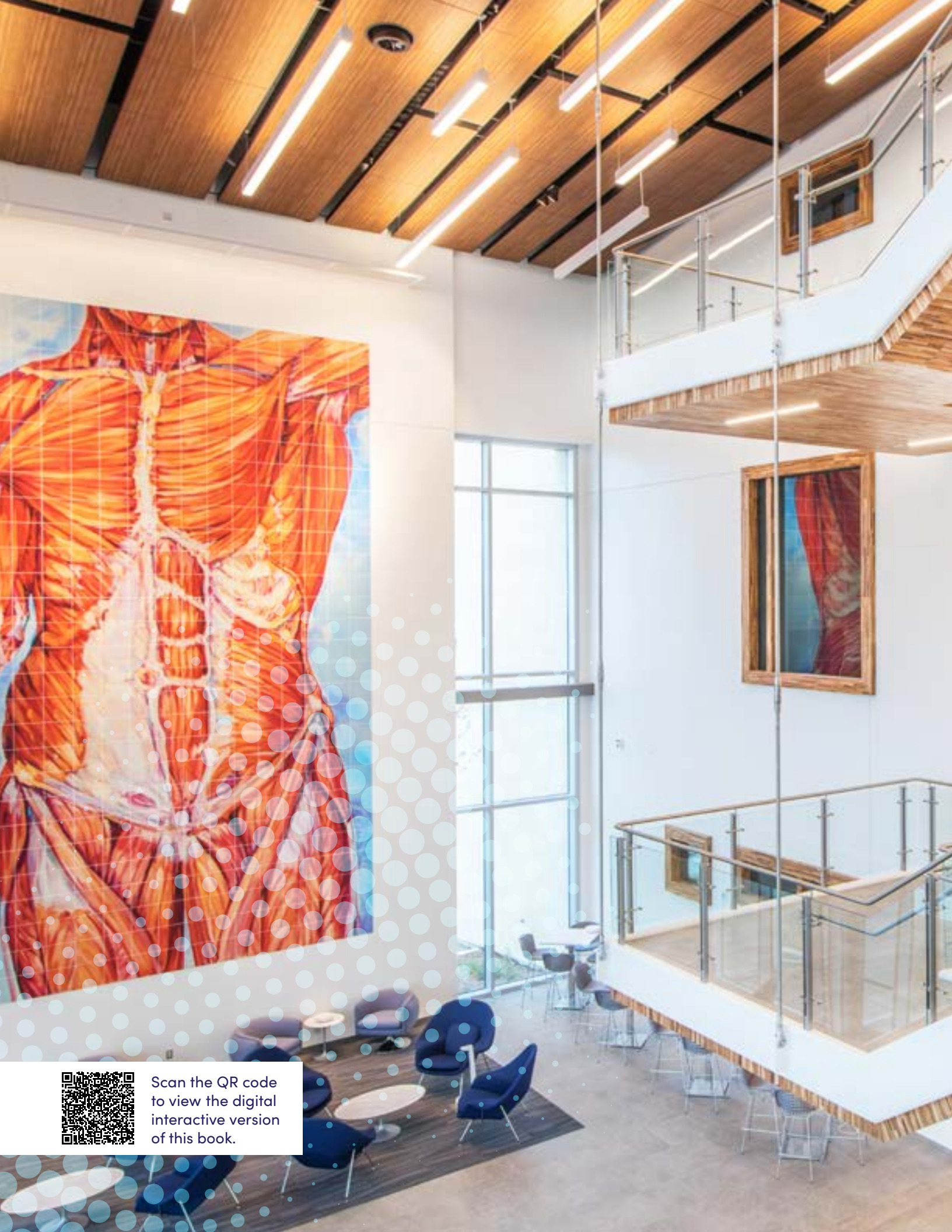




# **READINESS FOR RESIDENCY BOOTCAMP IMPLEMENTATION PLAYBOOK**

**A Framework for  
Colleges of Osteopathic  
Medicine**





Scan the QR code to view the digital interactive version of this book.



## Table of Contents

<b>Residency Readiness &amp; COVID-19</b>	<b>4</b>
<b>Background</b>	<b>5</b>
Chart I. Summary of Activities on Residency Readiness	5
<b>Understand Your Capacity and What You Need at Your Institution</b>	<b>7</b>
<b>Understand Your Approach to Residency Preparedness</b>	<b>8</b>
<b>One Size Doesn't Fit All: Bootcamp Set Up</b>	<b>9</b>
Figure I. Residency Boot Camp Logistics	9
<b>Keep It Simple: Assess Few but Critical Knowledge and Skills</b>	<b>10</b>
Chart II. What Core Knowledge/ Skills Do Students Need Before Entering Residency?	10
<b>Refresh Before and After the Bootcamps</b>	<b>14</b>
List of Procedures (General/ Specialty Specific)	14
<b>Acknowledgments</b>	<b>16</b>
<b>Appendix</b>	<b>18</b>



## Residency Readiness & COVID-19

The American Association of Colleges of Osteopathic Medicine (AACOM) Board of Deans established the UME-GME Task Force in 2022 to address critical issues affecting osteopathic medical education, including the transition to and readiness for residency. In 2021, AACOM began working with the nation's colleges of osteopathic medicine (COMs) to explore ways to support residency preparation efforts for fourth-year medical students after the onset of the COVID-19 pandemic. There were increased concerns during this period about the preparedness of medical students who likely missed clinical experiences and patient encounters due to the pandemic. As such, COMs across the nation developed mechanisms to evaluate and provide additional refreshers to their medical students to better prepare them to start residency.

