Newer Approaches to Medical Student Assessments

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International Association of Medical Science Educators (IAMSE) Audio Series– February 27, 2014

Aligning Assessment with Curriculum

Customized Assessment Services
The Global Evaluation Management System

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National Board of Medical Examiners®

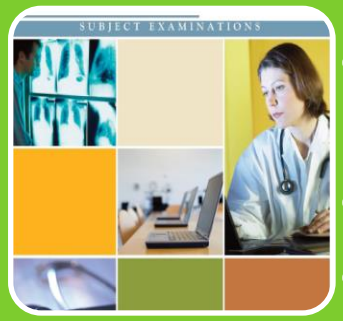
NBME®

Overview

- Introduction to NBME:
  - Customized Assessment Services (CAS)
  - Global Evaluation Management System (GEMS®)
- Fast facts about each platform
- Examples of how each online tool can be used to support creative assessment planning
- Future directions for CAS and GEMS

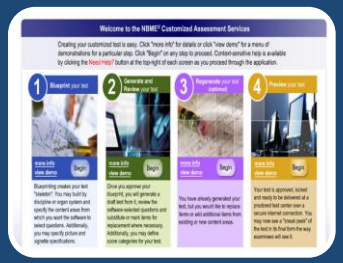
NBME Assessments for Medical Education

Subject Examination Program



- Discipline-based basic and clinical science exams
- Comprehensive Basic Science
- Comprehensive Clinical Science
- Advanced Clinical Exams

Online Platforms for Creating, Managing and Delivering Exams



- Customized Assessment Services
- Global Evaluation Management System

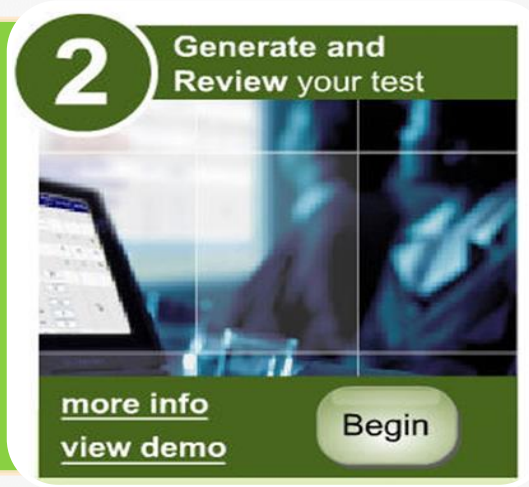
NBME®

Key Features of CAS

- Online tests customized to fit the curriculum
- Secure pool of 10,000+ items commonly taught in basic science coursework
- Detailed test specifications using USMLE® Step 1 content hierarchy
- 31 NBME pre-designed organ system blueprints to fit integrated courses
- Customizable score reporting categories
- Item analysis group statistics provided for comparison with USMLE Step 1 reference group
- Online review of item analysis statistics along with full item text

Building a Customized Test

- Drill down to specific content areas using Step 1 hierarchy
- Set target # of items
- Set image specifications
- Set vignette specifications

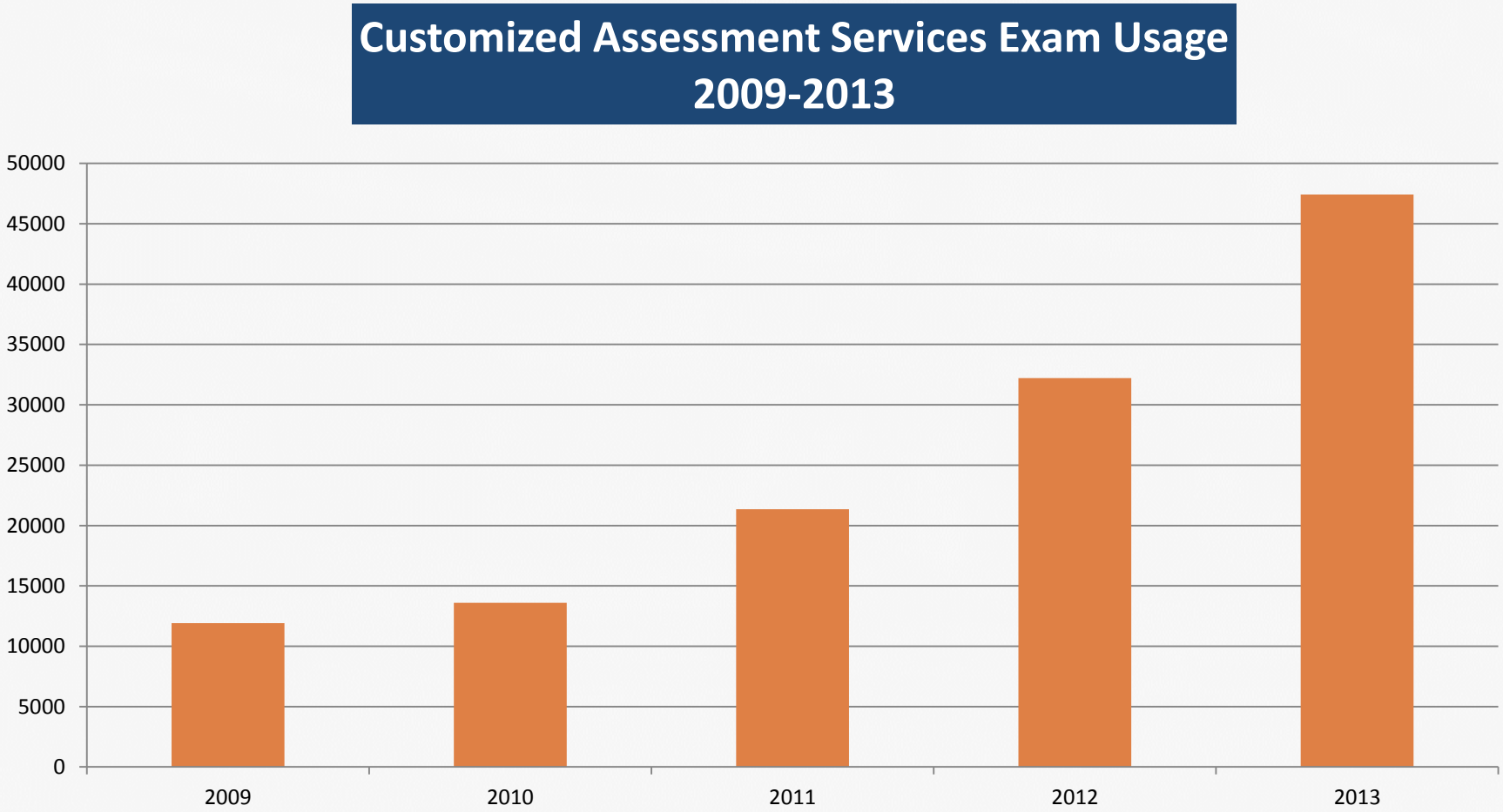


- Review items in each topic area from draft test
- Keep or replace items from overage provided
- Set reportable score categories

Who Uses CAS?

- Currently 79 institutions
  - 68 allopathic
  - 2 osteopathic
  - 9 international
- Includes 11 of the 16 schools accredited by the LCME since 2007
- 350+ faculty have access to the system

CAS Growth Since 2009



How is CAS Used?

