CLER Special Report

SPONSORING INSTITUTIONS WITH CLINICAL LEARNING ENVIRONMENTS IN UNIQUE SETTINGS

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ACGME
Accreditation Council for
Graduate Medical Education

CLER
Clinical Learning
Environment Review

DEDICATION

The Accreditation Council for Graduate Medical Education thanks the designated institutional officials at its accredited Sponsoring Institutions, as well as the executive leaders of the participating hospitals, medical centers, ambulatory care sites, and medical examiner offices for graciously hosting this set of Clinical Learning Environment Review Site Visits. We appreciate the effort that went into arranging the visits and ensuring open access to residents, fellows, faculty members, and other staff members. It was a privilege to spend time in your organizations, and we recognize your dedication to continually improving graduate medical education and patient care.

TABLE OF CONTENTS

NOTE FROM THE CLER EVALUATION COMMITTEE AND THE CLER PROGRAM

This report of findings from the Clinical Learning Environment Review (CLER) Program comprises data from initial visits to Sponsoring Institutions accredited by the Accreditation Council for Graduate Medical Education (ACGME) with clinical learning environments in unique settings. As with the 2018 and 2019 reports of the larger and smaller Sponsoring Institutions, respectively, this report reflects findings from CLER Protocol 2.0. Therefore, we have retained relevant and applicable information from the *CLER National Report of Findings 2018* and *CLER National Report of Findings 2019* to facilitate readers' ability to easily:

- crosswalk information between all reports related to Protocol 2.0

- understand implications of the CLER Program's findings as they relate to various clinical settings

As a result, portions of this report are reprinted and adapted from previous reports with permission from the *Journal of Graduate Medical Education* and the ACGME. The complete 2016 and 2018 *National Reports* are available at https://www.acgme.org/What-We-Do/Initiatives/Clinical-Learning-Environment-Review-CLER/Resources-and-Documents.

Beginning with the next national report, we look forward to presenting all of CLER's findings in a single biennial report. We are grateful for the graduate medical education community's ongoing support for these important efforts.

ACKNOWLEDGMENTS

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INTRODUCTION

The Accreditation Council for Graduate Medical Education (ACGME) established the Clinical Learning Environment Review (CLER) Program in 2012.[1,2] The CLER Program provides graduate medical education (GME) leaders and executive leaders of hospitals, medical centers, and other clinical settings with formative feedback aimed at improving patient care while optimizing the clinical learning environment (CLE) in 6 CLER Focus Areas[3]:

- Patient Safety

- Health Care Quality (including health care disparities)

- Care Transitions

- Supervision

- Fatigue Management, Mitigation, and Duty Hours

- Professionalism

The CLER Program refers to CLEs as living, dynamic entities—the embodiment of all of the individuals within these settings that influence and imprint upon fellows and residents. The CLER Program recognizes that, although there are shared elements among CLEs, each has a unique set of internal and external factors that influence their strategic goals for improving patient care.

In the 2016 and 2018 *National Reports*,[4,5] the CLER Program reported findings from site visits to CLEs of larger Sponsoring Institutions (ie, those with 3 or more core residency programs). In August 2019, the CLER Program published a report of findings from the first set of CLER site visits to 270 participating sites of smaller Sponsoring Institutions (ie, those with 2 or fewer core residency programs).[6]

This current report completes the first set of site visit findings to CLEs of the smaller Sponsoring Institutions, focusing specifically on those Sponsoring Institutions with unique characteristics such as very small numbers of residents, fellows, and faculty members, or unique educational experiences such as those associated with preventive medicine (eg, aerospace medicine, aviation medicine).

MODIFICATIONS TO THE SITE VISIT PROTOCOL FOR THESE UNIQUE SETTINGS

For the CLER site visits that informed this report, the CLER Program modified its site visit process from previous cycles to accommodate the unique features of this group of Sponsoring Institutions. In particular, the CLER Program recognized the CLEs associated with these Sponsoring Institutions were often ambulatory settings that were limited in size—both in physical space and in numbers of residents, fellows, faculty members, and other personnel. As such, the CLER Program sought to minimize the burden associated with hosting the site visit, while retaining the essential elements of the site visit process to inform feedback across the 6 CLER Focus Areas. Overall, the site visit structure and protocol retained the essence of those used on visits to CLEs of the larger Sponsoring Institutions, with the following modifications made to accommodate some of the unique features of these CLEs:

- The site visit agenda was modified to a 1-day, 6-hour visit. As part of the modifications, the patient safety and quality leaders joined the senior leadership meeting and the faculty members and program directors were combined into a single session of GME leaders.

- In Sponsoring Institutions with only 1 residency or fellowship program, if the program director was also the designated institutional official (DIO), the program director attended the executive leadership meetings to represent the DIO position and assigned a designee (often an associate program director) for the meeting with GME leaders.

- Although all 6 Focus Areas were addressed during the group meetings, the number of questions in each meeting was reduced to accommodate the shortened agenda.

- For the majority of Sponsoring Institutions where the site visit was exclusive to the ambulatory setting, the protocol questions and scenarios were modified to fit the setting.

AN IMPORTANT NOTE FOR THIS REPORT

This report contains aggregate, de-identified data not included in the CLER Program's verbal and written reports to the individual clinical sites. Because interview sessions for CLEs covered in this report often included only one or two participants, the CLER Program routinely redacted individual reports to help maintain anonymity when information was highly sensitive. As a result, individual site visit reports may have been more neutral or positive in tone than what appears in the aggregate findings in the following sections. GME and executive leaders are encouraged to read each of the sections carefully, as many of the challenges identified in this report may also apply to their CLE even if the challenges were not highlighted in their individual site visit report.

For a more detailed description of the protocol and site visit process, please see the Methods section that follows.

METHODOLOGY

The CLER Program conducted the first set of CLER site visits to the 58 ACGME-accredited Sponsoring Institutions with single fellowship or preventive medicine programs from September 26, 2017, to May 2, 2018. For the majority of these Sponsoring Institutions, the CLER site visit occurred at the ambulatory care site that served as the major participating clinical site for the Sponsoring Institution.

Collectively, the Sponsoring Institutions visited oversaw 63 fellowship and residency programs (0.6 percent of all ACGME programs) and 225 fellows and residents (0.2 percent of all fellows and residents in ACGME-accredited programs).[a] Appendix A provides additional information on the general characteristics of these Sponsoring Institutions (eg, type of Sponsoring Institutions, number of programs) compared with all ACGME-accredited Sponsoring Institutions.

Approximately 36 percent of the CLEs were located in the Southern region of the United States, 24.1 percent in the West, 20.7 percent in the Midwest, and 19.0 percent in the Northeast. The majority (36.2 percent) were non-government, not-for-profit organizations; 31.0 percent were investor-owned, for-profit; 25.9 percent were government, non-federal; and 6.9 percent were government, federal.

In total, the CLER site visit teams interviewed more than 200 members of executive leadership, including chief executive officers (CEOs); 111 fellows and residents; and 165 core faculty members and program directors of ACGME-accredited programs in the group meetings. Additionally, the CLER teams interviewed a few hundred residents, fellows, faculty members, nurses, pharmacists, social workers, and other health care professionals while on walking rounds in the clinical areas.

The aggregated findings in this report reflect a mixed methods approach (ie, both quantitative and qualitative information gathering and analysis), which the CLER Program used to form a comprehensive base of evidence on how the nation's CLEs engage fellows and residents in the CLER Focus Areas.

The following sections offer an overview of the CLER Program's methodology, highlighting minor modifications made to accommodate the unique settings that were the focus of this set of site visits. Detailed descriptions of the methodology of the CLER Program are available in CLER's full *National Report*.[6]

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[a] Source: The ACGME Data Resource Book. The ACGME Data Resource Book contains the most recent data on the programs, institutions, and physicians in graduate medical education as reported by all medical residency Sponsoring Institutions and ACGME-accredited programs.

