociceptive, mixed, sympathetic • panic disorder, phobias (eg, specific phobias, agoraphobia), social anxiety disorder • paraphilias • personality disorders (eg, paranoid, schizoid, schizotypal, antisocial, histrionic, borderline, narcissistic) • postpartum depression or psychosis • premenstrual dysphoric disorder, dissociative disorders • psychogenic and illicit, prescribed, or over-the-counter drug or substance-induced seizures • psychotic disorders, hallucinations, delusions, and disturbances of perception • psychotic disorders, brief, including schizophreniform disorder, schizophrenia spectrum, and other psychotic disorders • psychotic disorders, specific, including delusional disorders; shared psychotic disorder; psychosis secondary to illicit, prescribed, and over-the-counter drugs and substances; psychosis secondary to medical conditions • pupillary abnormalities (eg, isocoria, anisocoria, mydriasis, miotic pupils) • relational problems • resting tremors • seizures, atonic or convulsive, including epilepsies and secondary seizures • seizures, including focal and generalized • sleep disorders, including obstructive sleep apnea, somnambulism, insomnia, excessive daytime sleepiness, sleep-wake disorders, narcolepsy, night terrors, parasomnias • somatic symptoms and related disorders (eg, conversion disorder, factitious disorders, psychological factors affecting other conditions) • →

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 4.1 ANXIETY
- 4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS
- 4.3 COGNITIVE DISTURBANCES
- 4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION
- 4.5 LIFE ADJUSTMENT AND STRESSORS
- 4.6 DISTURBANCES OF THE SPECIAL SENSES
- 4.7 HEADACHE
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- 4.9 MOVEMENT DISTURBANCES
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- 4.14 NERVOUS SYSTEM TRAUMA
- 4.15 WEAKNESS AND PARALYSIS
- 4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH
- 4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH

The Guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:

speech/language-related disorders, including alexia, aphasia (fluent and nonfluent), dysphasia, and dysarthria • stereotypy • stroke (eg, transient ischemic attack, hemorrhagic stroke) • subarachnoid hemorrhage • subdural hematoma • substance-related and addictive disorders, including oral and intravenous abuse of tobacco, alcohol, opioids, cocaine, and cannabis; intoxication; withdrawal symptoms (eg, delirium tremens) • suicidal ideation • tactile disturbances, including sensory loss, numbness, vibration/temperature/proprioception loss, tingling, and paresthesia • tics and tic disorders (eg, Tourette syndrome) • tinnitus, unilateral or bilateral, with or without hearing loss, including tinnitus secondary to ototoxic medications, tinnitus with somatic triggers (eg, labyrinthitis, Meniere disease) • trauma and stressor-related disorders (eg, adjustment disorders, post-traumatic stress disorder) • vascular and inflammatory masses • weakness and paralysis, focal (eg, hemiplegia); postural instability or tremors

CONSTITUTIONAL SIGNS AND SYMPTOMS

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

PHYSICAL EXAM FINDINGS

abdominal reflex • Chvostek test • clonus, Glasgow coma score, mini-cog testing • corneal reflex, nystagmus • cranial nerve examinations • cremasteric reflex • decreased muscle tone • dysdiadochokinesia • fundoscopic findings and cup, disc ratios • heel to shin test • Hoffman reflexes • →

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

4.1 ANXIETY**4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS****4.3 COGNITIVE DISTURBANCES****4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION****4.5 LIFE ADJUSTMENT AND STRESSORS****4.6 DISTURBANCES OF THE SPECIAL SENSES****4.7 HEADACHE****4.8 SPEECH AND LANGUAGE DISTURBANCES****4.9 MOVEMENT DISTURBANCES****4.10 SEIZURES****4.11 SENSORY DISTURBANCES AND PAIN****4.12 SLEEP DISTURBANCES****4.13 SUBSTANCE ABUSE****4.14 NERVOUS SYSTEM TRAUMA****4.15 WEAKNESS AND PARALYSIS****4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS
SYSTEM AND MENTAL HEALTH****4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING
RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH**

The Guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:

increased muscle tone • light reflex • micro-aneurysms • mini-mental status examination, ptosis • nuchal rigidity, Kernig sign, Brudzinski sign deep tendon (stretch) reflexes and grading • papilledema, cotton wool spots • plantar (Babinski) reflex • proliferative changes • red reflex • Romberg test • slitlamp exam findings • tuning-fork testing • visual-acuity testing

LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING

angiography • cerebrospinal fluid evaluation • computed tomography imaging • electroencephalography patterns • elevated serum creatine kinase • lab findings, vitamins (eg, B12 deficiency) • magnetic resonance imaging • nuclear medicine imaging • radiography • sonography

LEVEL 1 SAMPLE QUESTION



Competency Domain 3: Application of Knowledge Clinical Presentation 9: Presentations Related to Respiratory System

A 72-year-old male presents to the office with increasing shortness of breath over the past 6 months. He admits to smoking 2 packs of cigarettes per day for 40 years. He denies coughing up blood, fever, or weight loss. Physical examination reveals a chest wall with increased AP diameter and muffled breath sounds in all fields. Clubbing of fingernails is noted. Which of the following will most likely be decreased in his pulmonary function studies?

- A** end-expiratory lung volume
- B** forced expiratory volume in 1 second **
- C** functional residual capacity
- D** residual volume
- E** total lung capacity

LEVEL 2-CE SAMPLE QUESTION



Competency Domain 1: Osteopathic Principles, Practice and OMT Clinical Presentation 5: Presentations Related to Cardiovascular System

After undergoing coronary artery bypass surgery six months ago, a 58-year-old male gradually develops right-sided pain in the upper chest wall. When the patient exerts himself, the pain is exacerbated, but is not excruciating. He denies shortness of breath, palpitations, and lightheadedness. Palpation elicits pain at the right coracoid process and right costochondral articulations. The somatic dysfunction most likely to be present is

- A** long head of biceps spasm
- B** pectoralis minor spasm **
- C** short head of biceps tendinitis
- D** sternocleidomastoid spasm
- E** trigger point at xiphoid

LEVEL 3 SAMPLE QUESTION



Competency Domain 6: Professionalism Clinical Presentation 1: Community Health and Presentations Related to Wellness

An alert and oriented 78-year-old female has become very ill from side effects of treatment for breast cancer metastatic to lung and bone. She has requested to discontinue treatment, but the family wishes to pursue any chance of cure. It is the duty of her physician to

- A** agree with the family since they have the patient's best interests in mind
- B** convince the patient to accept the family's wishes and continue treatment
- C** consider the family's wishes if the patient becomes incompetent
- D** uphold the patient's decision to discontinue treatment **
- E** withhold further treatment until all family conflicts are resolved



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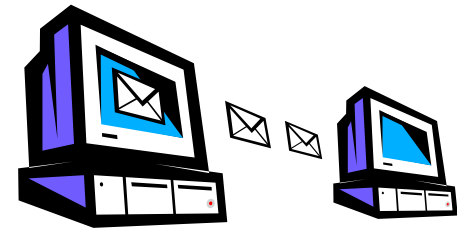
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77%

ACGME Residency
Program Directors Use
COMLEX-USA for DOs
(same as 2012 and
2014 PD Surveys)...