- Exams have been created for:
  - integrated courses
  - end-of-course assessment
  - end-of-year evaluations
  - problem-based learning
  - progress testing at set intervals
  - other educational objectives
- In 2013, 350 customized tests were created and administered.

CAS Benefits – Institutions

- Assessments aligned with curriculum
- Item bank that includes multi-disciplinary clinical vignettes
- Possible contribution to overall improvement in USMLE Step 1 performance
- Customized student and school reports to assess student learning and curriculum

CAS Benefits - Faculty

- Exposure to carefully vetted high-quality items
- Use of items that assess students' ability to apply their knowledge
- Structured approach to creating a test blueprint
- Time saver - more efficient than writing own items

CAS Benefits - Students

- More exposure to and practice with USMLE item types
- Access to high quality items that assess application of knowledge
- Benchmarking against other students in testing group
- Feedback identifying areas of strength and weakness

Innovative Uses of CAS

Case Western Reserve University School of Medicine
Cumulative Achievement Test (CAT)

- Year 1 and Year 2 curriculum: *The Foundations of Medicine and Health*
  - Six multi-discipline integrated blocks
  - After initial block, the remaining five comprise basic science education and are integrated across entire biological systems complemented by:
    - Clinical immersion experiences
    - Early contact with patients
    - Simulated clinical experiences

CAT at Case Western

- Medical knowledge judged primarily through essay exams in order to drive thinking and learning, ***but***
  - Recognize that experience with MCQs is important for licensure testing purposes
    - local MCQ exams are developed
    - Cumulative Achievement Tests are built using CAS to assess retention of basic science across continuum
      - administered at end of Blocks 2 through 5

Foundations of Medicine and Health

Year 1

July			May
Becoming a Doctor Block 1 (5 Weeks) Population Health, Epidemiology, Biostatistics, Bioethics, Health Disparities Field Experiences Assessment Week	**The Human Blueprint** Block 2 (11 Weeks) Endocrinology, Reproduction, Development, Genetics, Molecular Biology, Cancer Biology Clinical Immersion Week Assessment Week	**Food to Fuel** Block 3 (11 Weeks) Gastrointestinal, Nutrition, Biochemistry Clinical Immersion Week Assessment Week	**Homeostasis** Block 4 (14 Weeks) Cardiovascular, Pulmonary, Renal, Cell Physiology, and Pharmacology Clinical Immersion Week Assessment Week

Structure (Anatomy, Radiology, and Histopathology)

Foundations of Clinical Medicine (Tuesday Seminars, Communications, Physical Diagnosis, Patient Based Experiences)

Year 2

	August	March
Summer Break (10 Weeks)	**Host Defense & Response** Block 5 (14 Weeks) Immunology, Microbiology, Hematology, Oncology, Infectious Diseases, Rheumatology, Dermatology Clinical Immersion Week Assessment Week	**Cognition, Sensation & Movement** Block 6 (14 Weeks) Neurology, Mind, Musculoskeletal Clinical Immersion Week Assessment Week

Structure (Anatomy, Radiology, & Histopathology)

Foundations of Clinical Medicine

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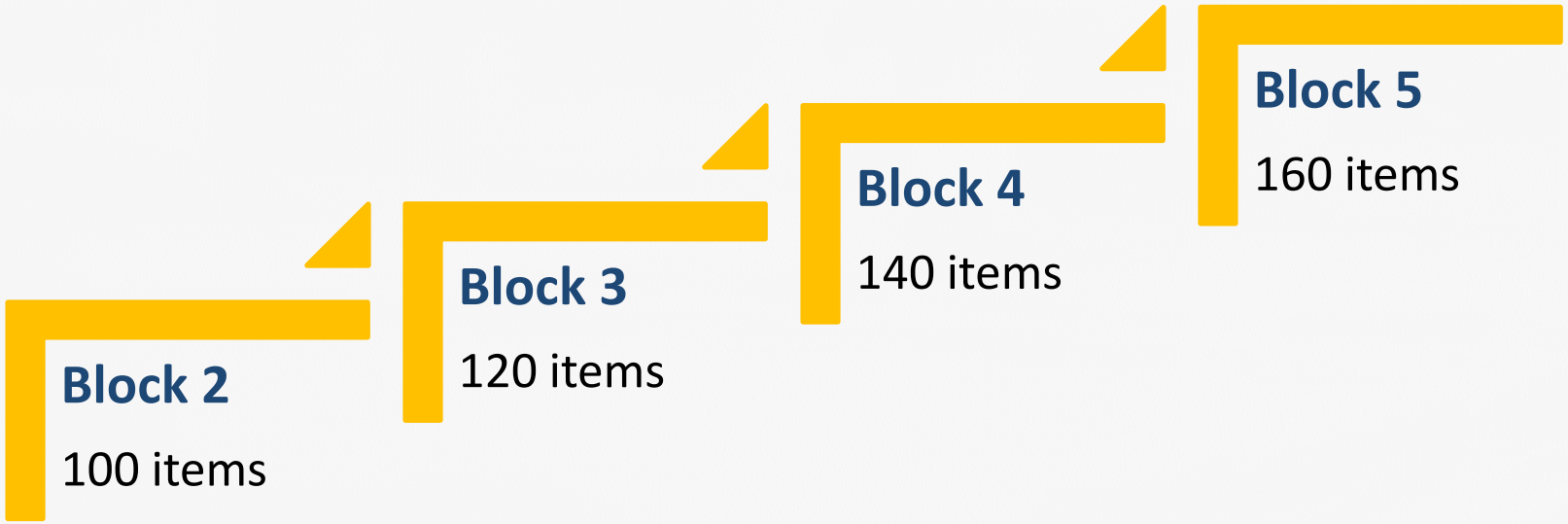
CAT Exam Blueprint

Blocks 2 - 5

Each test has 100 items related specifically to block content *plus* repeated item groups from previous blocks to assess retention.



CAT at Case Western

Test Administration/Feedback

- Tests are low stakes (no grade).
- Students are required to sit for each test.
- Only student and student's advisor see CAT score report.