CLER SITE VISIT PROTOCOL

In general, the CLER Program designed its site visit protocol to be the same for all CLER site visits, with minor modifications to the standard protocol (eg, length of the site visit, site visit agenda) as needed to accommodate the setting's physical size and its total number of residents, faculty members, and other health care professionals. Modifications to the standard protocol for the current set of site visits are noted appropriately in the sections that follow.

Figure 1 details the structured schedule of events for each site visit, which was shorter and had fewer CLER Field Representatives than visits to CLEs of larger Sponsoring Institutions—1 CLER Field Representative (salaried employee of the ACGME) conducted each visit, and the visits lasted 1 day (6 hours total).

Schematic Flow of a CLER Site Visit
Modified for Site Visits to Clinical Learning Environments of Sponsoring Institutions in Unique Settings

Meeting with Residents and Fellows

Meeting with Core Faculty Members and Program Directors

WALKING ROUND[b]

Initial Meeting with Executive Leadership[a]

Initial Drafting of Site Visit Findings

Team Preparation Meeting

Exit Meeting with Executive Leadership[a]

Foundational Learning

Exploration and Inquiry

Review, Clarification, and Feedback

Three Phases of the CLER Site Visit

[a] Executive leadership meetings included the participating site's chief executive officer and designated institutional official (required), as well as other members of executive leadership (eg, chief medical officer, chief nursing officer).

[b] Each walking round has a resident or fellow host/escort and opportunity for contact with other members of the clinical care team.
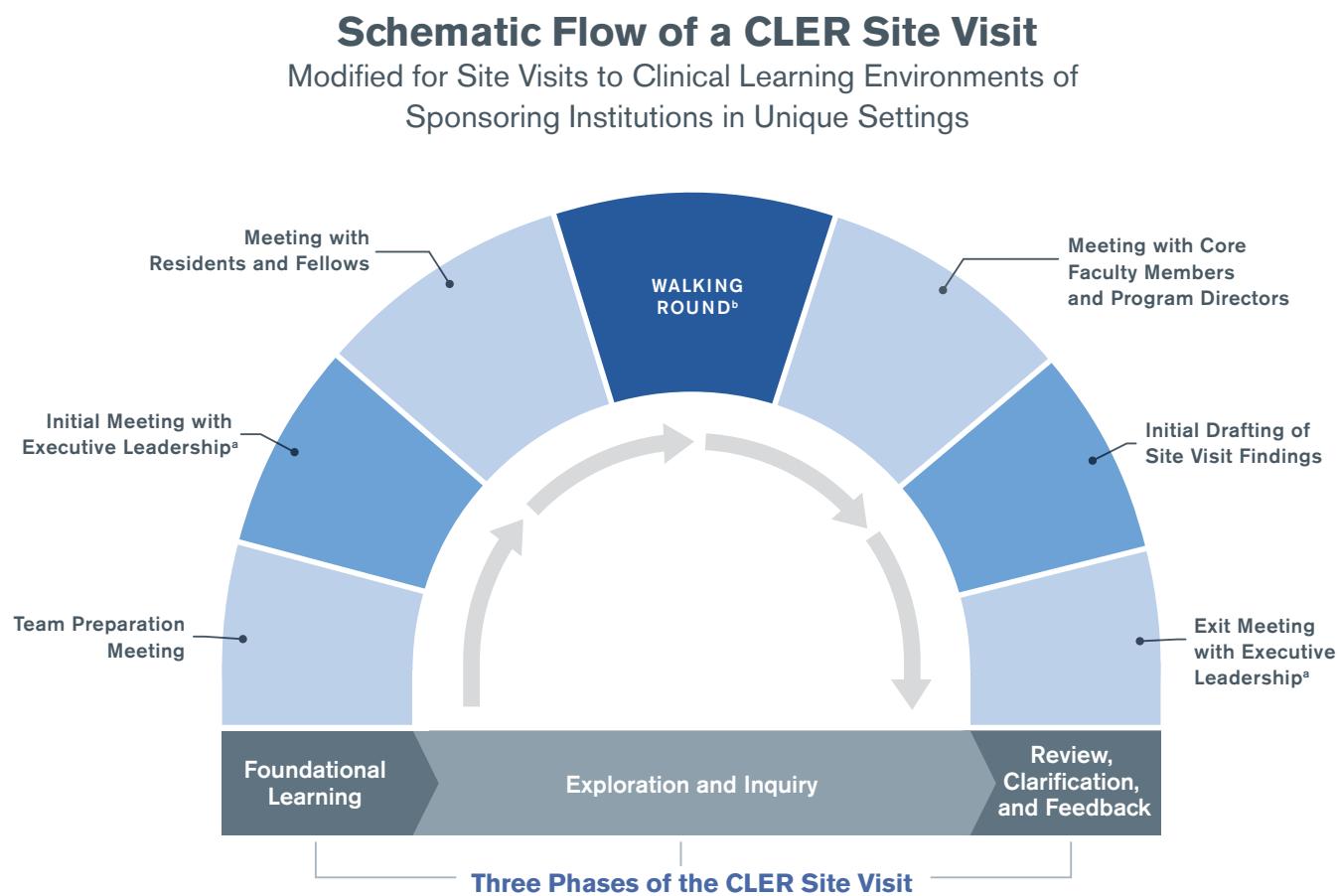
Figure 1 Schematic Flow of a Clinical Learning Environment Review (CLER) Site Visit to the Sponsoring Institutions with Clinical Learning Environments in Unique Settings

For these 1-day visits, the CLER Field Representatives conducted group interviews in the same order: (1) an initial group interview with the CEO, members of the executive team (eg, chief medical officer, chief nursing officer), the DIO, the patient safety and quality leader(s), and a resident representative; (2) a group interview with residents and/or fellows; (3) a group interview with faculty members and program directors; and (4) an exit meeting with the CEO, members of the executive team, the DIO, the patient safety and quality leader(s), and a resident representative. The CLER Field Representatives conducted all group interviews in a quiet location without interruption and ensured that the interviews did not exceed 45 minutes.

The fellow and resident group interviews comprised 1 to 5 peer-selected participants per session (postgraduate year 2 or higher to ensure sufficient clinical experience). For the group interviews with faculty members and program directors, the CLER Program instructed the DIO to invite participants to attend the group interviews. Each session comprised 1 to 9 clinical faculty members and program directors; if the program director was also the DIO, the program director attended the executive leadership meetings and assigned a designee (eg, an associate program director) to attend the session. Participants in each group broadly represented ACGME-accredited programs at the CLE.

Additionally, the CLER Field Representatives conducted a walking round (1 hour total), escorted by a senior or chief resident or fellow, to observe the clinical site. The CLER Program asked the DIO to select a resident or fellow to guide each CLER Field Representative. For sites with a small number of fellows and residents, those who participated in the fellow and resident group meeting or who served as the resident representative in the executive leadership meeting were also permitted to serve as escorts for the walking rounds.

The CLER Program designed the walking round to facilitate random, impromptu interviews with residents, fellows, nurses, and other health care professionals at the clinical site. The aims of the walking round was to (1) triangulate, confirm, and cross-check findings from the group interviews and (2) glean new information on residents' and fellows' experiences across the 6 CLER Focus Areas. The walking round provided important information that could either confirm or conflict with the information gathered in group interviews.

At the exit meeting, the CLER Field Representatives shared an oral report with executive leadership, which covered initial feedback on the 6 CLER Focus Areas. The written report, delivered approximately 6 to 8 weeks after the site visit, reflected the same topics but with a more detailed set of observations. The intention of both the oral and the written report was to provide formative information that would help executive leadership assess their practices in the Focus Areas, inform fellow and resident training, and guide improvements in the CLE to ensure high-quality patient care.

