

# Using Simulation-Based Medical Education to Meet the Competency Requirements for the Single Accreditation System

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**Simulation-based medical education can provide medical training in a nonjudgmental, patient-safe, and effective environment. Although simulation has been a relatively new addition to medical education, the aeronautical, judicial, and military fields have used simulation training for hundreds of years, with positive outcomes. Simulation-based medical education can be used in a variety of settings, such as hospitals, outpatient clinics, medical schools, and simulation training centers. As the author describes in the present article, residencies currently accredited by the American Osteopathic Association can use a simulation-based medical education curriculum to meet training requirements of the 6 competencies identified by the Accreditation Council for Graduate Medical Education. The author also provides specific guidance on providing training and assessment in the professionalism competency.**

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In February 2014, the American Osteopathic Association, the American Association of Colleges of Osteopathic Medicine, and the Accreditation Council for Graduate Medical Education (ACGME) agreed to move forward with a single graduate medical education accreditation system.<sup>1</sup> In July 2014, the ACGME mandated the Next Accreditation System (NAS) for its graduate medical education programs in the United States.<sup>2</sup> One key aspect of the NAS is that it allows residency programs opportunities for innovation while adjusting “the accreditation system to be based on educational outcomes”<sup>2</sup> in the 6 ACGME competencies.

One such opportunity for innovation is simulation-based medical education (SBME). Although simulation training has been successfully implemented in aerospace, judicial, and military education for many years,<sup>3</sup> it is relatively new in graduate medical education. With the single accreditation system and the new NAS standards, the time is ripe for SBME to be used for learning and meeting “standards for high quality education in a safe and effective learning environment” in osteopathic training programs.<sup>2</sup> According to Issenberg and Scalese,<sup>4</sup> SBME has allowed residents to gain essential skills in a controlled environment that can be easily applied in clinical settings. As noted by Ziv et al,<sup>5</sup> “SBME has the potential to decrease the numbers and effects of medical errors, to facilitate open exchange in training situations, to enhance patient safety, and to decrease the reliance on vulnerable patients for training.”

In the present article, I discuss ways in which an SBME curriculum can be implemented by the American Osteopathic Association residencies to address all 6 of the ACGME’s competencies, which are required for NAS accreditation. I also discuss how SBME can be used to test residents’ professionalism competency and to provide proof of documentation for professionalism training.<sup>6</sup>

## Competency 1: Patient Care and Procedural Skills

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the management of health problems and the promotion of health.<sup>7(p11)</sup>

Case scenarios, which can incorporate multiple specialties, can be used to teach or test residents in patient care and procedures. The scenarios can cover a variety of cultural and patient care issues. As physicians we must become “familiar with the cultural practices” of different ethnicities and patient populations.<sup>8</sup> Some patient populations have special concerns, such as transgender patients,<sup>8</sup> in which residents can be trained using SBME.

A typical medical simulation session starts with the resident taking a pretest of medical knowledge on a particular topic that the resident will encounter in the scenario. The resident is then exposed to the scenario with either a standardized patient (SP) or a manikin. The SP plays the role of the patient (or family member, if a manikin is used), and the resident enters the scenario as the physician taking care of the patient. The session is typically video recorded, and after the encounter the SP, resident, and educator leave the room to watch the recording and discuss it. During this debriefing, the resident gains a sense of how he or she interacted with the patient and met other expectations. The SP (or manikin facilitator) discusses how he or she felt the resident behaved and what the experience was like for the patient. The SP can also provide insight on the resident’s technique, body language, and basic care of the patient. The evaluator provides feedback regarding whether certain protocols are followed. The resident then leaves with a self-evaluation and educator evaluation of the scenario.

Simulation-based medical education is used frequently in procedural skills curriculum and is an ACGME requirement in the fields of general surgery<sup>9</sup> and anesthesiology.<sup>10</sup> The old adage of “see one, do one, teach one” is no longer valid in the patient safety initiative culture. Many specific procedures are required for each specialty,

and SPs and manikins can provide safe alternatives to learning on real patients.

Another benefit of SBME is that video-recorded sessions can provide residents with documented proof that they are using appropriate techniques and following safety protocols, such as hand washing and confirming patient identification. These sessions can be submitted to the NAS as proof that milestones are being met and measured.<sup>2</sup>

## Competency 2: Medical Knowledge

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiologic, and social-behavioral sciences, as well as the application of this knowledge to patient care.<sup>7(p13)</sup>

Simulation-based medical education can be used to test residents’ medical knowledge on various subjects and disease entities. A multiple-choice pretest and posttest of the topic being tested—structured in a format similar to the residents’ board examinations—can be given to the resident before and after the simulation session. The graded tests can be used as written documentation of residents’ medical knowledge. During the debriefing, a resident can be questioned on medical knowledge as well. Some medical educators may provide the topic to the resident before the simulation.

Residents’ knowledge of osteopathic manipulative medicine (OMM) can also be tested using an SBME curriculum. A pretest and posttest asking specific questions on techniques and patient positions can elicit residents’ knowledge of OMM. An SP or manikin can be used during an OMM case, and the debriefing can focus on residents’ osteopathic approach to care of the patient. Currently, many osteopathic medical schools have a simulation laboratory to test medical students on the knowledge and care of patients. This training is important, as it helps prepare students for the clinical skills portion of the National Board of Osteopathic Medical Examiners licensing examination.