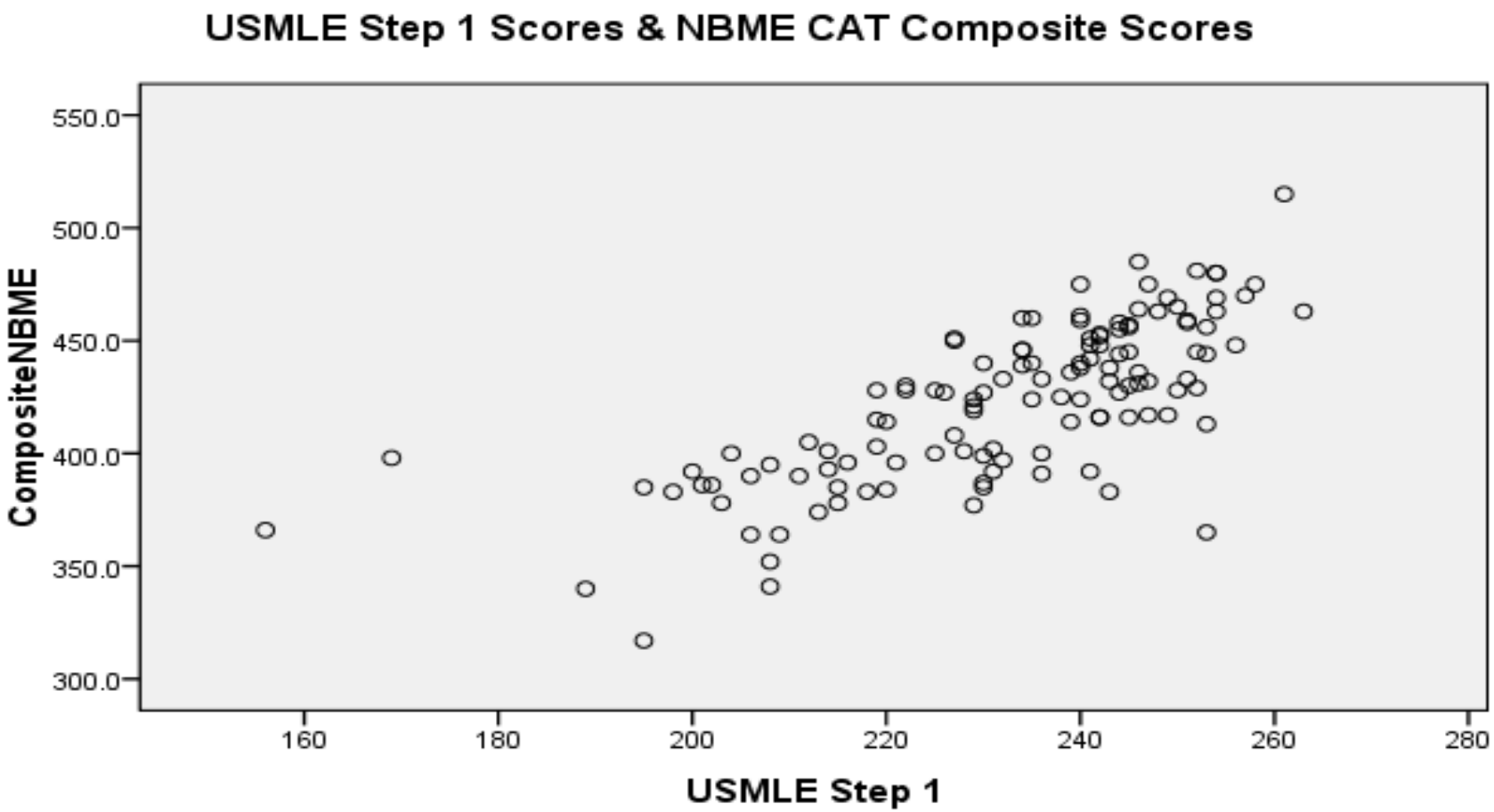
CAT at Case Western

Performance Results

- Able to advise students in bottom quartile, especially those who are “repeaters”
- Aggregate scores on CAT provide the *best* correlation with Step 1 scores

CAT at Case Western

Class of 2010



Innovative Uses of CAS – Future

The University of Texas System's *Transformation in Medical Education* (TIME) Initiative

- Eleven schools (6 colleges, 5 medical schools)
- New model of premedical + medical education
  - True continuum, shortened duration
  - Competency-based
  - Reformulated coursework: shift some biomedical science into college years

Innovative uses of CAS – Future

Approach to Test Development

Need to standardize competencies (including medical knowledge) at the transition from college to medical school→CAS

- Representatives from 11 schools
- Used Step 1 content outline to categorize topics:
  1. Especially appropriate / full coverage expected
  2. Appropriate as examples &/or basic principles
  3. Systematic coverage will occur on medical campus
- Consensus document = CAS exam blueprint
- Faculty group to select items
- Will develop multiple forms

Global Evaluation Management System

An Integrated Platform for Creating, Managing and Delivering Your Examinations

About GEMS

- Introduced in July, 2012 on a limited basis to US medical schools
- Now extended to medical schools and other health profession programs worldwide
- Provided in collaboration with Internet Testing Systems, NBME's technology partner for web-based testing

Key Features

- Collaborative tools for creating, classifying, editing, and reviewing items
- Capability to import items, media and statistics from local item banks
- Limitless item classification
- Support for 49 languages
- Robust data feed component
- iPad test delivery option

Using GEMS to Improve Learning at Albany Medical College

- Curriculum
  - Overall focus on principles of comprehensive care with emphasis on thinking and critical analysis of information
  - Year 1 - basic sciences organized into 9 conceptual/organ system themes
  - Year 2 - themes focus on attention to and understanding of pathophysiology
- Starting January 2013, tests created across both years to assess performance in all themes

Using GEMS to Improve Learning at Albany Medical College

- Pilot conducted in 2013 using Neurosciences theme
- Purpose:
  - To determine where students (especially consistently low 1-2%) were having difficulty studying
  - To identify strategies to strengthen curriculum based on competencies

Using GEMS to Improve Learning at Albany Medical College

- Items were created and multiply tagged according to:
  - Bloom's Taxonomy classification available in GEMS
  - Local learning objectives imported into GEMS
- Test divided equally into thirds with items tagged for remembering, understanding and analyzing
- Classifications used as score categories for student feedback

Using GEMS to Improve Learning Albany Medical College

- Mid-term (Nov 2013) and Final (December 2013) exams administered to 142 and 138 Year 1 students, respectively
- Faculty used feedback to help resource students and improve learning
- Pilot was a success – same approach now being used for all themes
- GEMS testing also being expanded to Physician Assistant Program

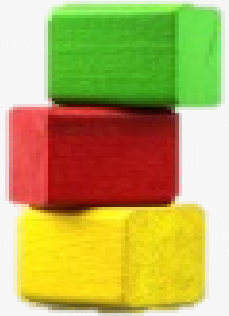
Using GEMS to Improve Learning Albany Medical College

What's Next

- Hope effort translates to better Step 1 scores and improved critical reasoning in clinical years
- Hold twice-yearly combined clerkship/theme director meetings to better assess integration of material
- Use GEMS "editor review" of items feature to enable clinical faculty to:
  - comment on items used in Years 1/2
  - see how material is taught so that concepts can be emphasized in Years 3/4

Where are CAS and GEMS Going?

BUILD A TEST BATTERY



Late March, 2014

- Select one or more subject or CAS exams to be administered to the same group of students in one test session.
- Create CAS “modules” that augment the content covered by subject exam that might be more reflective of local curriculum

Where are CAS and GEMS Going?

- CAS - addition of clinical science items
  - Build exams to assess performance in longitudinal clerkships
  - Expand to other health education programs, such as Physician Assistant or Pharmacy
- New online test management platform that combines both GEMS and CAS
  - Create a single exam using NBME content and your content

Where are CAS and GEMS Going?

- GEMS – add new USMLE item types
  - Analysis and interpretation of literature
    - pharmaceutical ads and research abstracts
  - Integrated cases
    - Unfolding multi-item sets assessing new tasks, e.g., admission orders, differential diagnosis

For More Information:

- Customized Assessment Services: customtest@nbme.org
- Global Evaluation Management System: gems@nbme.org
- Visit the NBME website at www.nbme.org

Thank You!