DATA COLLECTION

To conduct the group interviews, the CLER Field Representatives used a structured questionnaire developed under the guidance of experts in GME and/or the 6 CLER Focus Areas. The questionnaires contained both closed- and open-ended questions. All 6 Focus Areas were addressed during the group meetings; however, the number of questions in each meeting was reduced from the standard CLER site visit protocol to accommodate the shortened agenda. For the site visits exclusive to the ambulatory care setting, the protocol questions and scenarios were also modified to fit the setting while keeping the essence of the questions to allow for comparability across settings.

CLER Field Representatives conducted group interviews with the physician groups using a computerized audience response system (Keypoint Interactive version 2.6.6, Innovision Inc, Commerce, MI) that allowed for anonymous answers to closed-ended questions. CLER Field Representatives documented responses to open-ended questions qualitatively. The two surveys—one for fellows and residents and the other for faculty members and program directors—consisted of 16 and 14 closed-ended questions and 12 and 13 open-ended questions, respectively.

CLER Field Representatives documented all responses qualitatively for the group interview with the CEO, members of the executive team, the DIO, the patient safety and quality leader(s), and the resident representative (24 questions).

DATA ANALYSIS

Descriptive Statistics and Analysis of Audience Response System Data

Descriptive statistics were used to summarize and describe distribution and general characteristics of Sponsoring Institutions, CLEs, and physician groups interviewed.

Chi-square analysis was used to compare fellow and resident responses and to identify any relationships in responses by gender, residency year, and specialty grouping. Chi-square analysis was also used to explore if differences were associated with the following CLE characteristics: regional location and type of ownership. P values of .05 or less were considered statistically significant. All statistical analyses were conducted using SPSS Statistics version 22.0 (IBM Corp, Armonk, NY).

Of note, statistical significance does not always imply practical significance. For example, differences in responses by residency year may be statistically significant but the differences may not be meaningful or large enough to have practical relevance or implications.

Analysis of CLER Site Visit Reports

Specific findings based on responses to non-audience response system questions and interviews on walking rounds were systematically coded in NVivo qualitative data analysis software version 11 (QSR International Pty Ltd, Doncaster, Victoria, Australia) following the principles of content analysis. Three members of the CLER Program staff, trained in qualitative data analysis, generated a master codebook through an iterative process by (1) independently applying codes to the data; (2) peer-reviewing coding; (3) discussing coding discrepancies; and (4) reaching agreement on the codes through consensus. The results were recorded as frequency counts for further descriptive analysis. Overall percentages and percentages stratified by CLE region and type of ownership are reported.

Development of the Overarching Themes

Preliminary review of the results revealed that the overarching themes (ie, broad, high-level observations) were similar to those presented in the *CLER National Report of Findings 2018*.[7] Due to the similarities, the CLER Program adopted a modified approach to the development of the overarching themes for this report.

In the 2018 *National Report*, the overarching themes were determined in three stages. First, the CLER Program staff asked each CLER Field Representative to identify the overarching themes based on their summative experiences and observations through a key informant survey. The CLER Program staff systematically analyzed

the content of all responses to discern common themes and note salient concepts. The approach to analysis was inductive in that the themes emerged from the content of the responses.

Next, the CLER Field Representatives reviewed and commented on the results and offered additional findings by consensus. Based on feedback from the CLER Field Representatives, the CLER Program staff revised the summary of results and presented them to the CLER Evaluation Committee. Lastly, the members of the CLER Evaluation Committee reviewed the results and developed a set of commentaries on the importance of the findings and their impact on patient care and physician education. The work of the committee was achieved by consensus.

For this report, the CLER Program staff asked the CLER Field Representatives to confirm or modify the 2018 overarching themes based on their overall observations from the site visits to the smallest Sponsoring Institutions. The CLER Evaluation Committee then reviewed the results and modified the commentaries as needed.

As part of this modified approach, the CLER Field Representatives also had the opportunity to identify new overarching themes, which were developed following the steps described above for the 2018 *National Report*. Similarly, the CLER Evaluation Committee developed new commentaries by engaging in the same process described above.

Use of Terms to Summarize Quantitative and Qualitative Results

For the purposes of this report, a specific set of descriptive terms is used to summarize quantitative results from both the audience response system and the site visit reports: few (<10 percent), some (10 percent–49 percent), most (50 percent–90 percent), and nearly all (>90 percent).

The summary of qualitative data (ie, responses to open-ended questions during group interviews and conversations on walking rounds) is based on the CLER Field Representatives' assessment of the relative magnitude of responses. The following set of terms is intended to approximate the quantitative terms above: uncommon or limited, occasionally, many, and generally.

OVERARCHING THEMES

As with previous *National Reports*[7–9] this report of the first set of site visits to the Sponsoring Institutions with CLEs in unique settings reveals a number of overarching themes that cut across the CLER Focus Areas.[10] Of note, the CLER protocol did not directly assess for these themes. Rather, they are based on the CLER Field Representatives' overall observations for this cycle of CLER site visits. The development of these themes is described in detail in the Methodology section of this report (pp 9-13).

These overarching themes appear in the following shaded boxes and are numbered for easy reference within the report; these numbers do not suggest order or importance. Each theme is accompanied by a discussion section authored by the CLER Evaluation Committee, which highlights the theme's relevance to the GME community and the CLEs in which fellows and residents learn.

OVERALL REFLECTIONS OF THE CLER EVALUATION COMMITTEE

In general, this cycle of CLER site visits to the Sponsoring Institutions with CLEs in unique settings revealed 4 overarching themes that have carried forward from previous *National Reports*[7–9] (ie, themes 1, 3, 4, and 5 on the following pages). Theme 2 is a new observation.

Collectively these 5 themes highlight the significant challenges that CLEs face in implementing change at the speed and magnitude needed to keep pace with, or ideally anticipate, the future of health care delivery. The unifying goal for health care systems is to consistently and reliably deliver patient care today that is the safest and highest quality possible. Health care systems that choose to serve as CLEs have the added responsibility of making certain that new learners acquire systems-oriented skills to deliver the highest level of care for the patients of tomorrow.

Transformational change within a CLE requires a complete organizational commitment to quality and safety. Each individual in the organization must model behavior that promotes improvements in patient care. In addition, CLE and GME leadership must collaborate at all levels, from strategic planning to faculty development to the front lines of enhancing interprofessional team-based care. When positive relationships and alignment exist, educational and clinical programs are well positioned to demonstrate continued improvements in quality and safety.

Real investment in transformation will likely enhance quality of care and patient care outcomes, as well as create a thriving work climate—improving well-being and retention and yielding overall benefit for the CLE.

OVERARCHING THEMES

Theme 1

Clinical learning environments vary in their approach to and capacity for addressing patient safety and health care quality. In many clinical learning environments, there was limited formal infrastructure to address patient safety and health care quality.

Discussion

The findings from this first set of CLER site visits to the Sponsoring Institutions with CLEs in unique settings suggest that CLEs have a number of opportunities in the areas of patient safety and quality improvement that would likely improve the quality of GME as well as patient care.

Acquiring competence in patient safety and quality improvement requires experiential learning. Therefore, engaging fellows and residents in the CLE's quality improvement and patient safety activities is essential. An optimal CLE has consistency of purpose and action with well-articulated strategies, well-defined tools and methods, and common agreement on the role of each member of the clinical team in the organization's patient safety and quality improvement efforts.

To ensure optimal experiential learning, CLEs would benefit from assessing their patient safety and quality improvement activities in the context of how well these programs build competence and capacity for all members of the clinical care team—including residents, fellows, faculty members, and others such as nurses and pharmacists—to create sustainable, system-based solutions for improving care. High-performing CLEs will purposefully design their patient safety and quality improvement programs to engage learners in building competence in these areas.

The findings from the present report suggest that most CLEs have operationalized their efforts to address patient safety and health care quality, principally in response to regulatory requirements and performance-based contracting. Success toward these operational objectives can easily coexist with efforts to create an optimal learning environment that fosters competence of all clinical care team members—including fellows and residents. Optimizing patient safety and health care quality requires systems-based collaborative team efforts. Therefore, fellows and residents need to be exposed to interprofessional work in patient safety and quality improvement throughout their education. Solutions are more likely to succeed when they are systems based and designed with input from all clinical care team members—including fellows and residents.