To follow on these efforts, the UME-GME Task Force's Transition to Residency Working Group established an action group on residency-readiness bootcamps in 2022. The action group was tasked with developing a national framework for COMs to consider in their efforts to support students in their fourth year of

medical school as they transition to residency. The framework is intended to serve as a guide that will be tailored to meet the specific needs and resource capacity of COMs. It is hoped that a national framework will facilitate increased collaboration and the sharing of tools and information across the nation and will demonstrate to residency program directors that all osteopathic medical students are fully prepared to enter and succeed in a residency position.

To that end, this playbook was developed for faculty and staff to serve as a guide to supplement existing efforts to prepare students for residency. It outlines specific skills that are transferable across specialties (such as responding to codes and performing physical exams) and should be assessed during a residency-readiness bootcamp to be held in the fourth year of medical school.

The model is similar to the Clinical Competency Committee (CCC) in the Accreditation Council for Graduate Medical Education (ACGME) whose role is to attest and sign off for learners.

Feedback on the specific skills was solicited and attained from program directors across specialties, clinical deans, deans and others, both MD and DO.

## Background

Developing a national residency-readiness bootcamp framework will provide substantial benefit to osteopathic medical students and COMs. Such a bootcamp may increase the competitiveness of osteopathic medical students applying for residency.

In a survey of clinical deans conducted in 2021, the nation's COMs reported that they desire national-level support for residency readiness. There was also interest in a national repository of resources for residency readiness that all COMs can use for their students as well as a desire to have standardized resources or programs that are available to all COMs. Finally, COMs reported a desire to have a standardized framework for the goals, objectives and assessment benchmarks of residency-readiness bootcamps. To date, several assessment metrics exist, including Entrustable Professional Activities (EPAs) and specialty milestones to assess readiness.

The challenges and limitations of establishing and maintaining residency-readiness bootcamps identified by clinical deans from the COMs in 2021 include:

- Financial cost limitations for implementing a program
- Time constraints for faculty and students
- Limited space and resources available for use by COMs

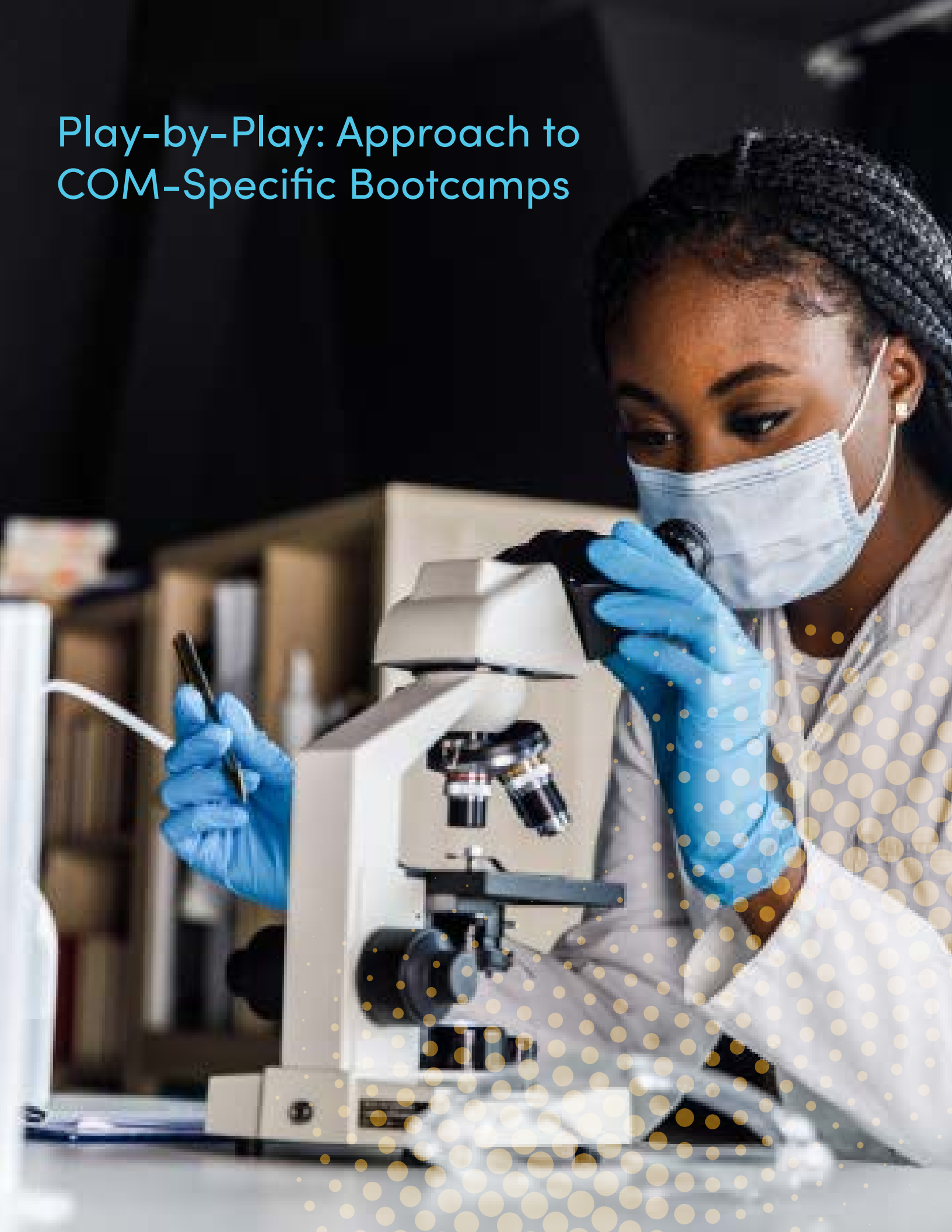
Several COMs have already implemented residency-readiness programming. These include:

