



## Education

### DEVELOPING A CURRICULUM FOR EMERGENCY MEDICINE RESIDENCY ORIENTATION PROGRAMS

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**Abstract—Background:** New residents enter emergency medicine (EM) residency programs with varying EM experiences, which makes residency orientation programs challenging to design. There is a paucity of literature to support best practices. **Objective:** We report on a curriculum development project for EM residency orientation using the Kern Model. **Curriculum:** Components of the revised curriculum include administrative inculcation into the program; delivering skills and knowledge training to ensure an entering level of competence; setting expectations for learning in the overall residency curriculum; performing an introductory performance evaluation; and socialization into the program. **Results:** Post-implementation resident surveys found the new curriculum to be helpful in preparing them for the first year of training. **Conclusions:** The Kern Model was a relevant and useful method for redesigning a new-resident orientation curriculum. © 2014 Elsevier Inc.

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#### INTRODUCTION

The transition from medical school to residency has the potential to be difficult, and is especially so for emergency medicine (EM) residents, given the wide range of EM experiences that exist in medical schools. Although incoming residents typically have had significant exposure

to EM in medical school, the heterogeneity of their medical school EM experience potentially yields an incoming class with a wide variety of skills and knowledge across all the core competencies.

In a recent survey of EM clerkship directors, less than half of EM clerkship directors required students to perform basic procedures, and some reported as little as 6 h of lectures and 2 h of labs during the entire rotation (1). Only 7% of respondents reported using an objective standardized clinical evaluation (OSCE), even though this has become a standard evaluation method in many residency programs. This lack of a standardized curriculum and experience before residency makes preparing new EM interns for clinical responsibilities challenging.

At the residency level, many EM programs provide an orientation program (unpublished data, review of posted online residency curricula by study authors). Brillman et al. surveyed EM program directors on the prevalence and composition of their orientation program (2). Most consisted of a combination of didactic instruction, emergency department (ED) clinical work, and certificate courses, such as Advanced Cardiac Life Support (ACLS). The mean number of didactic instruction hours was 98 and the mean duration of orientation was 2.8 weeks. However, the duration, content, and goals among EM residency orientation programs varied greatly across responding programs.

In our institution, we previously developed a 4-week orientation program consisting of didactic instruction, ED clinical shifts with resident mentors, special courses such as ACLS and a 2-day ultrasound course, and procedural skills labs. The curriculum was developed a priori by the program director, faculty, and chief residents. Based on feedback from our residents and faculty over time, we recognized the importance of revising our orientation curriculum. The purpose of this article is to report that curriculum development process in the IDCRD (introduction, development, curriculum, results, and discussion) format and to offer a suggested EM orientation curriculum for use by others (3). This project was reviewed and approved for exemption by the Institutional Review Board at The George Washington University.

### DEVELOPMENT PROCESS

We based our process to revise our residency orientation curriculum on the Kern Model of curriculum development (4). This process involves six steps: problem identification and general needs assessment, needs assessment for targeted learners, establishing goals and objectives, selecting educational strategies, implementation, and evaluation and feedback.

A focus group of key educational faculty and chief residents met to define the general problems associated with integration of new interns into the program, and to develop an integration needs assessment that the orientation program should address (5). The focus group identified skills, experiences, and expectations that were best suited for an EM-focused intern orientation, and excluded those already covered in the general orientation for incoming residents given by the graduate medical education office at our institution, and those that could be delayed until later in residency training.

To complement the findings of our focus group, a more formalized needs assessment was undertaken with both the faculty and current residents to target the learners' needs. The faculty participated in an anonymous electronic survey asking their opinions on specific skills and knowledge areas they believed an intern should possess early in their training. Likewise, current residents were surveyed with a copy of the existing orientation curriculum, asking them to evaluate which portions they found helpful as they progressed through training, and what types of content delivery format they preferred (lecture, laboratory, simulation, small group work, etc.). Lastly, the residency leadership, with knowledge of past intern performance and evaluations, identified specific competency domains that should be addressed during intern orientation.

The skills most highly rated by faculty as important for interns to possess early in training included effective

communication, introductory-level procedural competence, interpreting electrocardiograms (ECG) and chest x-rays, developing a differential diagnosis and early management plan for common ED chief complaints, finding answers to clinical questions quickly, prioritizing tasks and workflow in the ED, and dealing with shift work. Based on resident feedback, most content areas covered in the existing orientation were believed to be important, however, trainees strongly preferred skills labs, simulation sessions, and small-group learning over lectures. Residents also emphasized the need for orientation to make them comfortable and "functional" in the ED, to counteract the stress of learning their new job. The residency leadership recognized that the recent postgraduate year 1 (PGY-1) classes had difficulty integrating a reading plan and independent study into their learning.

This process confirmed the need for a robust orientation program to prepare interns with diverse prior EM experience for clinical practice, and provided a framework of orientation goals:

1. To ensure a minimum level of knowledge for common ED chief complaints (i.e., chest pain) and their initial management.
2. To provide a general approach to ED procedures and introductory-level training in common procedures.
3. To provide sufficient skills training for interns independently to institute basic life-saving interventions, while awaiting assistance from a supervising physician.
4. To teach the use of evidence-based medicine (EBM) skills in the clinical setting, and to support patient-centered, self-directed learning very early in training.
5. To set expectations for group and self-directed learning and describe the evaluation process applied during residency.
6. To socialize the interns into the EM community at our hospital.
7. To provide feedback on each learner's current level of EM skills and knowledge and use as a basis to create an individualized learning plan.

### NEW CURRICULUM

The newly developed orientation curriculum was crafted to address the goals using appropriate strategies:

1. Administrative orientation sessions: With the goal of improving intern functionality, these sessions include tours of the clinical sites, covering the "where, what, and how" issues of each location, identification badging, and credentialing. Mandatory training in the use of the electronic medical

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