Theme 2

In many of the clinical learning environments with fellowship programs, there appeared to be limited focus on engaging fellows in the clinical learning environment's patient safety and health care quality activities.

Discussion

The observations from the site visits to these ACGME-accredited Sponsoring Institutions in unique settings— many with single fellowship programs in outpatient CLEs—highlight a finding that was also seen among the larger Sponsoring Institutions.[9] Specifically, there appeared to be a lack of broad-based efforts on building skills in patient safety and quality improvement for physicians who have completed their specialty education and who have advanced to subspecialty fellowship education.

It is essential that basic competencies in system-based skills such as the practice of patient safety and quality improvement science be part of the specialty education of every physician in GME. The ACGME Common Program Requirements and Milestones both highlight this issue.[11,12] There are compelling reasons why the GME experience of subspecialty fellowship also needs to include robust education in patient safety and health care quality.

Perhaps the most compelling reason for including patient safety and quality improvement in fellowship is the advanced nature of fellows' education and the attendant skills needed to provide safe, high-quality care. Fellows often care for people with specialized care needs within their fields of expertise. They therefore need to learn how to develop and apply patient safety and quality improvement tools and methods within their own subspecialty, which may be very different from their core education in terms of clinical settings, workflow, and interprofessional teamwork. For example, a fellow in a micrographic surgery and dermatologic oncology fellowship in which they train in Mohs surgery would likely experience a set of patient safety and quality improvement issues that are more focused and specialized than that of a dermatology resident. Similarly, an orthopaedic fellow in sports medicine would more likely experience patient safety and quality improvement issues within high school or professional athletic settings than a general orthopaedic resident.

There are additional benefits to engaging fellows in patient safety and quality improvement. First, fellows will also need reinforcement of their patient safety and quality improvement skills so that they will be prepared for their future unsupervised clinical practice. Second, engaging in patient safety and quality improvement increases the role of fellows in teamwork and the development of deeper ties with the members of the care team, using an interprofessional approach. Third, fellows, being new to their CLEs, can offer a fresh perspective to identify possible safety risks and improvement opportunities. Fourth, fellows have the opportunity of engaging in formal research in safety and quality around their subspecialty.

Lastly, fellows serve as essential role models for all members of the health care team, especially residents, both while they are in fellowship and thereafter as faculty members. As role models, fellows need to develop the knowledge and skills to teach and mentor junior colleagues toward professional competence in patient safety and quality improvement. Fellowship programs can help ensure fellows acquire these skills and model optimal behavior by setting high expectations for fellow engagement in these areas. CLEs with enhanced fellow engagement will also likely benefit from an enhanced culture of safety and a commitment to continuing professional development in patient safety and quality improvement.

Theme 3

Clinical learning environments vary in how they align and collaborate with graduate medical education in developing the organization's strategic goals aimed at improving patient care. In many clinical learning environments, graduate medical education is largely developed and implemented independently of the organization's other areas of strategic planning and focus.

Discussion

Enhanced collaboration and integration of the CLE and GME can lead to improved patient care. Fellows and residents, who are at the frontlines of patient care, have an excellent knowledge of and ability to manage the patient care experience. These efforts to integrate the CLE and GME can also be viewed as an investment in the organization's clinical workforce.

The findings of the present report suggest that one of the barriers to fully integrating GME into the CLE may be a lack of mutual understanding of how the CLE governance[b] process can help set the strategic direction for

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[b] It is important to recognize that nearly all the CLEs visited as part of this report were either public entities or private corporations that have governing processes.

optimizing learning in the context of delivering patient care. One example is the absence of stated expectations for GME and other clinical learners in the organization's quality and safety plans.

CLE governance has an important role to play in ensuring that GME is integrated into the CLE's strategic goals for improving patient care. For example, governing bodies can identify how they view GME's contribution to developing the CLE's physician workforce or enhancing the CLE's prestige within their community. In setting the strategic direction for the organization in its role as a CLE, governing bodies can clarify the value of GME within the organization and message the imperative to integrate GME in the development, implementation, and evaluation of strategic goals.

Theme 4

A limited number of clinical learning environments have designed and implemented educational programs to ensure that all graduate medical education faculty members and program directors have the knowledge, skills, and attitudes necessary for their respective roles in training fellows and residents in patient safety and quality improvement.

Discussion

To ensure high-quality education for their fellows and residents, CLEs need to ensure that the entire medical staff, particularly faculty members and program directors, is engaged in and able to provide a constructive role in teaching the sciences of patient safety and quality improvement.

Importantly, strong faculty knowledge, skills, and participation in these areas will help CLEs to improve patient safety and health care quality. CLEs that ensure such faculty development will likely see added value by creating a pool of mentors to draw upon year after year. In addition, the CLE will retain some residents after they complete their education, and these junior faculty members will begin their new roles already equipped with these essential skills.

In addition, faculty development serves a dual purpose—achieving at minimum faculty competence to participate in efforts to improve patient safety and health care quality and ensuring that faculty have the skills and competency to mentor fellows and residents in these areas.

There are both challenges and opportunities associated with implementing an organization-wide plan for faculty development in patient safety and quality improvement. If faculty and staff are to view patient safety and quality improvement activities as an organizational priority, the CLE's executive leadership must message the importance of these efforts, emphasizing the connection to sustainable improvement. They must clearly support such messages with ongoing dedicated resources, successful programs, and accountable goals—all linked to professional advancement.

Executive leadership may also seek to accelerate its plan for faculty development by recruiting individuals with applicable skill sets (eg, patient safety managers, human factors engineers, improvement scientists, implementation coaches) to teach important principles of patient safety and quality improvement and to guide faculty through experiential learning.

Importantly, CLEs that invest in a robust plan for faculty development in patient safety and health care quality are likely to see a reduction in waste, medical liability, and patient harm.

Theme 5

Clinical learning environments vary in the degree to which they coordinate and implement interprofessional collaborative learning in the context of delivering patient care. When seen, the educational efforts in collaborative learning were commonly focused on regulatory compliance.

Discussion

In most CLEs, educational programming appears to focus primarily on acquisition of knowledge and skills specific to each profession. Physicians educate other physicians, nurses educate other nurses, pharmacists educate other pharmacists, etc. The current and evolving practice of medicine necessitates complex, collaborative, team-oriented care and systems-based approaches to coordinating and evaluating health care delivery and outcomes. There are clear needs for interprofessional learning.

Interprofessional education provides a good foundation for learning across the professions based in undergraduate health care education.[4] There are also models of interprofessional collaborative practice that seek to address this need; however, for many clinicians this type of experience is limited if available at all. Many early learners enter into patient care environments with traditional cultures of siloed professional hierarchy that inhibit collaborative learning and practice.[7,8]

CLEs will excel in providing team-based, collaborative care through developing and implementing programs of interprofessional learning that occurs in the context of the patient care environment.

Highly functioning interprofessional CLEs formally design plans for interprofessional systems-based learning across the clinical workforce—for both early learners such as fellows and residents and learners in other stages of their professional careers. One of the hallmarks of an optimal interprofessional CLE is a robust collaborative practice model that incorporates structured interprofessional experiential learning as part of routine professional activities.[13,14] Such a model entails the ongoing attention, support, and oversight of the CLE's executive leaders.

Ultimately, robust interprofessional collaborative practice, as supported by a high-performing interprofessional CLE, has the potential to decrease serious patient safety events, increase trust in the clinical care team, improve patient care management and timeliness in care, and improve the efficiency and effectiveness of patient care. Such interprofessional learning can also improve the workforce experience, leading to better recruitment and retention and lower turnover.

DETAILED FINDINGS

This section includes detailed findings from the first set of CLER site visits to the major participating clinical sites for 58 ACGME-accredited Sponsoring Institutions with single fellowship or preventative medicine programs.

