

## Resources for clinical learning environment orientation

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### ABSTRACT

**Introduction:** Each clinical learning environment (CLE) requires learners to navigate a different set of complex interactions to engage in safe patient care while learning from real patients. Orientation forms the foundation for learning, yet CLE models in the literature are primarily written for an educator audience and practical advice for orienting learners to a new CLE is limited. To address this gap, we designed resources to support both supervisors and learners in the orientation process.

**Materials/Methods:** We reviewed the CLE literature to select critical content for orientation and interviewed high performing residents to identify their best practices. We synthesized the literature and resident interviews into a visually appealing and easy to digest infographic designed to simultaneously remind teachers of the critical areas to cover in orientation and empower learners to ask about them. We integrated these principles into an online module for Graduate Medical Education onboarding and surveyed users about how well they could meet the module learning objectives.

**Results:** We organized the literature review and resident advice regarding questions learners should ask about a new CLE into the typical question categories (why, who, what, when, where, and how) and described strategies for orientation to each category. Our infographic has been incorporated into CLE orientation for multiple types of learners at our institution. After completing the orientation module, 112/124(90%) residents indicated that they could, 'Orient yourself or a learner to a clinical learning environment using orientation questions' moderately to extremely well.

**Discussion:** We developed resources that can be used by educators to create orientation materials and by learners to ensure they understand important features, resources, and expectations in a new CLE. Because the foundational principles of CLE apply to a variety of clinical settings and learner types, the resources may be broadly applicable.

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## Introduction

To safely and constructively engage in a clinical learning environment (CLE), health professions learners navigate complex interactions between patient care, learning from real patients, and practice improvement [1]. In contrast to the classroom, learning within the CLE is more opportunistic and dependent on the setting, patients, supervisors, and learner needs [2]. The variability of CLEs challenges clinical learners to recurrently acculturate to new roles, relationships, expectations, and processes [3].

The evolving CLE conceptual frameworks acknowledge the complexity and inter-relatedness of CLE components [2,4,5]. The CLE literature, primarily targeted toward educators, may have limited practical utility for learners, and only a few studies superficially mention orientation concepts [6,7]. To address this gap, we developed resources to help supervisors guide CLE orientation and learners to understand important CLE components and elicit further orientation information.

## Materials/methods

We convened a development team representing multiple clinical disciplines, professional backgrounds, and experience educating medical students and post-graduate physician trainees. We searched the literature for articles characterizing the CLE and selected those that could inform learner orientation. To organize the content in a learner-centered format, we translated each component of the selected CLE models into a question that a learner might ask their supervisor as they acclimate to a new CLE which we will call 'orientation questions.' Using directed qualitative content analysis, we categorized the CLE components according to the typical question types (who, what, when, where, why, and how) and summarized each category.

Following exemption from review by Dartmouth Committee for Protection of Human Subjects, we interviewed 9 first and second year residents (3 General Surgery, 3 Internal Medicine, 1 Radiology, 1 Urology, and 1 Pediatrics), who were identified by their

programs as ‘high-performing.’ A resident peer (EC) used a structured interview guide to ask residents about how they orient themselves and others to a new CLE. We recorded and transcribed the interviews, identified concepts that should be added to our list of questions, and summarized the resident advice.

We used the orientation questions to create an infographic that captures critical CLE orientation topics in an easy to understand and visually appealing format applicable to a variety of clinical settings (clinic, emergency room, inpatient unit, and operating room). We embedded the resources into an online module for Graduate Medical Education (GME) onboarding, which was approved by the GME curriculum committee. Residents evaluated how well the module met the learning objectives on a 5-point Likert scale (not at all to extremely).

## Results

A PubMed search for (‘clinical learning environment’ OR ‘workplace learning’) AND ‘medical education,’ yielded 430 articles about humans and in English. We reviewed titles and abstracts for relevance, which yielded 48 articles from which we identified 13 articles with models to describe the CLE. The selected studies included learner perspectives [6-10], clinical observation[11], literature review [1,12,13], and expert consensus [2,14-16].

