



# Symposium on Educational Excellence 2024

## Development of a medical simulation curriculum for OHSU internal medicine trainees

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### Keywords

Needs Assessment; Clinical Competence; Curriculum; Internal Medicine; Virtual Reality; High Fidelity Simulation Training; Acute Coronary Syndrome; Advanced Cardiac Life Support; Medical simulation; Clinical teaching

### Abstract

Simulation scenarios in medical education have proven to be an extremely valuable educational tool as they provide training as well as an opportunity for assessment of clinical competency. Internal medicine programs have incorporated high fidelity simulation to teach trainees procedural skills, advanced cardiac life support, and inpatient emergency scenarios. These curricula have demonstrated improved performance, self-reported clinical skills, and trainee confidence.

At the Portland VA medical center (PVAMC), Oregon Health and Science University (OHSU) internal medicine trainees participate in weekly “mock code” medical scenarios. The curriculum was originally introduced in 2021 as a means to improve trainee exposure to ACLS algorithms at the VA simulation center. Mock codes occur weekly for residents rotating on their three week rotation on medical wards at PVAMC. They are facilitated by a chief resident. In addition, nurses are encouraged to join to create a high fidelity environment, simulating a large multidisciplinary group that may respond to in-hospital critical events. Currently, there is no structured curriculum, and no structured evaluation methodology to better elucidate the efficacy of this curriculum.

### Aims

We aim to form a longitudinal simulation-based curriculum consisting of standardized and objective assessment, to improve trainee experience and performance during in-hospital critical events. In addition, to enhance fidelity, we will incorporate the use of virtual reality (VR) to simulate such events and augment learning for trainees. To develop this curriculum, we plan to utilize David Kerns six-step approach for curriculum development. We will begin by performing a needs assessment of internal medicine residents by conducting in-person interviews, anonymous surveys, as well as using pre-existing mock code evaluations that have been collected over the past several years by the current VA simulation center director.

Effective leadership positively impacted residents' well-being, individual growth, and psychological safety. <sup>iii</sup> We plan to create a longitudinal curriculum starting in the first year of residency. Quarterly sessions will occur during already-existing protected education time. Each of the five residency classes will participate in a level-specific session. By the end of a 5-year residency program, a resident will have completed 4 level-specific sessions per year, for a total of 20 sessions. These sessions will be designed to foster the effective leadership behaviors identified in the needs assessment. The sessions will include a combination of didactics, workshops, small groups, grand rounds, journal/book clubs, and audio/visual media. Assessments will occur on a quarterly and annual basis.

We then aim to develop a three-week iterative curriculum for residents. The primary learning objectives will be developed as dictated by the needs assessment, but likely will incorporate basic advanced cardiovascular life support (ACLS) concepts, acute management of acute coronary syndromes, life-threatening arrhythmias, and other pathologies. We will be incorporating virtual reality utilizing Oculus Rifts' obtained by the VA simulation center. This new curriculum will be delivered to internal medicine residents rotating at the VA on inpatient wards. We will then evaluate this curriculum through focus groups, written feedback, and follow up knowledge assessments to evaluate effectiveness of this curriculum as well as resident opinions. Through this curriculum, we aim to improve resident comfort and knowledge when dealing with complex in-hospital acute events such as cardiopulmonary arrest, and provide a safe and effective learning environment for trainees to improve their leadership and clinical skills in these scenarios.