- Structured Objective Structured Clinical Examination (OSCEs) and other clinical scenarios
- Simulations using standardized patients for those COMs that have an on-campus simulation center/facility
- Residency-readiness bootcamps (in-person and virtual bootcamps)
- Curriculum-based initiatives and didactics/coursework dedicated to residency readiness

### CHART I. SUMMARY OF ACTIVITIES ON RESIDENCY READINESS

Structured OSCEs
Simulations with standardized patients for COMs with and without a simulation facility
Curriculum-based initiatives and coursework
Weekly messages about how to handle scenarios
Sessions with residency program directors
Focus on 5 things residency program directors want: The ability to perform history, a physician exam, good oral summary, proper documentation and to recognize an emergency
Simulation program for OMS IVs
Three-day online/in-person events
Focus on EPAs as foundation or basis of competency/entrustability
AAMC pilot program: program directors are surveyed after students have been in GME for six months
In-person bootcamp catered to specialty that student matched into

# Play-by-Play: Approach to COM-Specific Bootcamps



## PLAY 1:

# Understand Your Capacity and What You Need at Your Institution

Consider the following questions at the national and school level when determining how to support residency preparation for medical students:

- What are the benchmarks for residency preparation?
- Who should determine the benchmarks or when to assess them?
- When should COMs observe the benchmarks?
- What goals and objectives should be met in the residency-readiness efforts?
- What is the best time to assess benchmarks prior to graduation?
- Do you need simulation centers/training mediums?
- What partnerships should COMs be striving to obtain if they don't already exist in a specific region (other schools or hospital partnership) and, if necessary, where would funding for partnerships be achieved?
- How could COMs cover some of the important residency skills that are not necessarily covered in milestones or EPAs—like difficult conversations with patients or family members?
- What established resources could be made available and who would oversee them?

## CHECKLIST

- Complete resource evaluation at COM
- Determine number of faculty members who can commit to residency bootcamp
- Determine number of days required
- Evaluate the feasibility of bringing students to campus
- Assess ability to leverage clinical sites to host bootcamps

## PLAY 2:

# Understand Your Approach to Residency Preparedness

Consider the following recommended approaches to residency readiness:

- Longitudinal/continuity in residency readiness across the four years of medical school
- Establish a safe learning environment to identify gaps and resources
- Build flexibility into the attestation process: Consider intertwining mentorship opportunities with residents at clinical sites and having the “home base” at a COM as a resource
- Strive to test via practical demonstration rather than via paper to hone procedure-based interpersonal communication skills
- Do not make bootcamps high stakes or an impediment to graduation
- Use the bootcamps as an opportunity to validate skills rather than an opportunity to teach the skills. Resources to refresh the medical students' knowledge on the skills and procedures should be readily available to students to access online asynchronously (see pages 14-15).

## CHECKLIST

- Create communication plan to students on purpose and goals for the bootcamp
- Create communication plan for faculty and evaluators
- Ensure buy-in from leadership
- Organize resources for refreshers that can easily be accessed
- Offer library resources for procedural skills

The structure of the bootcamps can vary, but COMs are encouraged to establish “skill stations” that assess a specific number of skills that can be marked complete once mastery is demonstrated by the student. Remediation should be offered to students until they have mastered these skills.



# PLAY 3:

## One Size Doesn't Fit All: Bootcamp Setup

The setup of the residency-readiness bootcamp can vary based on the COM, its location and appropriate timing based on schedules and existing curriculum. There may be opportunities to assess skills in a virtual setting as well, as outlined in Chart II. As such, there is no standard recommendation on the number of faculty needed to execute an in-person bootcamp. The action group recommends a flipped classroom approach and arranging stations based on the skills that will be assessed. There can be one station per skill or skill set and students can rotate through each station to demonstrate proficiency. Each skill station should be approximately 15 minutes per skill. The instructor will start with a demonstration and then students will demonstrate their own competency. If a student fails to show competency, that skill will not be checked off and the student's skills will be remediated at the completion of all the stations.