As described in the Methodology section (pp 9-13), these findings are based on a mixed methods approach to data gathering and analysis to improve the accuracy of the findings by combining quantitative, descriptive, and qualitative evidence in a complementary manner. As such, some of the findings are represented quantitatively while others are described qualitatively. The combination of methodologies and varied representation of findings should be considered when interpreting the results, making comparisons, or drawing conclusions. Both supporting and conflicting evidence may be presented to explain or qualify findings. For example, results from the group interviews may appear more positive than information gathered on walking rounds. Alternatively, practices reported during group interviews may have been verified on walking rounds.

Finally, this section follows approximately the same structure as the individual CLER site visit reports received by participating institutions. This structure is intended to facilitate easy comparison between data from an individual site and that of this report, which aggregates results from all 58 Sponsoring Institutions. Those who seek additional detail may consult the Appendices (pp 31-47). Appendix A contains additional information on the Sponsoring Institutions, sites visited, and groups interviewed. Appendix B contains selected aggregated quantitative results from the group interviews with fellows and residents.

PATIENT SAFETY

The CLER Program explored several aspects of fellow and resident engagement in patient safety with emphasis on four major topics: culture of safety, use of the patient safety event reporting system, knowledge of patient safety principles and methods, and inclusion in patient safety event investigations.

Culture of Safety

Among the CLEs visited, approximately 98 percent of the fellows and residents in the group interviews indicated that their CLE provides a safe and nonpunitive environment for reporting errors.

For CLEs that had an online or paper-based patient safety event reporting system, physicians and other staff members also indicated use of the patient safety event reporting system to report on individual behaviors. This use included reporting on behaviors in a retaliatory fashion or in a manner that could be perceived as punitive.

Given this and based on the collective findings from the site visits, it is unclear as to whether residents, fellows, and other staff members perceived a safe and nonpunitive culture for reporting patient safety events.

Use of the Patient Safety Event Reporting System
CLE Systems for Reporting

In general, CLEs had one or more mechanisms for reporting patient safety events, including an online or paper-based patient safety event reporting system, a chain-of-command system that allowed events to be reported to an immediate supervisor (eg, a more senior resident, fellow, or faculty member), and a mechanism to verbally report events to the patient safety staff (eg, hotline). In many CLEs, the chain-of-command system was common.

In general, fellows and residents appeared to be aware of their CLE's process for reporting patient safety events such as adverse events, near misses/close calls, and unsafe conditions. Many fellows and residents did not appear to be aware of their responsibility to report or the importance of reporting patient safety events.

During walking rounds, the CLER site visit teams also asked nurses about their CLE's patient safety event reporting system. Across many CLEs, nurses appeared to be familiar with their CLE's system for reporting patient safety events.

Understanding of Reportable Events

Generally across CLEs, the fellows and residents interviewed on walking rounds appeared to lack understanding and awareness of the range of reportable patient safety events, including what defines a near miss/close call. In many CLEs, nurses' understanding of reportable patient safety events also varied.

Across CLEs, residents, fellows, nurses, and other health care professionals in many areas of practice (eg, technicians, physician assistants, medical assistants) appeared to focus on reporting sentinel events, medication errors, patient falls, and other events with harm; they did not appear to recognize near misses/close calls, unsafe conditions, nonharm events, unexpected deteriorations, or known procedural complications as reportable patient safety events. Residents, fellows, nurses, and other health care professionals appeared to have little awareness of the importance of reporting these types of patient safety events and how such reporting can provide valuable information for identifying system failures, addressing vulnerabilities in the system, reducing risks, and improving patient safety.

Reporting

Overall, 17.1 percent of the fellows and residents in the group interviews indicated that they had experienced an adverse event, near miss/close call, or unsafe condition while at their CLE. Appendix B1 provides information on variability.

> *Of the fellows and residents who reported that they had experienced an adverse event, near miss/close call, or unsafe condition, 10.5 percent (1.8 percent of the total number of fellows and residents interviewed) indicated that they had personally reported the patient safety event using the CLE's patient safety event reporting system (see Appendix B2 for information on variability).*

Of the fellows and residents who reported that they had experienced an adverse event, near miss/close call, or unsafe condition, 10.5 percent (1.8 percent of the total number of fellows and residents interviewed) indicated that they had personally reported the patient safety event using the CLE's patient safety event reporting system (see Appendix B2 for information on variability). For those who did not personally enter the patient safety event into the system, 36.8 percent indicated that they relied on a nurse or other health care professional to submit the patient safety event report, 47.4 percent indicated that they relied on a physician supervisor, and 5.3 percent indicated that they cared for the patient and chose not to submit a report.

When faculty members and program directors in the group interviews were asked what process fellows and residents most frequently followed when reporting a patient safety event, 37.7 percent of the faculty members and program directors indicated that they believed fellows and residents most often reported the event themselves using the CLE's patient safety event reporting system.

In a separate query, 4.5 percent of the fellows and residents in the group interviews among the CLEs visited indicated that they had reported a near miss/close call while at the CLE (see Appendix B3 for information on variability).

On walking rounds, fellows and residents in many CLEs mentioned that they often report patient safety events locally or through their chain of command. When they delegated or relied on others to report, it was unclear if these reports were formally captured in the CLE's centralized patient safety event reporting system.

The collective information from the site visits indicated that in 94.7 percent of the CLEs, fellow and resident reporting of patient safety events into the CLE's patient safety event reporting system was infrequent (*Figure 2*).
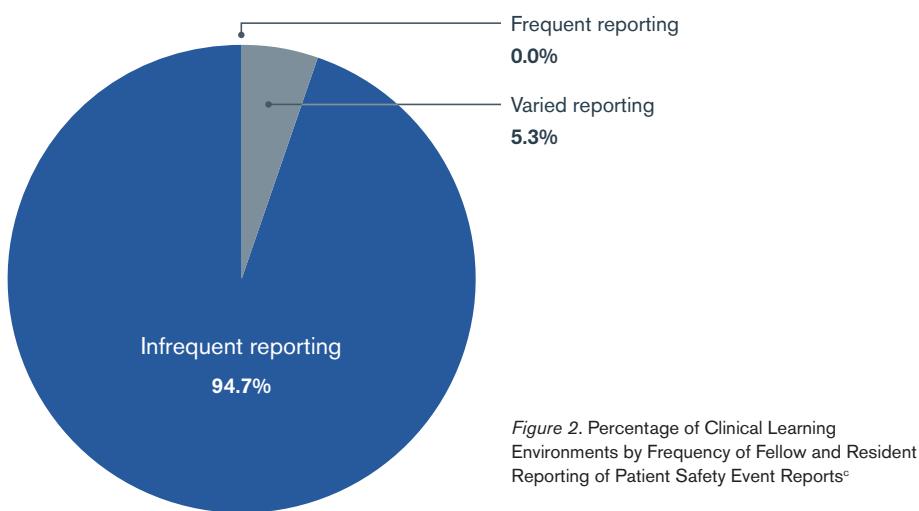
Frequent reporting
0.0%

Varied reporting
5.3%

Infrequent reporting
94.7%

Figure 2. Percentage of Clinical Learning Environments by Frequency of Fellow and Resident Reporting of Patient Safety Event Reports[c]

In the group interviews, the CLER site visit teams also explored faculty members' and program directors' use of the CLE's patient safety event reporting system. Approximately 22 percent of the faculty members and program directors reported that they had personally reported an adverse event, near miss/close call, or unsafe condition in the past year.

Feedback

In the group interviews, the CLER Field Representatives asked fellows and residents whether they received feedback on patient safety event reports. Of those who had experienced an adverse event, near miss/close call, or unsafe condition and who had then personally submitted a patient safety event report or relied on a nurse, medical assistant, or supervisor to submit the report, 83.3 percent reported that they had received feedback on the outcome of the report. Responses varied by type of CLE ownership (*Figure 3*; see also Appendix B4).