All interviewees reported that their first step to prepare for a new CLE was to talk to a resident who completed the rotation previously, including asking ‘what’ their responsibilities are, ‘where’ to find resources, ‘when’ things happen, ‘how’ to complete tasks and ‘who’ to ask for help. Interestingly, the majority of residents stated ‘attending preference’ was critical to learn prior to starting a new rotation, yet this feature was not identified in the CLE models in our literature review.

Residents provided the following advice for learners starting a new CLE.

- Talk with residents who have completed the rotation previously
- Read orientation materials
- Learn about attending preferences
- Review skills for common procedures
- Arrive early on the first day
- Develop a system or routine
- Make a to-do list
- Take responsibility for patient care
- Ask for help when you don’t know something

A description of the question categories derived from our literature review and advice from resident interviews are summarized in Table 1, with suggestions for addressing the questions in orientation.

The infographic (supplement 1) has been used by attending, fellow, resident, nurse practitioner, and

**Table 1.** Question themes and strategies to guide orientation.

Questions	Theme descriptions	Orientation approaches
<b>Why</b> am I here?	Learners identify educational goals and opportunities, and the rationale behind the structure of the clinical service	<ul style="list-style-type: none"> <li>• Use probing questions to explore learner interests and goals</li> <li>• Have learners write goals and share them with team members</li> </ul>
<b>Who</b> is the team?	Team members, roles, and relationships	<ul style="list-style-type: none"> <li>• Introduce team members and have them explain their roles</li> <li>• Post pictures of staff members and roles on the wall and/or include in orientation materials</li> <li>• Provide an overview of the patient population served</li> </ul>
<b>What</b> do I do? <b>What</b> are my expectations, needs, and limits?	Learner roles, expectations, limits and situational factors, tools, and resources related to their responsibilities	<ul style="list-style-type: none"> <li>• Describe learners’ responsibilities and educational opportunities</li> <li>• Emphasize the importance of recognizing limits and asking questions</li> <li>• Give examples of situations that may require asking for help and how to reach out for help</li> <li>• Describe the approach to assessment of the learner</li> </ul>
<b>Where</b> are things?	Location of patients and resources in the physical workplace as well as data and information in virtual space	<ul style="list-style-type: none"> <li>• Create a map of the clinical learning environment</li> <li>• Review a patient chart in the electronic medical record with the learner</li> <li>• Give an overview of electronic or hard copy resources and policies</li> </ul>
<b>When</b> do things happen?	Clinical and educational schedules	<ul style="list-style-type: none"> <li>• Create a schedule or calendar</li> <li>• Develop workflow diagrams for common patient care processes</li> <li>• Include time for mutual feedback</li> </ul>
<b>How</b> do I navigate patient care and learning?	Navigating the healthcare system, patient safety, learning, and continuous improvement	<ul style="list-style-type: none"> <li>• Share tips of how to get things done</li> <li>• Deliver tutorials for specific clinical skills</li> <li>• Discuss integration of work responsibilities and learning</li> </ul>

medical assistant supervisors to structure orientation or improve orientation practices and by our medical school to prepare students for the transition to clerkships. Supplement 2 summarizes suggested uses of the infographic.

Following the onboarding module, 112/124(90%) residents indicated that they could, 'Orient yourself or a learner to a clinical learning environment using orientation questions' moderately to extremely well.

## Discussion

Educational leaders and clinical supervisors can structure orientation for learners transitioning to a new CLE using the resources we designed, which are grounded in the literature and the expertise of our GME community. The topics covered in these resources align with the limited literature about orientation [6,7] and existing CLE frameworks [2,4,5,17]. A simple, visually appealing guide that reminds supervisors and learners of important orientation topics may support a comprehensive orientation, particularly when time is limited. The foundational principles of CLE orientation are transferable, and we designed the resources to be used across a range of clinical settings and learner types.

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