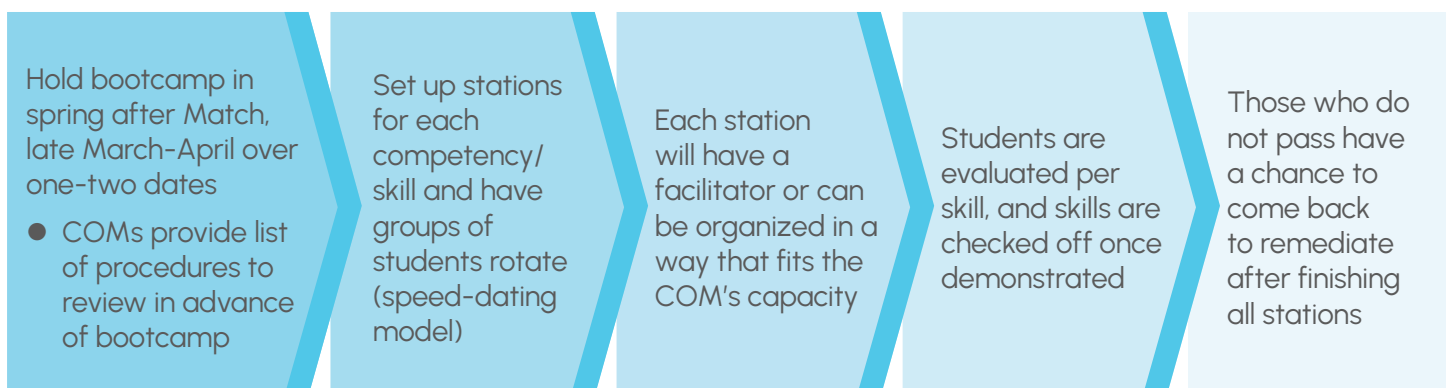
### TIMELINE

The action group strongly recommends that the bootcamps are conducted during the spring of the fourth year of medical school, after students have matched and may have more flexibility to attend an in-person bootcamp.

### CHECKLIST

- Determine location of residency bootcamp
- Set up tables/stations with a set number of skills to evaluate
- Ensure adequate staff support for bootcamp day(s)
- Consider ways to include the COM's efforts to assess and validate skills prior to residency in the Medical Student Performance Evaluation

### FIGURE 1. RESIDENCY BOOT CAMP LOGISTICS



## PLAY 4:

# Keep It Simple: Assess Few, but Critical, Knowledge and Skills

There are key knowledge and skills needed before entry into residency that should be validated before starting residency, which should be checked off longitudinally during the four years of medical school (see Chart II). The list of skills and knowledge align with EPAs.

Some skills are critical, yet they fade with time and will need to be assessed longitudinally throughout the four years of medical school. Table 2 outlines both the skills that need to be checked off longitudinally and those that need to be validated through a residency-readiness bootcamp before entry into residency.

### Cross-Walk of Core Skills with ACGME Core Competencies

Internal Medicine Transition to Residency Individualized Learner Plan (ILP) Templates by Alliance of Academic Internal Medicine

### PRE-AND-POST RESIDENCY BOOTCAMP SURVEY TEMPLATES:

Pre-bootcamp survey template

Post-bootcamp survey template

### CHECKLIST

- Assess skills that align with curriculum
- Determine whether some skills can be assessed in a virtual setting
- Develop rubrics for assessment

## CHART II. WHAT CORE KNOWLEDGE/SKILLS DO STUDENTS NEED BEFORE ENTERING RESIDENCY?

Knowledge/Skills Needed	Longitudinal Check Offs During Medical School	Validated Items Before Starting Residency	Can Be Validated Online
ACLS/PALS: Intubation, running a code	X	X	
Acid/Base balance	X	X	X
Consenting for procedures	X	X	X
DNR	X	X	X
How to hand off a patient	X	X	X
Inserting peripheral IV	X	X	
Triage patients when on call	X	X	X
History taking	X	X	X
Physical exam	X	X	
Oral presentation	X	X	X
OPP/OSCE	X	X*	
Ultrasound skills (POCUS)	X*	X*	
Reading and presenting a chest X-ray	X	X	X
Admissions, transfer and discharge documentation	X	X	X
Fluid resuscitation	X	X	
Assessing suicide risk	X	X	X
EKG interpretation	X	X	X
Sutures	X	X	
Access evidence-based resources at point of care	X		
Comfort care transition or goals of care discussion	X		

Knowledge/Skills Needed	Longitudinal Check Offs During Medical School	Validated Items Before Starting Residency	Can Be Validated Online
Communicating with consultants (formal, verbal or written consult request)	X		
How to advocate for patients and health equity as a resident	X		
Communicating with non-physician colleagues (what are appropriate requests)	X		
How to efficiently review the EMR (key tabs and in what order)	X		
Time management, prioritizing tasks (e.g., consults then orders, then family updates, then notes, etc.)	X		
Delivering bad news	X		
Assessing patient's decision-making capacity	X		
DPOA vs. medical decision-maker, POLST vs. advanced health directive	X		
Basics of health insurance	X		
Basics of quality improvement projects	X		
Receiving and providing feedback	X		
Hospice vs. LTAC vs. SNF -> transferring care decisions	X		
Fundamentals of antibiotics	X		
Fundamentals of sedation/analgesia medications	X		
Guides on other procedures like thoracentesis, paracentesis, arthrocentesis, chest tube placement, etc.	X		
Growth mindset	X		
Self-care/wellness	X		

\*Based on curriculum at COMs



## PLAY 5: Refresh Before and After the Bootcamps

It's ideal to offer an online resource that students can log onto with virtual resources (documents, videos, simulations, etc.) to review skills that they have run into and identify as an individual problem. An online resource would be accessible when needed, and not mandatory or punitive. However, this must be balanced by the program director's need for an attestation of proficiency.

