

How Do Postgraduate Trainees Prepare for New Clinical Learning Environments?

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ABSTRACT

Background Transitioning to a new clinical learning environment (CLE) requires learning new skills, roles, teams, workflows, and culture. We previously identified activities and questions to guide orientation in the categories of *who*, *what*, *where*, *when*, *why*, and *how*. There is limited literature about how learners plan for this transition.

Objective Describe how postgraduate trainees prepare for a clinical rotation, based on qualitative analysis of narrative responses within a simulated orientation experience.

Methods In June 2018, incoming residents and fellows in multiple specialties at Dartmouth Hitchcock Medical Center completed an online simulated orientation that asked how they intended to prepare for their first rotation. We used directed content analysis to code their anonymously collected responses using the orientation activities and question categories from our prior study. We used open coding to describe additional themes.

Results Narrative responses were available for 97% (116 of 120) of learners. While 46% (53 of 116) of learners listed preparations related to *what* happens in the CLE, responses fitting into other question categories were less frequent: *who* (9%, 11 of 116), *where* (7%, 8 of 116), *when* (4%, 5 of 116), *why* (<1%, 1 of 116), and *how* (0%, 0 of 116). Learners also infrequently described activities to aid the transition: reading orientation materials (11%, 13 of 116), speaking with a colleague (11%, 13 of 116), and arriving early (3%, 3 of 116). They more frequently commented on content reading (40%, 46 of 116), asking for advice (28%, 33 of 116), and self-care (12%, 14 of 116).

Conclusions When describing preparation for a new CLE, residents focused on tasks in the *what* category more than understanding the system and learning goals in other categories.

Introduction

Residents face numerous challenges when they transition to new clinical learning environments (CLEs), including systems complexities, team dynamics, and workload.¹ When they struggle to transition, learning and patient care suffer.²

The systems complexity of CLEs, with its many components and interactions, may be viewed from different perspectives that may be difficult for a newcomer to understand and apply.³ Learners may benefit from approaching new CLEs with a simple framework that can evolve as they deepen their understanding of the complexity. One conceptual model describes nested CLE domains, including a personal (individual) level nested within relational, curricular, and ultimately structural levels.⁴ The nature of and interactions between domains may not be addressed in orientations that focus on computer systems, logistics, clinical procedures, emergencies, and other hands-on practice.⁵

There is limited literature about how to help learners prepare for new CLEs.⁶ One study summarized learner perceptions of orientation,⁷ but did not explore how learners approach new CLEs. In our prior study, the high-performing senior residents interviewed universally reported that they talked with a resident who completed the rotation previously. They described “survival skills” for managing workload, understanding attending expectations and preferences, and using resources to support learning and organization, as well as the importance of arriving early the first day, taking ownership, and asking for help.⁶

We aimed to describe how a broad sample of new postgraduate trainees prepare for clinical rotations based on written descriptions within an online simulated orientation experience. Program leaders can use this study to align CLE orientation with learner priorities, plans for transitions, and aspects needing more explicit guidance.

Methods

Setting and Participants

We created an online simulated orientation experience (see online supplementary data), which began

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Editor's Note: The online version of this article contains the online simulated orientation experience.

with an open-ended question, “How do you prepare for beginning a new rotation?” The simulation was assigned to all 120 incoming residents and fellows prior to starting at Dartmouth Hitchcock Medical Center in the summer of 2018. Narrative responses were collected anonymously.

Investigator Background and Stance

K.A.G. and K.A.K. are medical educators with more than 15 years of experience working with and orienting medical students and residents. E.C. was a senior internal medicine resident in a Medical Educator Pathway. We all believe that being proactive about preparing to enter a new CLE benefits learners, supervisors, and patients. Our prior work informed our perspectives about the important preparation strategies, but we did not know prior to this study how trainees implement those strategies or what other approaches they use.

Theoretical Constructs and Analysis

We chose a directed approach to content analysis⁸ of the narrative responses to further explore how learners apply the orientation topics from our prior study.⁶ Drawing on a literature review, the expertise of the Graduate Medical Education Curriculum Committee at Dartmouth Hitchcock Medical Center, and insights from high-performing residents, we identified 3 pre-rotation activities consistently characterized as important for preparing for a new CLE: read orientation materials, seek peer-to-peer guidance, and arrive early on the first day. The questions from our prior study are summarized in the BOX and grouped in the following categories: *who*, *what*, *when*, *where*, *how*, and *why*.⁶ Operational definitions for each category were derived from the key words within the questions.