<http://www.nrmp.org/wp-content/uploads/2016/09/NRMP-2016-Program-Director-Survey.pdf>



2016 NRMP Program Director Survey

- 1,435 of 3,599 Total Programs Responded
 - 39.9 Percent Overall Response Rate
 - 22 Specialties + Transitional Year
 - (≥ 10 responses included in report)

- 77 Percent of ACGME Program Directors
 - Reported Using COMLEX-USA for DOs
 - No Change from 2014

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2016 NRMP Program Director Survey

Over 80 percent of ACGME Program Directors Report Using COMLEX-USA Level 1 Scores in 12 Specialties

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Internal Medicine

Neurology

Obstetrics-Gynecology

Pathology

Pediatrics

Physical Medicine &

Rehabilitation

Psychiatry



2016 NRMP Match Osteopathic Outcomes



Charting Outcomes in the Match for U.S. Osteopathic Students and Graduates

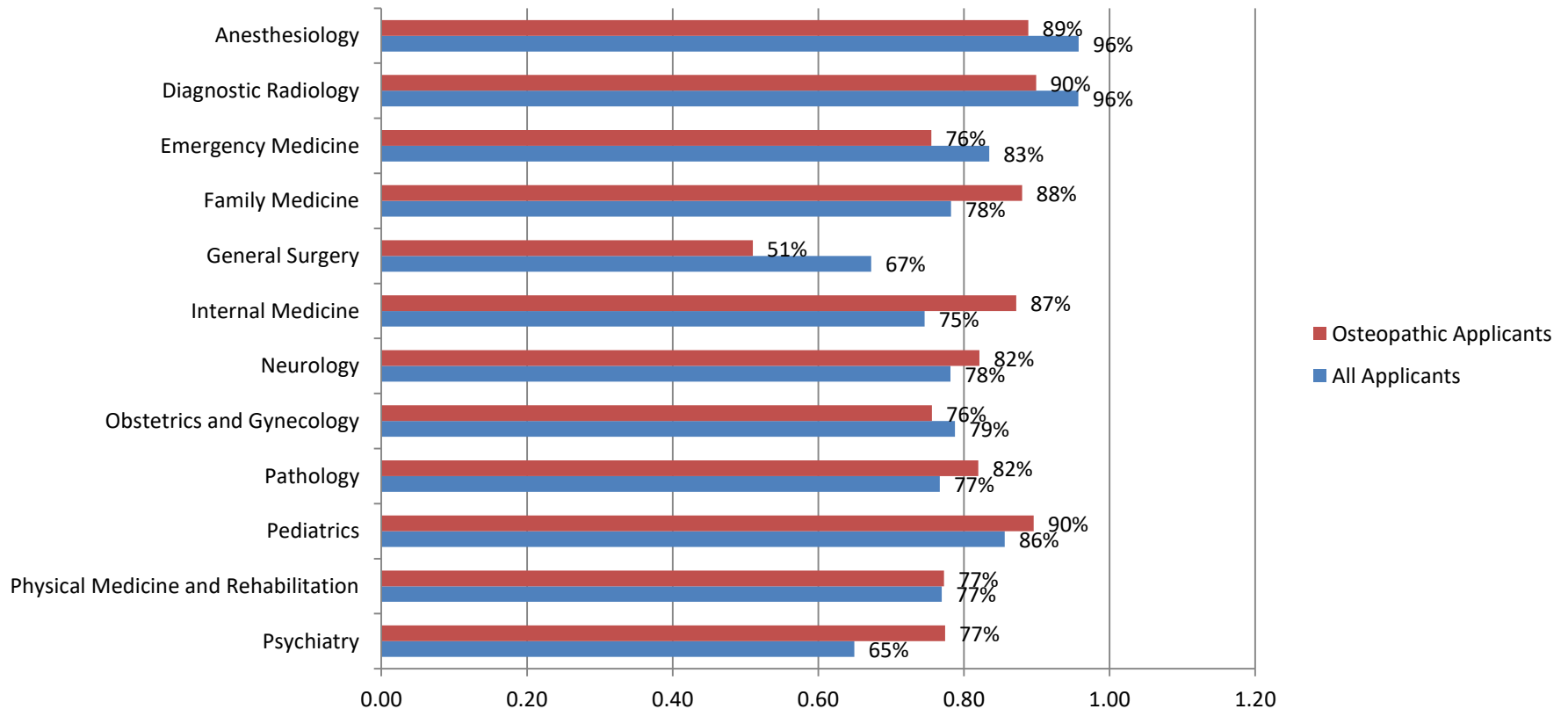
**Characteristics of U.S. Osteopathic Students and Graduates Who
Matched to Their Preferred Specialty in the 2016 Main
Residency Match**

1st Edition

Prepared by:
National Resident Matching Program
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2016 NRMP Osteopathic Match Rates in Top 12 Osteopathic Specialties





“Twitter Feed...”