### CHECKLIST

- Determine which procedures may apply to specific specialties if wanting to provide more specialty-specific refreshers
- Provide resources at institution that may require a fee to access, e.g., through library
- Share reference lists in advance of any residency bootcamp activity

### LIST OF PROCEDURES (GENERAL/SPECIALTY SPECIFIC)

Subscription to *New England Journal of Medicine* required to access videos

✓ Abscess Incision and Drainage

✓ Ankle-Brachial Index for Assessment of Peripheral Arterial Disease

✓ Arterial Puncture for Blood Gas Analysis

✓ Arthrocentesis

✓ Basic Laceration Repair

✓ Basic Splinting Techniques

✓ Blood-Pressure Measurement

✓ Bone Marrow Aspiration and Biopsy

Central Venous Catheterization

✓ Internal Jugular Vein

✓ Subclavian Vein

✓ Femoral Vein

✓ Chest-Tube Insertion

✓ Clinical Evaluation of the Knee

✓ Conscious Sedation for Minor Procedures in Adults

✓ Cricothyroidectomy

✓ Diagnosing Otitis Media - Otoscopy and Cerumen Removal

EKG Interpretation

✓ Emergency Pericardiocentesis

✓ Endometrial Biopsy

✓ Endotracheal Extubation

✓ Examination of the Larynx and Pharynx

✓ Fiberoptic Intubation

✓ Gastrostomy-Tube Exchange

Genitourinary Exam  
Male  
Female

✓ Hand Hygiene

✓ How to Perform a Punch Biopsy of the Skin

✓ Intraosseous Catheter Placement in Children

✓ Laryngeal Mask Airway in Medical Emergencies

✓ Lumbar Puncture

✓ Nasogastric Intubation

✓ Orotracheal Intubation

- ✓ Paracentesis
  - ✓ Pelvic Exam
  - ✓ Peripheral IV Insertion :  
Peripheral Intravenous  
Cannulation
  - ✓ Placement of an Arterial Line
  - ✓ Positive-Pressure Ventilation  
with a Face Mask and  
a Bag-Valve Device
  - ✓ Procedural Sedation and  
Analgesia in Children
  - ✓ Pulmonary-Artery  
Catheterization
  - ✓ Pulse Oximetry
  - ✓ Reduction of a Pulled Elbow
  - ✓ Repositioning Dislocated  
Temporomandibular Joints
  - ✓ Thoracentesis
  - ✓ Ultrasound-Guided Insertion  
of a Radial Arterial Catheter
  - ✓ Ultrasound-Guided Internal  
Jugular Vein Cannulation
  - ✓ Ultrasound-Guided  
Peripheral IV Placement
  - ✓ Umbilical Vascular  
Catheterization
- Urethral Catheterization**
- ✓ Men
  - ✓ Women
  - ✓ Girls
- ✓ How to Read a Chest X-Ray  
(iEM, registration required)

- ✓ Interpretation of the  
Adult Chest X-Ray
  - ✓ How to Read an  
Abdominal X-Ray
  - ✓ Approach to Abdominal  
X-Ray Interpretation
  - ✓ MSK X-ray (Use  
Musculoskeletal)
  - ✓ Mental Status Exam
- Hand Hygiene
- Skin Prep, Draping—  
proper technique
- Suture (simple, running,  
subcutaneous, mattress)/  
laceration repair, staples
- Incision and Drainage Procedure
- Digital Block (administer  
a local anesthetic)
- NG Tube Placement (describe  
maintenance and proper removal)
- Foley Catheter Placement  
(describe maintenance  
and proper removal)
- IV Access
- PAP/Bi-Manual Exam
- Male Genital Exam
- Rectal Exam
- Breast Exam
- Wet Mount
- Basic MSK Splinting
- Wound Dressing
- OMT Hospital vs. Outpatient

- Vaginal Delivery (FM, OB, EM)
- C-Section (appropriately  
assist with)
- Cord Blood Collection
- STI Collection
- Read Head CT, r/o acute  
intracranial bleed
- IV Fluid Use (pediatric versus  
adult bolus versus maintenance)
- Blood Product Use
- Management of DKA
- Admission Orders
- Discharge Orders and Note
- Procedure Note
- Post Delivery Note
- Outpatient SOAP note
- Fetal Heart Tracing
- APGAR
- Pre-Op Evaluation
- Aseptic Protocols
- Calculate Creatinine Clearance
- Basic Lab Interpretation—  
CBC, chem panel, UA

# Acknowledgments

We would like to acknowledge the members of AACOM UME-GME Task Force's Residency Readiness Bootcamp Action Group for developing the contents of this playbook.

We would also like to thank the residency program directors, colleges of osteopathic medicine deans, clinical deans and members of the Assembly of Osteopathic Graduate Medical Educators and its Residency and Fellows Council for their feedback and input.

Special thank you to AACOM UME-GME Task Force's Transition to Residency Working Group, chaired by Tami Hendriksz, DO, for overseeing this effort. Thank you to the AACOM UME-GME Task Force at large for their contributions.

## AACOM UME-GME TASK FORCE'S RESIDENCY READINESS BOOTCAMP ACTION GROUP

CHAIR:

### **Natalie Nevins, DO**

*Chair, Associate Dean of GME & Program Development*  
Touro

### **May Lin, DO**

*Assistant Dean of GME & Program Development*  
Touro

### **Carrie Champine, DO**

*Associate Dean of OMS IV and GME*  
VCOM

### **Wendy Finch**

*Clinical Career Advisor*  
RVUCOM

### **Praful Patel, MD**

*Chair and Assistant Professor of OB/GYN & Surgery*  
ACOM

### **Amber Fedin, DO**

*Associate Dean for Clinical Affairs & Associate Professor of Family Medicine*  
DUQCOM

### **Ananya Seth**

*OMS III*  
VCOM

### **Alissa Hendricks-Wenger, PhD**

*OMS III*  
LMU-DCOM

### **Kenneth Heiles, DO**

*Campus Dean, KCU-COM Joplin; Associate Dean for GME, KCU-COM; Secretary/Treasurer (Officer), AOGME*  
Kansas City University College of Osteopathic Medicine

### **Samaneh Bolourchi, DO**

*PGY-I*  
Touro CA

### **Abigail Frank, DO**

*Assistant Dean of GME*  
WVSOM

### **Lawrence LeBeau, DO**

*Chair of Graduate Medical Education Department*  
ATSU-SOMA

### **Jordan Spencer, DO**

*Former RFC Chair*  
Barrier Islands Psychiatry

### **Machelle Linsenmeyer, EdD**

*Associate Dean for Assessment and Clinical Education*  
WVSOM

### **Danish Javed, MD**

*Assistant Professor*  
ATSU-SOMA

## UME-GME TASK FORCE'S STEERING COMMITTEE

Go to [page 17](#).