The directed content analysis included both deductive and inductive approaches to systematically categorize responses using the steps outlined by Cho and Lee.⁹ Two investigators (K.A.K., E.C.) first used a deductive approach to categorize each narrative response into the predetermined categories using the codebook of operational definitions, coding each response into as many of the categories as applied. We then used an inductive approach of open coding to identify additional themes described in the responses. Another investigator (K.A.G.) compared coding between the 2 investigators. Discrepancies and additional codes were discussed by all 3 investigators to reach consensus and collaboratively define the new codes. Responses that did not fit into any of the defined codes were categorized as “other.” Due to the breadth of responses in the *what* category,

BOX Clinical Learning Environment Orientation Questions by Category

WHY am I here?

- Why did my program choose this clinical learning environment for an educational experience?
- Why is this experience valuable to me?
- Why might this setting help me address my learning needs and achieve my goals?
- Why is the service organized as it is?

WHO is the team?

- Who are the patients?
- Who are my supervisors? Who do I turn to with different types of questions?
- Who are the other members of the team, their roles, and working relationships (culture)?

WHAT do I do? What are my expectations, limits, and needs?

- What are the expectations of my role? What should I be doing? How is this different from other roles I have?
- What are my skills/competencies? What can I do safely?
- What are my limits? What activities do I need help with or are outside my scope of practice?
- What factors impact my ability to perform my responsibilities (eg, fatigue, workload, support, etc)?
- What are the tools and resources?

WHERE are things?

- Where does patient care happen?
- Where are the patient data?
- Where are the workspaces?
- Where are the resources?

WHEN do things happen?

- When do various activities happen in the day and in the cycle of patient care?
- When do I need to stop and think, look something up, or ask for help?
- When can I make time for deeper learning?

HOW do I navigate patient care and learning?

- How do I learn how to navigate the health care system to complete my responsibilities?
- How do I figure out what to do based on my experiences, others' expertise, and the literature?
- How do I communicate about my limits and when I need help?
- How can I improve my learning by seeking out high yield learning opportunities?
- How do I get and use feedback to improve?

subcategories were created to differentiate the ways that were described to learn rotation information. Once agreement was reached on the definitions of the additional codes, the 2 investigators (K.A.K., E.C.)

used them to recode all responses, which left only a few discrepancies that were resolved by another discussion among all investigators.

We fostered trustworthiness in our methods through credibility and dependability.⁹ To increase credibility, we used triangulation with the findings in our prior study,⁶ had 2 investigators independently code and discuss the data, and showed representative quotes. To increase dependability, we kept an audit trail to record each decision and rationale.

This study was exempted from review by the Dartmouth Health Human Research Protection Program.

Results

Of the 120 learners (26 incoming fellows and 94 incoming residents) assigned the simulation, 118 (98%) completed it. We were able to collect narrative responses for 116 learners (97%). We could not differentiate data from residents and fellows.

The TABLE summarizes narrative responses related to the question categories, pre-rotation activities, and other themes. Nearly half of the respondents commented on *What are my expectations, limits, and needs?* (46%, 53 of 116), whereas none commented on *How do I navigate patient care and learning?* and only <1% (1 of 116) commented on *Why am I here?* Within the *what* responses, 11% (13 of 116) commented on each of the targeted pre-rotation activities of *reading orientation materials* and *seeking peer guidance*. An additional 28% (33 of 116) referenced *asking for advice or help*. Only 3% (3 of 116) commented on the third pre-rotation activity, *arriving early*. Additional common themes were *content reading* (40%, 46 of 116), *nonspecific reading* (19%, 22 of 116), and *self-care* (12%, 14 of 116).

Discussion

Trainee responses within our simulated orientation experience focused more on *what* they planned to do during the rotation than *how* to do it or *why* they were doing it and infrequently described important pre-rotation activities. More learners described *content reading* than *reading orientation materials*, underscoring their focus on medical knowledge and patient management more than learning about systems and responsibilities. With rising attention to well-being, some learners commented on self-care as a part of their rotation preparation.

The minimal responses in our *why* and *how* categories indicate that learners may not prioritize these topics. They may learn topics in the *how* category experientially during the rotation instead of prior to it.