NBOME

NATIONAL BOARD OF OSTEOPATHIC MEDICAL EXAMINERS

INTERNATIONAL ASSOCIATION OF MEDICAL SCIENCE EDUCATORS (IAMSE)

Bruce P. Bates, D.O., C.M.D.

Senior Vice President for Cognitive Testing

"To protect the public by providing the means to assess competencies for osteopathic medicine and related health care professions"

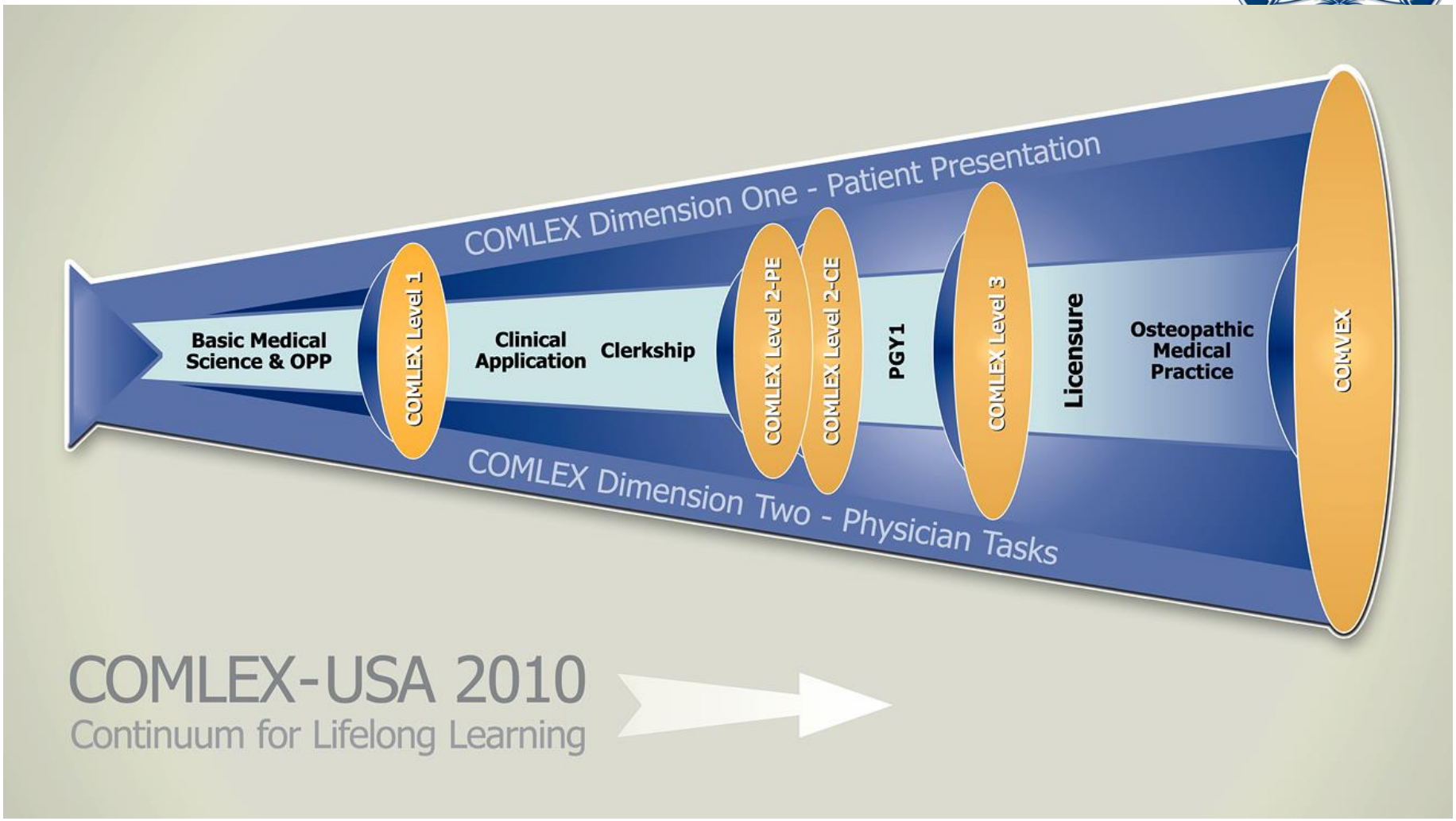
Objectives

- Describe the Mission and Assessment Products of the NBOME
- Describe the construct and purpose and Use of COMAT examinations
- Appreciate the correlations of the psychometrics of COMAT
- Describe Future directions of COMAT
- Outline the potential of a new product – CDM

Mission

To protect the public by providing the means to assess competencies for osteopathic medicine and related healthcare professions

COMLEX-USA



Organizing by Products

COMLEX-USA® National Board of Osteopathic Medical Examiners

COMSAE® National Board of Osteopathic Medical Examiners

COMAT® National Board of Osteopathic Medical Examiners

CLIENTS

OPAIM™ National Board of Osteopathic Medical Examiners

COMVEX® National Board of Osteopathic Medical Examiners

Protecting the Public

The National Board of Osteopathic Medical Examiners is the leading assessment organization for the osteopathic medical profession. Our mission is to protect the public by providing the means to assess competencies for osteopathic medicine and related health care professions. Our COMLEX-USA examination series provides the pathway to licensure for osteopathic physicians in the United States.

quick links

COMLEX-USA

- COMLEX-USA Bulletin of Information
- Score Release Information
- COMLEX-USA Exam Calendar
- Transcripts and Score Reports
- Percentile Score Converter
- Client Registration System Tutorial & Login
- Name Change Requests
- Item Writing
- COMAT
- COMSAE
- National Center for Clinical Skills Testing Travel Information
- NBOME on Facebook

strategic plan

The NBOME is pleased to present our **2012-2016 Strategic Plan, Directions for the future**. Read about our mission of protecting the public and how we will achieve it through the strategic objectives and goals outlined.

DIRECTIONS FOR THE FUTURE
2012-2016 NBOME Strategic Plan

the latest news

NBOME announces National Faculty Leadership Appointments
FEBRUARY 8, 2013

NBOME launches new website with improved navigation and new features
FEBRUARY 7, 2013

Osteopathic Medical Leadership convenes in response to changes, challenges in America's healthcare
DECEMBER 19, 2012

Dr. Bruce Bates joins NBOME in key Senior Leadership role
DECEMBER 11, 2012

All NBOME News

NBOME

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Comprehensive Osteopathic Medical Achievement Test (COMAT)

COMAT Subject Test Development Committees

- Initial Pilot in 2010 – Family Medicine – initially used retired COMLEX-USA items
- Seven (7) Core Clinical Disciplines – designed for end-of-clerkship/clinical rotation or course evaluations (Family Medicine, Internal Medicine, OB-GYN, OPP, Pediatrics, Psychiatry, Surgery) each with own panel of SMEs and pretesting
- Osteopathically distinctive assessments; Content Blueprint reflects development of the subject and consensus "best practice" guidelines for high frequency/high impact presentations
- Online adaptability and flexibility – web delivery
- Proctored and secure