We also would like to acknowledge Brian Nohomovich, DO, PhD, resident physician with the Internal Medicine Residency Program at Western Michigan University Homer Stryker MD School of Medicine, and member of the Assembly of Osteopathic Graduate Medical Educators' Residents and Fellows Council for his help reviewing this playbook.



# AACOM UME-GME Steering Committee Membership

## CHAIRS

CHAIR: T2R WORKING GROUP

### **Tami Hendriksz, DO**

*Dean and Chief Academic Officer, Touro University College of Osteopathic Medicine-California (TUCOM-CA)*

CHAIR: UME-GME TASK FORCE

### **Brian Kessler, DO**

*Dean, Chief Academic Officer, Campbell University Jerry M. Wallace School of Osteopathic Medicine*

CHAIR: WORKING GROUP 3

AACOM BOARD CHAIR

### **Shane Speights, DO**

*Dean, New York Institute of Technology College of Osteopathic Medicine at Arkansas State University (NYITCOM-Arkansas)*

CHAIR: GRADUATE LEVEL

OSTEOPATHIC TRAINING WORKING GROUP

### **Richard Terry, DO**

*Associate Dean of Academic Affairs, Lake Erie College of Osteopathic Medicine at Elmira College Campus (LECOM at Elmira)*

## MEMBERS

### **Luis Banuelos, OMS III**

*Medical Student, Sam Houston State University College of Osteopathic Medicine (SHSUCOM)*

### **Katherine Bombly, OMS IV**

*Medical Student, Philadelphia College of Osteopathic Medicine, South Georgia (PCOM South Georgia)*

### **Linda Boyd, DO**

*Vice President for Academic Affairs and Dean, West Virginia School of Osteopathic Medicine (WVSOM)*

### **Robert Cain, DO**

*President and CEO, American Association of Colleges of Osteopathic Medicine (AACOM)*

### **Michael Clearfield, DO**

*Retired, Former Dean, Touro University College of Osteopathic Medicine-California (TUCOM-CA)*

### **DeAundre Dyer, DO**

*Staff Physician, WakeMed Health*

### **Heather Ferrill, DO**

*Vice President of Faculty Affairs and Dean, Rocky Vista University College of Osteopathic Medicine (RVUCOM)*

### **Ashley Gullett, DO**

*PGY2 Resident Physician, University of Michigan Health - West*

### **Victor Kolade, MD**

*Member of AIAMC Board of Directors & Programming Committee, Alliance of Independent Academic Medical Centers (AIAMC)*

### **Christopher Loyke, DO**

*Dean and Chief Academic Officer, Lincoln Memorial University DeBusk College of Osteopathic Medicine (LMU-DCOM)*

### **Elizabeth McMurtry, DO**

*Associate Dean for Clinical Education and Faculty Development, Pacific Northwest University of Health Sciences College of Osteopathic Medicine (PNWU-COM)*

### **Rishikesh Menon, OMS III**

*Medical Student, Touro University College of Osteopathic Medicine-California (TUCOM-CA)*

### **Thomas Mohr, DO**

*Dean, Sam Houston State University College of Osteopathic Medicine (SHSUCOM)*

## HONORARY MEMBERS

### **Terri Donlin Huesman, MBA**

*President/Chief Executive Officer, Osteopathic Heritage Foundations (OHF)*

## STAFF

FACILITATOR OF TASK FORCE

### **Joshua Mintz**

*President, CHP Mintz, LLC*

### **Alegneta Long**

*Vice President, GME Initiatives, AACOM*

### **Madhumita Napa**

*Project Manager, UME-GME Task Force, AACOM*

## APPENDIX

# Entrustable Professional Activities as Part of a Residency Readiness Bootcamp

Most educators have likely heard of entrustable professional activities (EPAs) as an approach to assessing medical students and residents; yet research indicates that use of the terminology has become confusing because there are at least four or more descriptions evident in the extant literature following its original use.<sup>1</sup> Ten Cate originally coined the term to describe the units of professional practice that clinicians engage with in their daily work.<sup>2</sup> Use of the term was subsequently expanded to include EPA assessments, EPA advancement decisions and EPAs as curricular frameworks. In the context of residency preparation, it is important to revisit the meaning of EPAs as professional units of practice before deciding how to apply EPAs as measurements of residency readiness.

Ten Cate<sup>3</sup> provides a primer on EPAs useful to those considering incorporation of EPA assessments in determining residency readiness. Of particular note, he describes the difference between EPAs and the competencies that underpin the EPAs, with EPAs functioning as operational definitions of the tasks that each clinical department, clinical ward or healthcare worker may have for the day, for the week or for any period of time.<sup>2,4</sup> As such, these are the tasks that operationally define the profession. In contrast, competencies describe the multiple knowledge, skills and attitudes/behaviors that individuals must learn in order to perform professional work tasks (i.e., EPAs). A basic task such as taking a patient's history, for example, requires the application of several competency domains (including professionalism). Learners can become competent professionals when they acquire requisite knowledge, skills, and attitudes within a competency domain. Professionals possess competency in definable areas. However, it is never said that professionals "possess" or "achieve" EPAs.