Fellows and residents often mentioned receiving feedback on the outcome of the patient safety event report at staff meetings and conferences or by word of mouth. It was uncommon for fellows and residents to mention receiving information on the outcome of the investigation, including recommended actions to address vulnerabilities in the system and to improve patient safety. Across CLEs, residents, fellows, nurses, and other health care professionals expressed a strong desire to receive feedback in response to submitting a patient safety event report.

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[c] Missing data (<2 percent) have been omitted; percentages based on valid percent. Of note, data are missing largely due to the development and refinement of a formal written CLER Site Visit Report template in the early stages of program implementation.
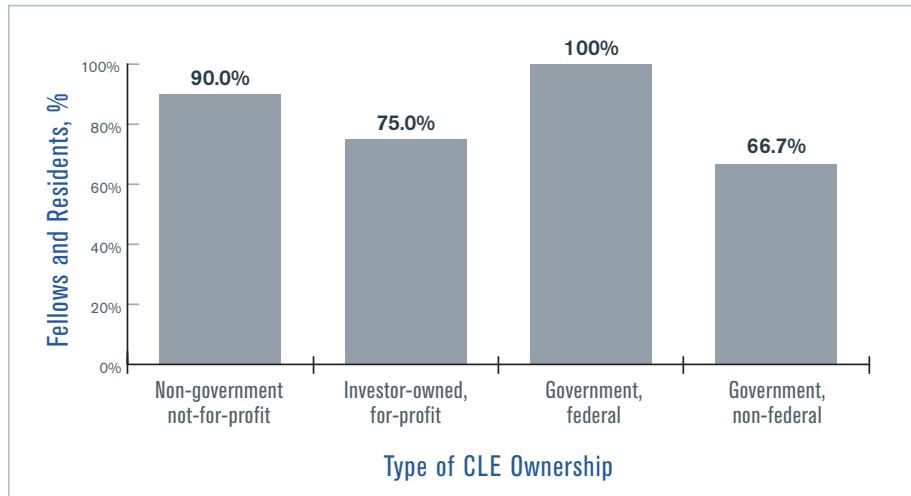
Figure 3. Percentage of Fellows and Residents Who Reported Receiving Feedback on the Outcome of a Patient Safety Event Report Submitted, by Type of Clinical Learning Environment (CLE) Ownership

Time-Outs

On walking rounds, the CLER site visit teams explored fellow and resident participation in the time-out process as part of patient safety practices (eg, ambulatory and bedside procedures). Across many CLEs, residents, fellows, nurses, and other health care professionals interviewed on walking rounds indicated that fellows and residents do not consistently conduct standardized time-outs before performing bedside procedures.

Knowledge of Patient Safety Principles and Methods

Across many CLEs, fellows and residents appeared to have limited knowledge of fundamental patient safety principles and methods (eg, Swiss cheese model of system failure, root cause analysis, fishbone diagrams).

Inclusion in Patient Safety Event Investigations

Among the CLEs visited, 13.5 percent of the fellows and residents in the group interviews indicated that they had participated in an interprofessional investigation of a patient safety event that included components such as analysis of system issues, development and implementation of an action plan, and monitoring for continuous improvement (see Appendix B5 for information on variability).

The CLER Field Representatives also asked faculty members about their involvement in interprofessional patient safety event investigations. Approximately 57 percent of the faculty members and program directors in the group interviews reported that they had participated in an investigation of a patient safety event that involved physicians, nurses, administrators, and other health care professionals.

The format and process of investigating patient safety events varied both across and within CLEs. It was uncommon for fellows and residents to describe involvement in comprehensive systems-based approaches to patient safety event investigations aimed at preventing future adverse events and sustaining improvements in patient safety. In general, fellows and residents described experiences that lacked the attributes of a formal patient safety event investigation, with very little or no interprofessional or interdisciplinary engagement. Fellows and residents varied widely in their perceptions of what constituted a formal investigation of a patient safety event. Across many CLEs, case conferences, morbidity and mortality conferences, and grand rounds continued to be the major approach to patient safety event investigations.

HEALTH CARE QUALITY (INCLUDING HEALTH CARE DISPARITIES)

The CLER Program explored fellow and resident engagement in improving health care quality within the context of five major areas: involvement in developing and implementing the CLE's strategies for health care quality, awareness of the CLE's health care quality priorities, engagement in quality improvement (QI) projects, access to quality metrics data, and CLE efforts to address health care disparities.

Involvement in Developing Health Care Quality Strategies

As part of understanding the CLE's approach to improving health care quality, the CLER site visit teams reviewed the organization's strategic plan for quality and interviewed both executive and patient safety and quality leaders. Overall, a limited number of CLEs appeared to integrate QI within the organization as part of a system-wide, comprehensive approach to promote experiential learning and to improve quality and safety across the organization.

Across CLEs, fellow and resident involvement in strategic planning for QI was uncommon. Fellows and residents often served as implementers of CLE-wide QI activities (eg, hand hygiene, reducing hospital-acquired infections, reducing 30-day readmissions).

Priorities for Improving Health Care Quality

In general, priorities for improving health care quality varied across CLEs. However, some common themes included alignment with broad national priorities such as core measures or publicly reported performance measures (eg, diabetic management, hand hygiene, hospital-inquired infections). Many CLEs were also highly focused on meeting specific criteria such as reducing 30-day readmissions or improving performance on metrics related to accurate documentation and surgical care improvement project measures.

In the group interviews among the CLEs visited, 65.8 percent of the fellows and residents reported knowing their CLE's priorities for improving health care quality (see Appendix B6 for information on variability). When asked the same question, 82.7 percent of the faculty members and program directors reported knowing the priorities. Often, the physician groups focused on departmental activities and did not describe priorities that aligned with those identified by the CLE's executive leadership or the patient safety and quality leaders. When the physicians identified priorities aligned with those of executive leadership, they were most commonly around nationally recognized measures, especially those related to programs with financial incentives.

Engagement in Quality Improvement Projects

Among the CLEs visited, 40.5 percent of the fellows and residents in the group interviews reported they had participated in a QI project of their own design, or one designed by their program or clinical site. Of those who reported that their QI projects were linked to the CLE's goals, 82.2 percent reported that their projects involved interprofessional teams. Appendices B7 and B8 provide detailed information on variability.

In the group interviews and on walking rounds, the CLER Field Representatives asked fellows and residents to describe their QI projects. Overall, fellows and residents varied in their descriptions of these projects. It was uncommon for fellows and residents to describe projects that aligned with their CLE's priorities. In many CLEs, few described projects that included the components of a complete QI cycle (ie, Plan-Do-Study-Act). Often, fellow and resident participation was limited to planning and implementing a QI activity. For many fellows and residents, their QI projects did not involve formally assessing effectiveness and designing follow-up actions to adjust, support, and sustain ongoing QI efforts.

It was also uncommon for fellows and residents to describe involvement in interprofessional team-based QI projects. During the interviews on walking rounds, a limited number of nurses and other health care professionals indicated that they were involved in interprofessional QI projects that included fellows and residents.

When the CLER Field Representatives queried faculty members and program directors in the group interviews about their engagement in interprofessional QI projects, 67.5 percent reported that they had participated in a QI project with nurses, pharmacists, and other members of the health care team.

Access to Data

In the group interviews, 88.3 percent of the faculty members and program directors reported that their fellows and residents have ready access to organized systems for collecting and analyzing data for the purposes of QI. Electronic health records, specialty-specific clinical registries, and local, regional, or national quality dashboards were often reported as common sources of QI data. Many faculty members and program directors noted that fellows and residents had limited support for data analysis. When support existed, it was often a departmental resource. The type and extent of analytic support services available to fellows and residents varied both within and across CLEs.