Core Exams

- Family Medicine
- Internal Medicine
- OB-GYN
- OPP
- Pediatrics
- Psychiatry
- Surgery

- 10-15 forms
- Blueprint designed
- Validity and reliability referenced
- EBM referenced
- SME written
- SME reviewed
- Pretested
- Psychometrically reviewed
- Web-based delivery via ITS
- Site proctored

COMAT Partners
(All COMs except 1 use one or more COMAT)

- ATSU-KCOM
- ATSU-SOMA
- MWU-CCOM
- MWU-COM
- DMU-COM
- KCUMB-COM
- LECOM-ERIE
- LECOM-BRADENTON
- LMU-DCOM
- MSUCOM
- NSU-COM*
- NYCOM-NYIT
- OSU-COM
- OH-HCOM
- PCOM-PA
- PCOM-GA
- PNWU-COM
- RVU-COM*
- TUCOM-NY
- TUCOM-CA
- TUNCOM-NV*
- UMDNJ-SOM
- UNECOM
- UNTHSC-TCOM
- UP-KYCOM
- WCU-COM*
- WUHS-COMP
- WVSOM

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*NEW 2013-2014

www.nbome.org

COMAT Advisory Committee (COMATAC)

Content Development

- **Advisory Council**
  - Blueprint
  - Discipline Chairs for each COMAT
  - Professional members
- **Reviews Discipline Committees actions**
- **Approves Item writers – Subject Matter Experts (SMEs)**
- **Oversees Pretesting and Validation process**
- **Reviews score reporting**

COMAT Blueprint

PEDIATRICS

PURPOSE: The purpose of the COMAT Pediatrics Subject Examination is to assess the scope of knowledge and cognitive skills for clinical problem-solving of osteopathic medical school students at the end of the Pediatrics rotation and/or to provide a summative assessment of their Pediatrics scope of knowledge and cognitive skills for clinical problem-solving.

DIMENSION 1 - PATIENT PRESENTATION

TOPIC	%
Normal Growth and Development	14-21%
Skin	4-8%
CNS – Behavior/Psychiatry	15-22%
HEENT	4-8%
Cardiology/Respiratory	15-22%
Gastrointestinal	7-12%
Renal/Urinary	4-8%
Hematology/Lymphatics	4-8%
Musculoskeletal/OPP	4-8%
Endocrine/Metabolism	4-8%

DIMENSION 2 - PHYSICIAN TASKS

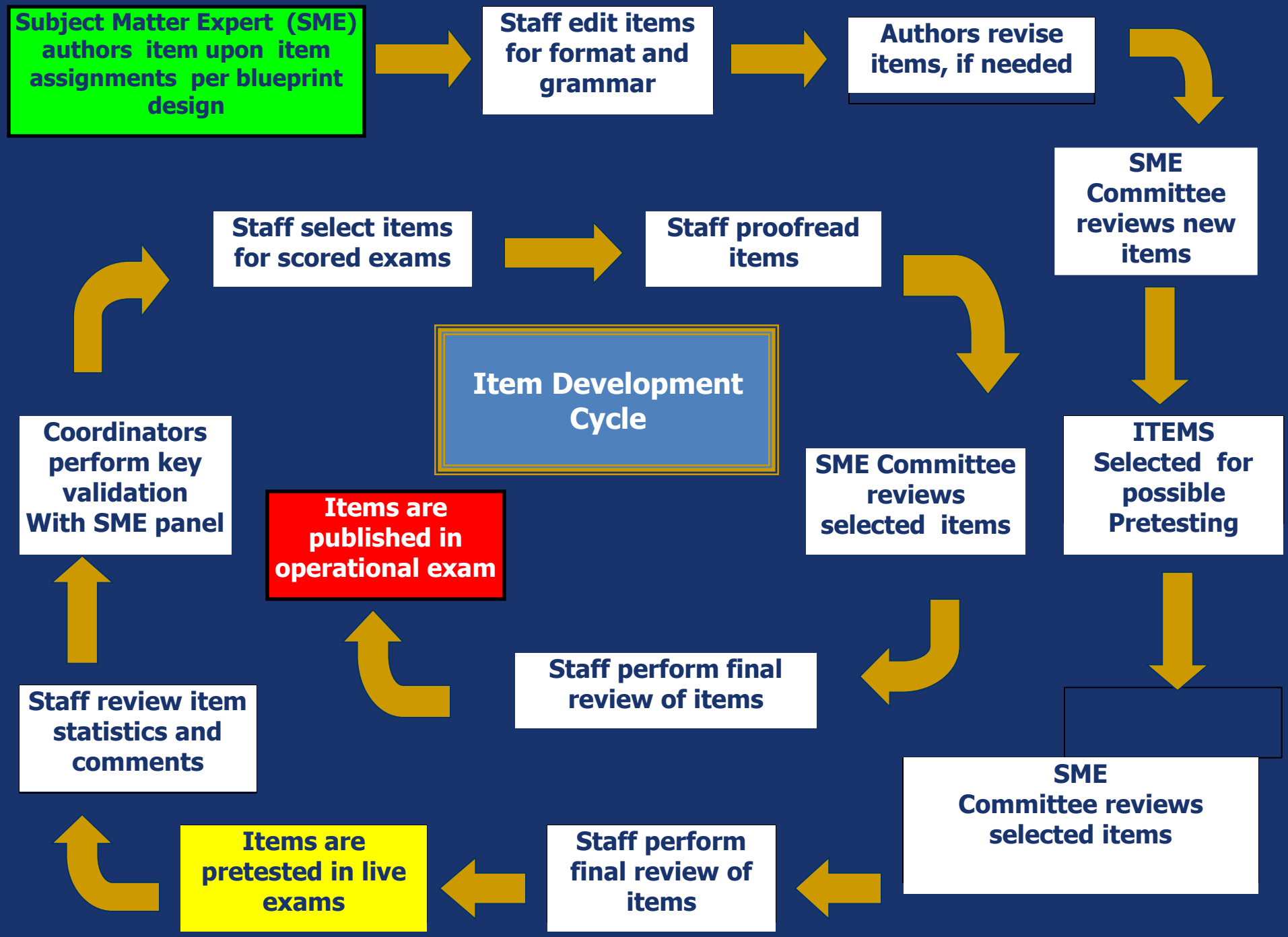
TOPIC	%
Health Promotion/Disease Prevention Health Care Delivery	10-20%
History & Physical	35-50%
Diagnostic Technologies	10-20%
Management	15-25%
Scientific Understanding of Mechanisms	5-10%

Updated Nov. 24, 2010

Comprehensive COMAT Process

"24-Month or Better" Process

- National subject matter expert input
  - BALANCED AND DIVERSE REPRESENTATIVES
- Extensive item review processes
- Multiple forms of exam
- Referenced and EBM based item
- Improved Psychometric parameters