While a learner might seem competent, the delegation of a task or the decision to transfer a responsibility to a learner is complicated and requires that supervisors make grounded entrustment decisions. Decisions like this, which happen often frequently, are sometimes called ad hoc entrustment decisions. An entrustment decision occurs when a supervising physician feels the learner's skills match the complexity of the patient and the risks in doing the task are acceptable. There are many covariants to the entrustment decision-making process, including (a) the perceived learner features, (b) a supervisor's propensity to delegate responsibility, (c) the complexity of the EPA, (d) the clinical context and (e) the nature of the relationship of the clinician and the learner.<sup>5-8</sup> Entrustment decisions should always be based upon sufficiently grounded trust, with multiple observers in agreement that the entrustment is justified to reduce subjective bias and to incorporate a series of observations into the decision-making process.<sup>9</sup> Typically, an EPA entrustment decision requires multiple direct observations, longitudinal observations, case-based discussions and product evaluations. Case-based discussions and entrustment-based discussions<sup>10</sup> can serve as short, focused conversations after an EPA has taken place to ensure that the learner has a deep understanding of what was done. These conversations are best when "what-if" questions are included to explore whether the learner will know what to do in the future if similar situations arise in unexpected or unfamiliar ways.

Can these EPA parameters become fully realized in a residency readiness bootcamp? EPAs were designed for workplace-based assessment, so their application during a residency readiness bootcamp would be somewhat unique, although not impossible if done correctly.

Identified in the extant literature are six EPAs that show promise for launching a coordinated UME-GME effort to prepare medical students for residency:<sup>11</sup>

EPA4	Enter and discuss orders/prescriptions
EPA8	Patient handover
EPA10	Urgent/emergent care
EPA11	Informed consent
EPA12	Procedures
EPA13	Patient safety

Although EPAs can be somewhat specialty-specific, many feature generalized tasks applicable across specialties.<sup>11</sup> Therefore, opportunities to perform core EPAs and be assessed or receive feedback in the fourth year might be particularly useful for preparing medical students for their PGY-1 year in specialty areas such as surgery where use in resident selection has already been noted.<sup>12-14</sup> In two recent surveys conducted by national residency program organizations, program directors from general surgery and internal medicine have shared expectations for incoming residents regarding the core EPAs. General surgery program directors reported that they felt all 13 EPAs were relevant for general surgery<sup>12-13</sup> and internal medicine leaders noted that all but EPA 12 were relevant to their specialty area.<sup>14</sup> UME programs should consider the potential impact of EPA use given that these two specialty programs filled 42 percent (13,506 of 32,194) of all PGY-1 positions offered in the National Resident Matching Program during 2019.<sup>15</sup>

While useful, prescribing a specific experience to foster and determine readiness to perform core tasks/EPAs is difficult due to the variations in curricula and experiences at each school. The extent to which the core EPAs can be integrated into activities, experiences, required and elective curricula and residency-readiness activities will likely vary across medical schools. However, it is worth recognizing that the clinical skills required to begin a residency program extend well beyond those described as the core EPAs, which is why this guide in its entirety is important.

The first method would be to simply note elements of EPAs that might be assessed in previously defined checklists for various activities. While this is not a true assessment of the tasks or expectations of practice, it is a conscious note of where weaknesses might lie in the competencies that feed into EPAs. This process could elevate attention to the EPAs that warrant additional attention or where the curriculum might need to change to ensure better preparation for particular tasks. The writing group noted EPAs in the checklists provided in this document. This method can also be further seen in the work of Elias et al.<sup>16</sup> in which they describe the mapping process that they took in developing their checklist to incorporate EPAs as well as the Night-on-Call (NOC) activities that they used to address readiness for residency, framed around the tasks suggested by the AAMC core EPAs,<sup>17</sup> which are similar to AACOM's core EPAs for entering residency.<sup>18</sup>

The second method would be to incorporate some objective structured clinical exercises into your residency bootcamp experience (or other specific curricular experiences in the fourth year, such as readiness courses, internships/subinternships, residency preparation curriculum, etc.) where learners would receive feedback through simulated scenarios on tasks and readiness in a simulated environment. Although not containing the required elements for full EPA assessment (e.g., in context, actual patient encounter, multiple direct observations, longitudinal observations, case-based discussions and product evaluations), this method could provide valuable feedback, especially to those who have not received formal feedback on the tasks as a whole up to that point.

The final, and best, method would be to collect EPA assessments across time in actual clinical settings (through year three and four rotations) and review supporting evidence/data from the accumulation of these assessments to target specific areas of concern (and specialty-specific concerns, if possible) longitudinally but especially focused during a bootcamp or clerkship curricular experience. Examples of this type of method can be seen through the Education in Pediatrics Across the Continuum program specifically

designed for students entering pediatric residencies.<sup>19</sup> The interdepartmental acting internship experience at Virginia Commonwealth University School of Medicine can also provide some insights into a more longitudinal experience using EPAs in an actual clinical setting to provide feedback on tasks in preparation for residency.<sup>20-21</sup>

No matter which method is most appropriate for your institution, resources, experiences, curriculum and goals, the preparation of learners surrounding tasks outlined in the EPAs is important and will serve to set the learner up for success in residency, as noted by surgery and internal medicine program directors.