CLE Efforts to Address Health Care Disparities

A limited number of executive leaders spoke to health care disparities occurring within their hospital or medical center. Overall, less than 9 percent of executive leaders described a specific set of strategies or a systematic approach to identifying, addressing, and continuously assessing variability in the care provided to or the clinical outcomes of their patient populations at risk for health care disparities. In some of the CLEs, the executive leaders, faculty members, or program directors indicated that some departments were collecting data or conducting studies related to health care disparities among specific patient populations; many of these efforts were reported as research projects. In general, there was also a lack of knowledge around health care disparities or awareness that patients were experiencing health care disparities.

CARE TRANSITIONS

The CLER Field Representatives explored several aspects of fellow and resident engagement in improving care transitions, including: priorities for improving care transitions, perceived vulnerabilities in care transitions, and education on care transitions.

Priorities for Improving Care Transitions

In describing priorities for improving transitions of care, many executive leaders focused on improving patient transfers from one facility to another (eg, rehabilitation centers, skilled nursing facilities, hospices, or coordinating care after end of life) or transitions out of the hospital. A limited number of executive leaders mentioned improving provider-to-provider communications at change of duty (including fellow and resident hand-offs) as a priority.

Fellows and residents were occasionally involved in efforts in designing, implementing, and standardizing their program's processes for shift-to-shift transitions of care. Faculty members were also involved in supporting fellows and residents in these efforts.

Perceived Vulnerabilities in Care Transitions

Across CLEs, residents, fellows, nurses, and other health care professionals identified many transitions that they believed posed vulnerabilities in patient safety. The executive leaders mentioned these same vulnerabilities.

Examples included transfers from one facility to another (eg, rehabilitation centers, skilled nursing facilities, hospices, or coordinating care after end of life) and transitions out of the hospital. Residents, fellows, nurses, and other health care professionals often expressed concerns that communication during these transitions was incomplete or inaccurate, leading to vulnerability for patient safety events.

Education on Care Transitions
Among the CLEs visited, 79.1 percent of the fellows and residents reported that they had participated in training with nurses and other health care professionals on transitioning patient care. Responses varied by CLE region (see Appendix B9).

Across CLEs, standardized, organization-wide approaches to training in and managing care transitions between clinical services assigned to fellow and resident physician teams varied.

SUPERVISION

The CLER Program explored fellow and resident supervision and the issues around this focus area for perceptions of supervision and potential vulnerabilities, and patient safety events related to supervision.

Perceptions of Supervision and Potential Vulnerabilities
Across CLEs, many executive leaders did not express concerns or identify any specific vulnerabilities related to fellow and resident supervision within their organization. In general, residents, fellows, faculty members, and program directors also reported a culture of adequate supervision. When asked to summarize their experience at their CLE, 82.7 percent of the fellows and residents in the group interviews reported being adequately supervised. Most of the faculty members and program directors (79.1 percent) also indicated that fellows and residents are adequately supervised.

Although the majority of the physicians in the group interviews reported a culture of close supervision, they also reported perceptions of inadequate supervision. Among the CLEs visited, 3.6 percent of the fellows and residents reported that while at the CLE, they had been placed in a situation or witnessed one of their peers in a situation where they believed supervision was inadequate (eg, the attending physician was not available). Responses varied by gender, specialty grouping, and type of CLE ownership. Appendix B10 provides detailed information on variability.

In discussing issues related to supervision that may be creating patient safety vulnerabilities, faculty members and programs directors frequently mentioned the challenges of providing supervision in the evenings, on weekends, and during times of high acuity and patient volume. They noted that in these situations, the number of faculty members was insufficient for adequate supervision. They also noted that competing clinical responsibilities further limited the availability of faculty members to supervise fellows and residents.

Fellows and residents mentioned gaps in supervision when their peers provide consultative services, noting these gaps as a potential source of patient safety vulnerabilities.

Patient Safety Events Related to Supervision
In general, executive leaders indicated that they addressed patient safety events as they arose and through retrospective review of the events. It was uncommon for CLEs to actively monitor for potential patient safety events related to supervision; the issue of supervision was often viewed as the responsibility of the GME community.

FATIGUE MANAGEMENT, MITIGATION, AND DUTY HOURS

In the area of fatigue management, mitigation, and duty hours, the CLER Program explored fatigue management, patient safety events related to fatigue, situations that increase the risk for burnout, and strategies to address fatigue and burnout.

Fatigue Management

On occasion, faculty members and program directors mentioned the following in describing the situations that increase the risk for fatigue: time spent on electronic health records, times of high patient volume and acuity, covering multiple hospitals, 24-hour shifts, telephone calls with multiple interruptions, moving from day to night shifts, telephone calls for nonurgent problems, a full day of clinical work after home call, and completing other clinical and documentation tasks during off duty hours.

Patient Safety Events Related to Fatigue

When queried in the physician interviews, 2.7 percent of the fellows and residents and 1.8 percent of the faculty members and program directors recalled a patient safety event related to resident or fellow fatigue (*Figure 4*). The CLER site visit teams also asked the executive leaders a similar question. None of the executive leaders recalled a patient safety event related to resident or fellow fatigue.
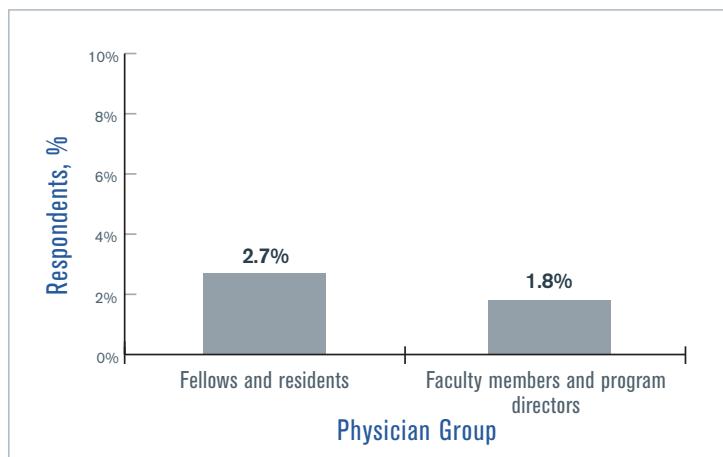
Figure 4. Reported Awareness of a Patient Safety Event Related to Resident or Fellow Fatigue

Situations that Increase the Risk for Burnout

Occasionally, fellows and residents described seeing signs of burnout in their colleagues that included emotional exhaustion, depersonalization, and/or a sense of low personal accomplishment. Fellows and residents often identified high patient volume, patient acuity, and nonphysician responsibilities as contributing factors to burnout.

On occasion, fellows and residents reported observing some signs of burnout among their faculty members and program directors. Some of the manifestations included withdrawal from others and lack of willingness or enthusiasm to teach.

When asked about burnout, faculty members and program directors mentioned the same factors identified by the fellows and residents and added clinical productivity pressures, extensive documentation requirements,

inadequate clinical and administrative support, and the challenge of balancing teaching, research, administrative responsibilities, and patient care.

Many residents, fellows, faculty members, and program directors also perceived that connection to community, the small size of the institution, collegiality, and a greater sense of professional acknowledgment in general helped mitigate possible burnout among faculty members and program directors.

Strategies to Address Fatigue and Burnout

Systematic strategies to identify, mitigate, and prevent fatigue and burnout were uncommon across CLEs. When strategies existed, they were often in response to an event related to fatigue or burnout. The content and coordination of these efforts varied across CLEs, and measures to assess the effectiveness of these efforts were uncommon.

PROFESSIONALISM

The concept of professionalism encompasses a number of attributes. The CLER site visits focused mainly on those involving honesty, integrity, and respectful treatment of others.

During each visit, the CLER Field Representatives asked executive leaders whether or not any GME-related incidents involving professionalism or integrity had occurred in the past year. The executive leaders in 25.9 percent of the CLEs indicated that one or more such incidents had been brought to their attention.

Honesty in Reporting

Among the CLEs visited, 7.3 percent of the fellows and residents in the group interviews reported that while at their CLE, they had documented a history or physical finding in a patient medical record that they did not personally elicit (eg, copying and pasting from another note without attribution). Appendix B11 provides detailed information on variability.