### Competency 3: Systems-Based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.<sup>7(p15)</sup>

Systems-based practice involves making sure residents understand patient-physician relationship and the importance of using appropriate resources in that relationship (eg, considering cost awareness, risk-benefit analysis, and use of interprofessional teams). An understanding of systems-based practice can be achieved in the debriefing session of an SBME curriculum, during which residents can see themselves in the video recording and comment on their patient communication regarding resources. During the debriefing, the SP can provide valuable information by speaking about how he or she felt as a patient. For example, the SP can ask about insurance or payment issues, and residents can see how they responded to such a situation. Residents can also see how they interacted with a variety of physician and nonphysician providers in the scenario and can consider the costs and risk-benefit of their interventions, diagnostic testing, and resource allocations.

### Competency 4: Practice-Based Learning and Improvement

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.<sup>7(p13)</sup>

Health care is constantly changing, with daily additions to medical science and medical informatics. Thus, the demands of medical education are likewise constantly changing, and they do not stop after residency. An SBME curriculum can encourage lifelong learning and self-improvement. The debriefing session provides a nonjudgmental environment to self-reflect as resi-

dents participate in self-evaluation. Residents can see what they did in a scenario and can propose different ways of doing things when the real clinical scenario occurs. Further, residents can practice their institution's protocols in a safe environment before using them in the clinical setting.

Before leaving the simulation, residents should be able to identify their weaknesses or problem areas and come up with a plan for improvement. Simulation-based medical education can be used in resident remediation and can provide videographic proof of residents' patient session that can be seen by all faculty to assess improvement. All debriefings should include a segment on what residents can do differently next time and should relate to real-life clinical scenarios. Once residents have mastered the competencies, they can continually be retested and improve their patient care skills.

### Competency 5: Interpersonal and Communication Skills

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, patients' families, and health care professionals.<sup>7(p14)</sup>

This competency should be met using SBME by including many different members of the health care team. The hierarchy of medicine has changed—the physician is part of a team, not on top of a triangular hierarchy system. By incorporating many different team members (eg, nurses, pharmacists) into the scenario, residents can be trained and tested on his or her interpersonal and interprofessional communication skills. Many articles<sup>5,11</sup> have discussed the importance of communication and compassion in medical care, and how residents interact with patients can be assessed using simulation. Video-recorded sessions are important for residents to see how they act, sound, and come across to patients and other members of the team.

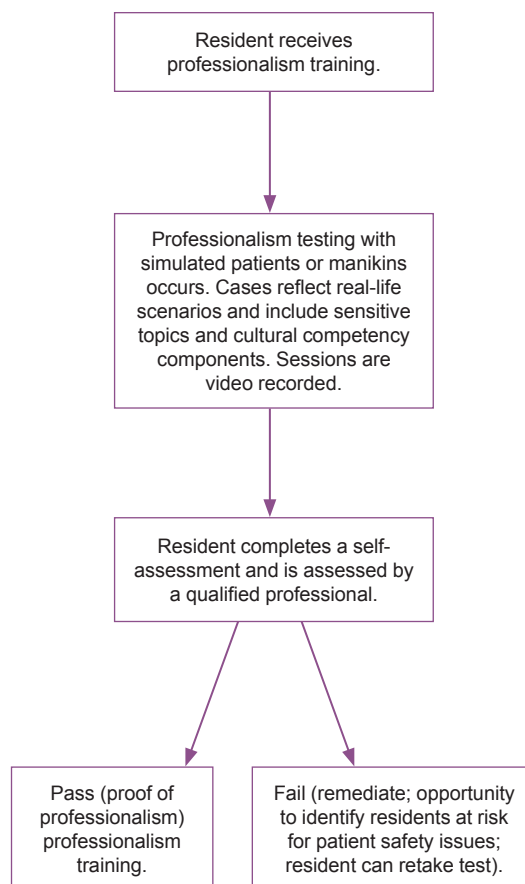
## Competency 6: Professionalism

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.<sup>7(p14)</sup>

Never before have physicians' personal lives been so easily accessible to patients. Despite the fact that many residents have personal Facebook, Twitter, and other social media accounts with pictures or quotes on public display, they likely do not have a full understanding about the consequence of social media posts or the potential for Health Insurance Portability and Accountability Act transgressions.

Written documentation in the form of texts, instant messages, Facebook messages, tweets, and e-mails can be used in professionalism complaints toward and lawsuits against physicians.<sup>12</sup> Simulation-based medical education provides a teaching method whereby residents can encounter these scenarios. The simulation scenario can also be used to provide videographic proof that a resident has completed professionalism training and has passed a test in professionalism. Considering that a required competency of professionalism exists, medical educators may be asked in the future to provide proof that a specific resident did not have any professionalism complaints during their training. A video-recorded encounter showing the resident behaving in an empathic, professional way can provide proof of professionalism training in residency (*Figure*). It can also be used if an educator is worried about a resident's professionalism, or if a professionalism complaint was lodged against the resident, the video-recorded simulation can provide a source of remediation.

Simulation-based medical education can test multiple cultural competencies and professionalism standards. By using SBME, residents can see how they interact with and their comfort with different patient populations using different transgender, racial, and religious situations. These simulations should be incorporated into the training curriculum and can provide documentation to state medical boards as proof that residents participated in and passed a professionalism testing standard.



**Figure.**  
Flowchart of professionalism testing using simulation-based medical education.

## Conclusion

Never before has the need for SBME been so important and vital to the success of the osteopathic medical profession than with the single accreditation system. Simulation is imperative to medical education<sup>13-15</sup> and can provide a reasonable approach to reaching the required competency of the single accreditation system. Documented tests and video recordings of simulations can prove that residents were taught about and passed testing on professionalism standards. *(continued)*

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