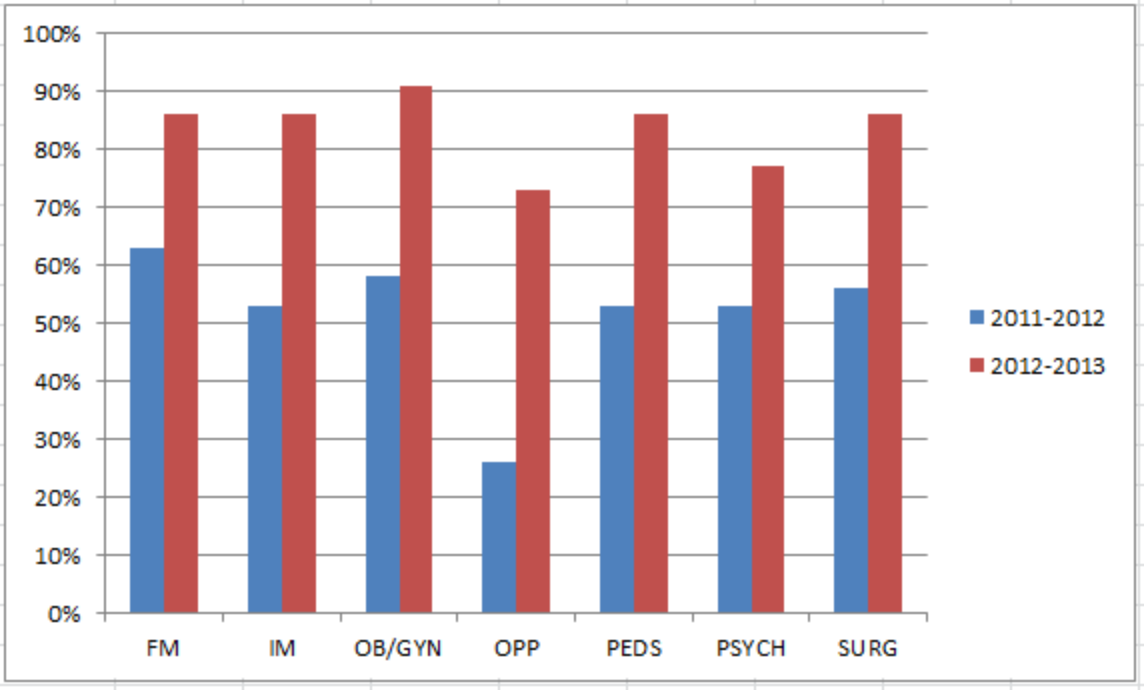

Subject Matter Expert (SME) authors item upon item assignments per blueprint design
Staff edit items for format and grammar
Authors revise items, if needed
SME Committee reviews new items
ITEMS Selected for possible Pretesting
SME Committee reviews selected items
Staff perform final review of items
Items are published in operational exam
Coordinators perform key validation With SME panel
Staff review item statistics and comments
Items are pretested in live exams
Staff perform final review of items
SME Committee reviews selected items
Staff proofread items
Staff select items for scored exams
Item Development Cycle

Public Information

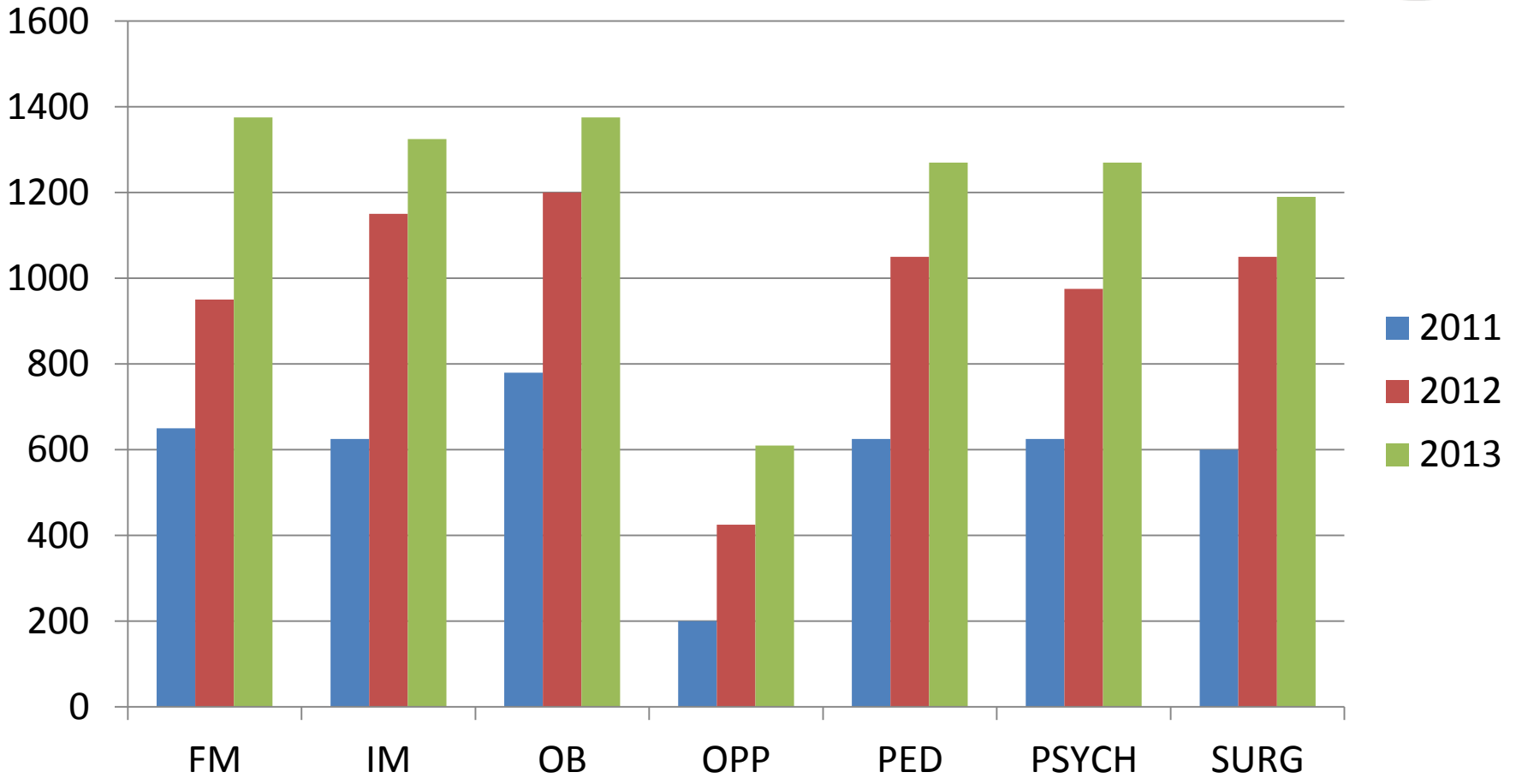
- **WEB INFORMATION**
  - BLUEPRINTS
  - COMAT OBJECTIVES BY DISCIPLINE
  - LEARNING RESOURCES BY DISCIPLINE
  - PRACTICE EXAM

COMAT Usage Between 2011/2012 and 2012/2013

- **Percent increase in COMs using COMAT as a grade determinant for their students**



Number of Takers by Subject – 2011 to 2013



COMAT Administrations 2011-2013

COMAT Subject Exam	2012 – 2013*		2011 – 2012		# Increase	% Increase
	#	% Total	#	% Total		
FM	2635	14.2%	2374	14.9%	261	11.0%
IM	2703	14.5%	2235	14.1%	468	20.9%
OB/GYN	2658	14.3%	2374	14.9%	284	12.0%
OPP	3378	18.2%	2432	15.3%	946	38.9%
PEDS	2420	13.0%	2135	13.4%	285	13.3%
PSY	2153	11.6%	1934	12.2%	219	11.3%
SURG	2658	14.3%	2417	15.2%	241	10.0%
Grand Total	18605	100.0%	15901	100.0%	2704	17.0%

- Contracted number of takers, can change slightly in actual administrations.
- Numbers do not include 2012 -2013

Overview

- The number of takers on COMAT Subject Exams increases continuously – 29% last year;
- The student performance stats are stable and more schools report using COMAT exam scores for higher-stakes decisions;
- Electronic score reporting and national-normed standard score for student and school was launched in November 2012 including performance profile and key phrases reporting;
- Quality of COMAT exams meet or exceed the industry standard.