However, learners could explore the *why* category prior to the rotation by considering the relevance of the rotation to their professional development, identifying learning needs, and setting goals. Knowing that residents may need prompting, supervisors could ask about learning needs and help create a learning plan that maximizes the learning value of the CLE.¹⁰ Empowering learners to take ownership of their education may promote more positive learning outcomes and emotional regulation.¹¹

Rotation directors can help trainees by providing guidance about what to read and the importance of materials designed for orientation. In a focus group study, students identified factors that made clerkship handbooks useful: being concise, highlighting important content, and including information about assessment, study guidance, logistics, timetables, and cultural norms.¹² We developed an infographic with questions that learners can ask and that supervisors can answer to orient to a new CLE.⁶

Peer-to-peer guidance is also helpful to elucidate the implicit aspects of a CLE and has educational benefits for both parties, such as developing communication and professionalism skills.¹³ An observational study of medical students giving each other advice about the clerkship they just completed identified that students prioritize topics similar to our findings, including workplace culture, content learning, logistics, and work/life balance.¹⁴ In a systematic review, peer mentorship has also been shown to help residents with psychosocial support, motivation, and improved satisfaction with their programs.¹⁵

One of the limitations of this study is the heterogeneity of the sample, which included both residents and fellows. The data were also based on a simulated experience, which may not fully translate to a real-world setting. Finally, the short narrative responses may not fully capture all the actions learners would take to prepare. Observations of learners in action and in-depth interviews could provide more detail about what residents do in real life and why. We plan to examine the impact of the simulation on learner plans to prepare for their first rotation, improve our orientation processes by providing more guidance, and integrate the online module earlier in medical school.

Conclusions

We describe resident and fellow approaches to preparing for a new CLE based on responses within an online simulated orientation experience. Without prompting, trainees were focused on immediate tasks more than understanding the system and planning for their learning.

TABLE

Number of Responses by Category and Representative Comments to the Question, “How Do You Prepare for Beginning a New Rotation?”

Theme	N (%)	Representative Comments
Question category		
What	53 (46)	“Ask colleagues for tips/common situations, procedures, etc to be aware of.” “Discuss expectations, goals, and available resources.”
Who	11 (9)	“Read about the patients on the sign out sheet.” “I try to familiarize myself with the staff for that rotation.”
Where	8 (7)	“I try to familiarize myself with the ward.” “Get familiar with the workplace.”
When	5 (4)	“Figure out my schedule.” “Understand the workflow of the unit.”
Why	1 (<1)	“Make a list of personal goals to achieve during rotation.”
How	0 (0)	N/A
Important pre-rotation activities		
Read orientation materials	13 (11)	“Review objectives sent prior to rotation.” “Read about the specific features of the rotation.” “Read instructions given by program.” “Review applicable protocols and requirements and expectations.” “Review rotation objectives/expectations if any are given.”
Seek peer-to-peer guidance	13 (11)	“Talk to the outgoing intern/resident about the rotation.” “Discuss strategies for success and expectations with students who have recently completed the rotation.” “Speak with classmates who have completed the rotation prior to starting it myself to get their advice and general idea of how things are run.” “Ask other people who have done the rotation for tips/tricks/advice.”
Arrive early	4 (3)	“Arrive early to read about patients and preview.” “Find out where I need to be day one and at what time.”
Additional themes		
Content reading	46 (40)	“I prepare by reading either recommended chapters, texts, or up-to-date articles on the most common conditions for that rotation.” “I read about the most common types of pathologies I will be encountering.” “Review pertinent reading materials pertaining to the rotation topics.” “Read ACOG practice bulletins.”
Ask for advice	33 (28)	“Ask my faculty what I should expect and if they have any suggestions for how to prepare.” “Talk to a supervisor for advice and what study aids to use.” “Talk to other trainees about expectations, anything I should read or study in advance, etc.” “Ask people who might have insight [on] what would be the most effective way to prepare.”
Unspecified reading	22 (19)	“Do some prereading.” “Read relevant material.”
Self-care	14 (12)	“Examine calendar + plan how I will exercise, socialize, and sleep around work to stay balanced.” “Clear my mind of any problems with previous rotation and go in with an open mind to learn as much as I can from every experience even in those rotations that are not in my interest.” “Rest, spending time with family, catching up on sleep.” “Arrive well rested and excited to learn.”
General preparation	7 (6)	“Prepare mentally.” “Practice any required skills.”
Collect resources	3 (3)	“Make list of potential study materials to look into.” “Purchase books if needed.”
Make a checklist	1 (<1)	“I have a checklist!”
Other	5 (4)	“Pay attention to details.” “Work hard.”

Abbreviation: ACOG, American College of Obstetricians and Gynecologists.

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