#### Appendix Acknowledgements:

- AACOM EPA Steering Committee, oversight and review.

- Dr. Mabelle Linsenmeyer, author
- Dr. Leslie Wimsatt, author

1. Meyer EG, Chen HC, Uijtdehaage S, Durning SJ, Maggio LA. Scoping review of entrustable professional activities in undergraduate medical education. *Acad Med*. 2019 Jul;94(7):1040-1049. doi: 10.1097/ACM.0000000000002735
2. Ten Cate O Scheele F. Competency-based post-graduate training: Can we bridge the gap between theory and clinical practice? *Acad Med*. 2007;82:542-547.
3. Ten Cate, O. An Updated Primer on Entrustable Professional Activities. *Revista Brasileira De Educação Médica*. 2020 Jan;43:712–720.
4. Schultz K, Griffiths J, Lacasse M. The application of entrustable professional activities to inform competency decisions in a family medicine residency program. *Acad Med*. 2015;90(7):888-897.
5. Sterkenburg A, Barach P, Kalkman C, Gielen M, Ten Cate O. When do supervising physicians decide to entrust residents with unsupervised tasks? *Acad Med*. 2010;85(9):1408-1417.
6. Hauer KE, Ten Cate O, Boscardin C, Irby DM, Lobst W, O'Sullivan PS. Understanding trust as an essential element of trainee supervision and learning in the workplace. *Adv Heal Sci Educ*. 2014;19(3):435-456.
7. Choo KJ, Arora VM, Barach P, Johnson JK, Farnan JM. How do supervising physicians decide to entrust residents with unsupervised tasks? A qualitative analysis. *J Hosp Med*. 2014;9(3):169-175. doi:10.1002/jhm.2150
8. Wijnen-Meijer M, van der Schaaf M, Nillesen K, Harendza S, Ten Cate O. Essential facets of competence that enable trust in medical graduates: A ranking study among physician educators in two countries. *Perspect Med Educ*. 2013;2(5-6):290-297.
9. Ten Cate O, Hart D, Ankel F, et al. Entrustment decision making in clinical training. *Acad Med*. 2016;91(2):191-198.
10. Ten Cate O, Hoff RG. From case-based to entrustment-based discussions. *Clin Teach*. 2017;14:385-389. doi:10.1111/tct.12710
11. Grbic D, Gielissen KA, Obeso V, Amiel JM, Jayas A, Andriole DA. Core entrustable professional activities for entering residency: A national survey of graduating medical students' self-assessed skills by specialty. *J Am Coll Surg*. 2022 Dec 1;235(6):940-951. doi: 10.1097/XCS.0000000000000395
12. Lindeman BM, Sacks BC, Lipsett PA. Graduating students' and surgery program directors' views of the Association of American Medical Colleges core entrustable professional activities for entering residency: Where are the gaps? *J Surg Educ*. 2015;72:e184–e192.
13. LaFemina J, Ahuja V, Alseidi A, et al. APDS consensus statement: ideal senior medical student experiences for preparedness for general surgery internship. *J Surg Educ*. 2021;78:69–75.

14. Angus SV, Vu TR, Willett LL, et al. Internal medicine residency program directors' views of the core entrustable professional activities for entering residency: an opportunity to enhance communication of competency along the continuum. *Acad Med*. 2017;92:785–791.
15. National Resident Matching Program. Results and Data: 2019 Main Residency Match. Washington, DC: National Resident Matching Program; 2019.
16. Eliasz KL, Nick MW, Zabar S, Buckvar-Keltz L, Ng GM, Riles TS, Kalet AL. Viewing readiness-for-residency through binoculars: Mapping competency-based assessments to the AAMC's 13 core entrustable professional activities (EPAs). *Teach Learn Med*. 2023 Aug-Sep;35(4):436–441. doi: 10.1080/10401334.2022.2082432
17. Association of American Medical Colleges (AAMC). Core Entrustable Professional Activities for Entering Residency, Curriculum Developers Guide. 2014. <https://www.aamc.org/download/484778/data/epal3toolkit.pdf>.
18. American Association of Colleges of Osteopathic Medicine (AACOM). Osteopathic Considerations for Core Entrustable Professional Activities (EPAs) for Entering Residency. 2016. [https://www.aacom.org/docs/default-source/med-ed-documents/core-epas.pdf?sfvrsn=b6145397\\_4](https://www.aacom.org/docs/default-source/med-ed-documents/core-epas.pdf?sfvrsn=b6145397_4).
19. Murray KE, Lane JL, Carraccio C, et al; Education in pediatrics across the continuum (EPAC) study group. Crossing the gap: Using competency-based assessment to determine whether learners are ready for the undergraduate-to-graduate transition. *Acad Med*. 2019;94:338–345.
20. Garber AM, Feldman M, Ryan M, Santen SA, Dow A, Goldberg SR. Core EPAs in the acting internship: Early outcomes from an interdepartmental experience. *Med Sci Educ*. 2021 Feb 9;31(2):527–533. doi: 10.1007/s40670-021-01208-y
21. Garber AM, Ryan MS, Santen SA, Goldberg SR. Redefining the acting internship in the era of entrustment: one institution's approach to reforming the acting internship. *Med Sci Educ*. 2019 Mar 20. doi: 10.1007/s40670-019-00692-7