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COMAT Scoring and Reporting

COMAT Score Reporting

- 07/01/2011 – 10/31/2012: Report *percent correct* scores;
  11/01/2012: Report *standard* scores

- Standard Scores
  Item calibration → Convert raw scores to Logit scores
  Define the norm group and construct a national mean/standard → Convert Logit scores to standard scores
  Standard scores have a mean of 100 and a standard of 10

- Electronic Score Reporting
  Score reports are "on demand".
  Score reports have "key phrase" analysis.
  Help schools search for score information more conveniently and efficiently.
  Schools determine how to use scores for grading.

COMAT Electronic Score Reports

COMAT Score Information - Search

Switch to Cumulative Reports

Search: | Subject: [All] | Testing Cycle: 2012-2013 | Date Range: to

Proctor: [All] | Location: [All] | Score Type: Standard | Rows Per Page: 15 | Search

COMAT Individual Scores

Multiple Score Reports

NBOME ID	Last Name	First Name	Subject	Exam Date	Stnd. Score	Proctor	Location	
			Family Medicine	11/15/2012	82			Score Report
			Obstetrics / Gynecology	02/26/2013	107			Score Report
			Pediatrics	01/15/2013	116			Score Report

COMAT Score Information - Search

Switch to Individual Reports

Testing Cycle: 2012-2013 | Date Range: to | Score Type: Standard | Rows Per Page: 15

COMAT Cumulative Scores

Subject	Number of Administrations	Number of Candidates	School Mean Stand.	School Standard Deviation Stand.	Nat'l Mean Stand.	Nat'l Standard Deviation Stand.	Number of Nat'l Candidates	
Family Medicine	4	107	97.6	10.3	99.1	9.9	1039	Score Report
Internal Medicine	8	116	98.6	11.3	100.2	10.2	1351	Score Report

Export

Single Administration Score Reports

NOTE: Single administration reports may take several seconds to display in the pop-up window.

Exam Date	Family Medicine	Internal Medicine	Obstetrics / Gynecology	Osteopathic Principles and Practice	Pediatrics	Psychiatry	Surgery
07/25/2012		Score Report					

COMAT Electronic Score Reports

COMAT
National Board of Osteopathic Medical Examiners

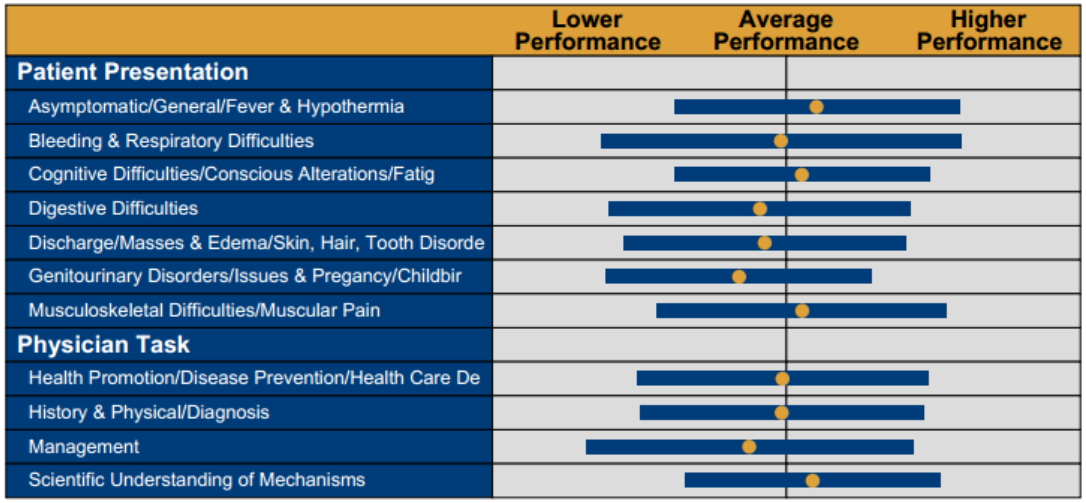
Family Medicine
SCHOOL PERFORMANCE REPORT -

School:

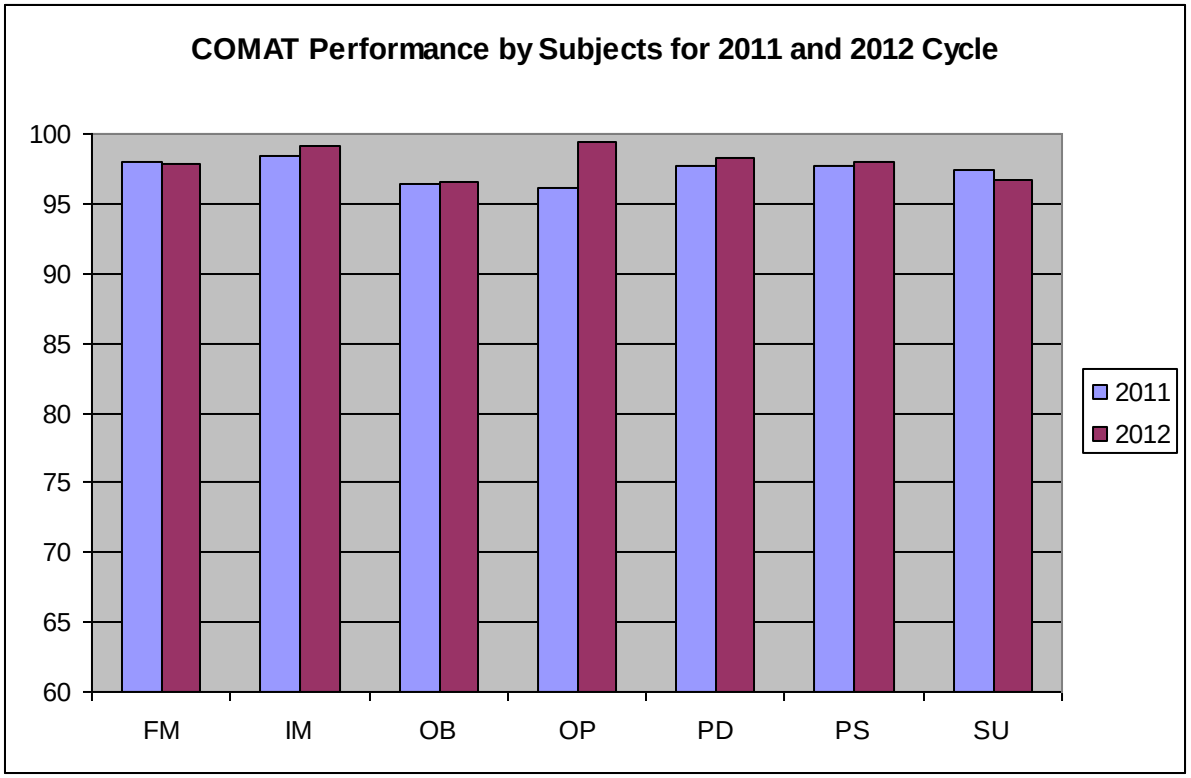
SUMMARY STATISTICS

No. of Candidates	Mean Standard Score	SD Standard Score	Minimum Standard Score	Maximum Standard Score