From ACGME Leaders, PDs, DIOs...

“COMLEX and USMLE are both acceptable to the ACGME. The Single Accreditation System does nothing to alter that. We recognize the important role that COMLEX plays in quality for osteopathic medical education and training.”

Thomas J. Nasca, MD, MACP
Chief Executive Officer, ACGME
2015



“Twitter Feed...”

From ACGME Leaders, PDs, DIOs...

“In contrast to USMLE scores, which are difficult to interpret, and for which there is no published mean, COMLEX scores are easy to interpret. Additionally, the NBOME website provides a formula to convert COMLEX scores into a percentile at the time the examination results are released.”

Paul J. Schenarts, MD

Professor of Surgery and Program Director

University of Nebraska College of Medicine

Journal of Graduate Medical Education

2014



“Twitter Feed...”

From ACGME Leaders, PDs, DIOs...

“COMLEX-USA is the gold standard that I use as a program director for evaluating applications for our residency program”

Joseph A. Greco, MD

Family Medicine Residency Program Director and Designated Institutional Official (DIO)

Bryn Mawr Hospital, Pennsylvania

2015



Initiatives to Reach Residency Program Directors

- Website, “COMLEX-USA for PDs”, Annual Report to PDs
- Organization of Program Director Associations/Council of Medical Specialty Societies- presentations twice annually
- ACGME Annual Meeting Exhibit, Presentation at ACGME Annual Educational Conference 2017; ACGME on Board’s Liaison Committee; Outreach to AODME
- Research: presentations and publications for PDs; e.g. CORD (EM), SAEM (EM), ACP (IM), *JAOA*, *JGME*, *Academic Med*, etc.
- ERAS links regarding interpretation of COMLEX-USA scores
- Smart Phone App with Percentile Converter
- Grass-roots efforts – **DOs and Students have a key role!**



Predictive Validity and Score Concordance

O'Neill, Thomas R. PhD; Peabody, Michael R. PhD; Song, Hao PhD. The Predictive Validity of the National Board of Osteopathic Medical Examiners' COMLEX-USA Examinations With Regard to Outcomes on American Board of Family Medicine Examinations. *Academic Medicine* (November 2016)

- *Evidence was found that the COMLEX-USA can assist family medicine residency program directors in predicting later resident performance on the ABFM's ITE and MC-FP, which is becoming increasingly important as graduate medical education accreditation moves toward a single aligned model*



Predictive Validity and Score Concordance

Sandella, Jeanne M., DO, Gimpel, John R., DO, MEd, Smith, Larissa L., PhD, and Boulet, John R., PhD. The Use of COMLEX-USA and USMLE for Residency Applicant Selection. *Journal of Graduate Medical Education* (July 2016)

- *The comparability of performance is useful in further validating both examinations in context of allopathic and osteopathic students “crossing over” into their choice of training programs.*



Important Take-Home Messages

- Register/Schedule Early; Prepare well in advance of the test – most importantly by engaging fully in COM curriculum
- Avoid “irregular conduct” or “unprofessional conduct” at all costs – this could significantly impact your career (*Bulletin of Information*)
- Be Proactive: Provide information about COMLEX-USA to the uninformed
- Scoring FAQs, Tutorials, Video Programs and other resources are on NBOME website: www.nbome.org

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assuring enhanced patient protection and the
distinctiveness of YOUR chosen profession

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