PERFORMANCE PROFILE



COMAT Performance



FM-Family Medicine; IM-Internal Medicine; OB-Obstetrics/Gynecology; OP-Osteopathic Principles and Practice; PD-Pediatrics; PS-Psychiatry; SU-Surgery

Correlation Analysis of COMAT and COMLEX-USA Performance

- **The COMAT subject exam performance is moderately correlated with performance on COMLEX-USA Level 2-CE ranging from .43 to .63.**
- **The more COMAT subjects a student takes the stronger the correlation.**
- **COMAT performance had a moderate correlation with ABEM (Emergency Medicine) Certification performance (publication in progress)**
- **All COMAT subjects' performance together as predictors explained about 51% variance of Level 2-CE performance, which was similar to what the NBME reported for their subject examinations and the USMLE Step 2-CK examination (Zahn, et al., 2012).**
- **Future research will look at how COMs participate in the COMAT subject examinations, how COMs utilize COMAT as part of student assessment, and how these decisions might influence students' performance on the COMLEX-USA examinations.**

2012 High Stakes Takers

	OB	OP	PSY	PEDS	FM	IM	SURG
OB		0.33	0.46	0.53	0.49	0.52	0.51
OP			0.27	0.30	0.36	0.35	0.36
PSY				0.45	0.42	0.46	0.42
PEDS					0.48	0.50	0.48
FM						0.51	0.48
IM							0.53
COMLEX-USA Level 2-CE	0.59	0.45	0.50	0.58	0.56	0.65	0.60

FYI

- **Test Enhancement**
  - Additional Pretesting
  - Greater use of clinical scenarios
    - Test Application > Recall
  - Expand video encounters, heart and lung sounds, imaging and photo exhibits
- **iPad/Tablet Option**
  - Discussion with vendor
- **COMAT Emergency Medicine – Planning in Process**
  - Blueprint completed and SMEs constructing items for pretesting – Target 2015 for Implementation
- **COM Survey**
  - Additional subject areas, reports, technology, test integrity

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COMLEX-USA Key Features Assessment

A Focus on Assessing Physician Competency in Clinical Decision-Making

Disclosure

- The Key Feature/Clinical-Decision assessment is modeled after the work of Georges Bordage, MD, PhD, and the Medical Council of Canada.

- The model remains in development and pilot testing and has NOT yet been adopted by the NBOME.

Adopted – Medical Council of Canada

1992

- Replaced Patient Management Problems
- Supplements MCQ as the basis for licensure
- Less pattern recognition / recall /cueing from the answer options
- Requires application of knowledge to specific situations
- Constructed around Critical Decision Points for assessing a patient presentation – what to consider/do/not do
- Critical Decision Points are called **Key Features**

Key Feature Scenario Based

Given a patient who presents with…

- **What are the challenges associate with the presentation?**
  - What are the likely difficulties candidate would encounter?
  - What are the critical errors that could be made?
  - What are diagnostic or management challenges that must be considered?
  - What are the cost-effective/resource utilization or system-based challenges?

- **Only the critical points or actions**

Key Features are NOT…

- **Not the entire process or each step in the diagnostic/management algorithm**
  - **Just the key decision points**
- **Not a reach for doing all things to all**
  - **Collecting too much data or doing too many things (being thorough) does not equate improved Dx/outcome**
    - Hatala 1998
  - **Is an indicator of uncertainty**
    - Elstein, Shulman and Sprafka 1978
- **Not knowledge alone (describe the S&S of DVT)**
  - **Instead given a patient presenting with…**
    - Recognize DVT
    - Order the following
    - Manage with

Clinical Scenario – 30-35 cases

Each case has 2-5 questions

- Aimed at leading dx/consideration; diagnostic steps (H&P, lab, imaging, etc.) and/or management/follow-up

Responses

- Short answer: fill in the blank (e.g. Leading Dx)
- Menu: select X# from a list of 15-20 that may include correct, no harm options as well as "KILLER" options
- Extended write in: List up to X# (lose credit of exceed #)

EXAMPLE: 3rd Trimester Bleeding

Given a woman experiencing third-trimester painless transvaginal bleeding, the candidate will:

- **KF 1 – Consider Placenta Previa as a leading diagnosis**
- **KF 2 – Avoid performing a pelvic examination**
- **KF 3 – Avoid discharge home**
- **KF 4 – Order Pelvic ultrasound**

What steps will you take now?

You may select up to three.

Select 13 if no steps are indicated.

1. Artificially rupture membranes
2. Cervical Swab for Chlamydia
3. CBC
4. CT abdomen
5. Cross and match for transfusion
6. Discharge home to return if bleeding worsens
7. INR
8. Pelvic Ultrasound
9. Manual Pelvic Examination
10. PTT
11. Vaginal probe ultrasound
12. Vaginal swab for group B streptococcus
13. No active steps are needed

Psychometric Advantage Per MCC

- Face validity from Clerkship Directors
  - 92% agreement with existing KFs
- Reliability from adequate sampling (30-35 cases)
- Content validity – allows a more precise assessment of key decision points
- Varied formats of response options
  - Allows focused scoring
- Fidelity and discrimination power
  - Efficient means of identifying weaker candidates

Dissemination

- 1991 College des Medicine du Quebec
- 1992 Canadian Medical Schools
- 1993 College of Physicians and Surgeons of Pakistan
- 1995 American College of Physicians (MKSAP)
- 1996 American College of Colon and Rectal Surgeons
  - 9 cases – 30 KFs; Crb α = .95 overall
- 1997 Royal Australian College of General Practitioners
- Swiss National Examination Board
- 2002 Hatal & Norman (Crb α = .49) Clerkships
- 2005 German Medical Schools

Development at NBOME

- Engaged consultant – Georges Bordage, MD, PhD
- Assembled initial SME Task Force Panel – Face-to-Face and virtual tutorial and engagement
- Case selection per Blueprint and defined KFs
- Case writing and review – 44 cases prepared
- Pilot testing phases beginning
  - Acceptance testing
  - Logistics testing (CBT administration and scoring)
  - Pre-testing
- Expand SME panel; Further case development – 130 cases
- GOAL: Implement 2017 if Pilots successful

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Thank You!

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