When the CLER site visit teams asked the faculty members and program directors about their documentation practices, 5.5 percent in the group interviews indicated that they had documented a history or physical finding in a patient medical record that they did not personally elicit.

Integrity

Among the CLEs visited, 3.6 percent of the fellows and residents surveyed in the group interviews reported that while at the CLE, they had on occasion felt pressured to compromise their honesty or integrity to satisfy an authority figure (see Appendix B12 for detailed information on variability).

To further explore issues of integrity, the CLER site visit teams presented the fellows and residents in the group interviews with a scenario in which one of their colleagues has written a manuscript and the department chair or program director—although not involved in the project—asked to be included as an author. Approximately 61 percent of the fellows and residents responded that they would advise the colleague to discuss the matter with a faculty member or their DIO.

Respectful Treatment of Others

Generally across CLEs, the executive leadership expressed intolerance for unprofessional and disrespectful behavior. Approximately 90 percent of the faculty members and program directors surveyed expressed the belief that their CLE was usually or always effective in managing reports of unprofessional behavior.

Although many residents, fellows, nurses, and other health care professionals described their work environments as respectful and collegial, in nearly half of the CLEs (44.8 percent), individuals across multiple areas described the behavior of attending physicians and nurses as disrespectful or disruptive. In 18.5 percent of the CLEs, the behaviors were described as chronic, persistent, or pervasive in nature (*Figure 5*).

Reports of chronic disrespectful or disruptive behavior
18.5%

No reports of chronic disrespectful or disruptive behavior
81.5%

Figure 5. Percentage of Clinical Learning Environments Where Chronic Disrespectful or Disruptive Behavior Was Reported Across More Than One Clinical Unit
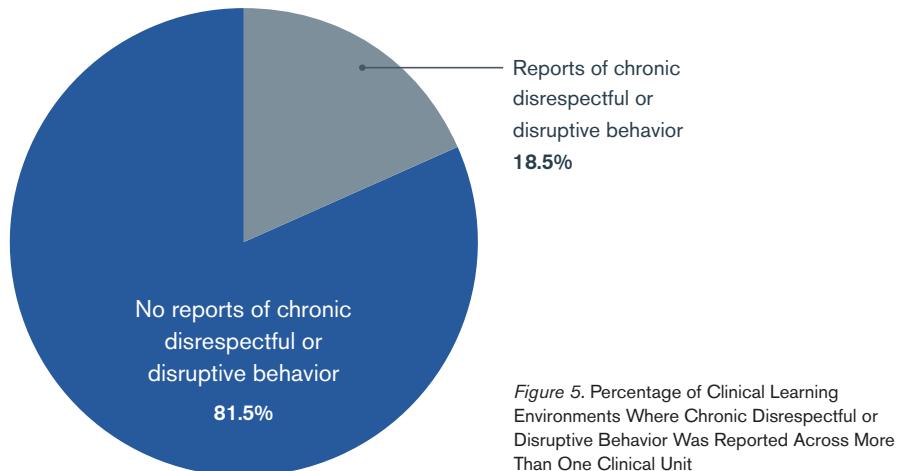
Across CLEs, many fellows and residents also described professionalism issues in obtaining consultation services, including lack of responsiveness and disrespectful communication in response to their requests for consultation.

On occasion, residents, fellows, and other health care professionals mentioned that they would not report mistreatment out of concern for adverse consequences of reporting.

LESSONS LEARNED

The CLER Program is designed to recognize the wide range of Sponsoring Institutions, from university-based structures with numerous programs and participating sites to single program, single site structures with one fellow. As described earlier in this report, the CLER Program has adapted its site visit protocol as necessary to fit the range of Sponsoring Institutions, including those with very small programs in unique settings featured in this special report. Before analyzing initial data from this set of visits, the CLER team was uncertain of the effects of adapting the CLER site visit protocol in this way. This report reflects that, even with an abbreviated visit, the CLER Program gleaned valuable information in these unique settings that will hopefully encourage the executive and GME leaders of these sites to consider new ways of engaging fellows and residents to address the 6 CLER Focus Areas. In addition, the findings in this special report are consistent with those reported in prior *National Reports* of Sponsoring Institutions with one or more core residency programs—demonstrating that CLEs, regardless of size, appear to face similar challenges with regard to GME engagement in the Focus Areas.

One of the lessons learned is that there are opportunities to improve patient safety in every clinical setting. However, it may require thinking differently about how the concepts of patient safety and quality improvement apply—particularly in settings that are principally ambulatory care sites and other settings such as high school athletic facilities, medical examiner offices, or employee health offices within the work environment. Conversations with the GME and CLE leaders in these facilities revealed many opportunities for improving patient safety and quality improvement.

Another lesson learned for this set of site visits is that the Sponsoring Institutions in this report that predominantly sponsored fellowship education programs appeared to place limited emphasis on engaging the fellows in activities focused on improving patient safety and health care quality. The leaders in these settings often noted that the fellows had covered these topics while in residency. The CLER Program offers the opportunity to consider these Focus Areas across the continuum of care and highlights the importance of applying the principles of patient safety and health care quality improvement in the context of what is often highly specialized care. For fellows further advanced in their education, CLEs have an opportunity to reinforce the importance of applying these concepts as part of lifelong clinical skills.

In conclusion, this report completes our understanding of the CLER Focus Areas as characterized across the broadest array of CLEs that serve as participating sites for ACGME-accredited Sponsoring Institutions. Collectively these findings, along with the findings in prior *National Reports*, emphasize the importance of the ACGME's mission to improve health care and population health by assessing and advancing the quality of fellow and resident education.

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APPENDIX A1.
GENERAL CHARACTERISTICS OF SPONSORING INSTITUTIONS

A1.1. Sponsoring Institution Distribution by Region and Type[a]

Characteristic	Sponsoring Institutions with CLER Visits, %[a] (n=58)	All Sponsoring Institutions, % (N=739)
Region		
Northeast	19.0	23.8
Midwest	20.7	23.3
South	36.2	30.7
West	24.1	20.6
Territory[b]	–	1.6
Type of Sponsoring Institution		
General/teaching hospital	3.4	54.8
Medical school or health science center	3.4	15.0
Educational consortium	–	3.8
Children's hospital	–	2.4
Other	93.1	24.0

A1.2. Sponsoring Institution Distribution by Number of ACGME-Accredited Residency and Fellowship Programs and Participating Sites[a]

Programs and Sites, Number	Sponsoring Institutions with CLER Visits, % (n=58)	All Sponsoring Institutions, % (N=739)
Programs		
<2	91.4	37.5
2	8.6	9.9
>2	–	52.6
Core Programs		
0	79.3	17.3
1	17.2	27.3
2	3.4	10.8
>2	–	44.6
Participating Sites		
<2	24.1	8.7
2–3	27.6	17.2
4–7	29.3	21.2
>7	19.0	52.9

[a] Percentages do not total 100 because of rounding.

[b] Limited to Sponsoring Institutions in Puerto Rico.

Abbreviations: ACGME, Accreditation Council for Graduate Medical Education; CLER, Clinical Learning Environment Review.

A1.3. Number and Distribution of Core Faculty Members at Sponsoring Institutions by Specialty Grouping

Specialty Subgroup	Sponsoring Institutions with CLER Visits, % (n=172)	All Sponsoring Institutions, % (N=112,745)
Medical	–	41.8
Surgical	2.9	33.2
Hospital-based	97.1	25.0

A1.4. Number and Distribution of Fellows and Residents at Sponsoring Institutions by Gender, Level of Education, and Specialty Grouping

Fellow and Resident Characteristic	Sponsoring Institutions with CLER Visits, % (n=225)	All Sponsoring Institutions, % (N=131,848)
Gender		
Male	71.6	52.8
Female	28.4	44.1
Unknown	–	3.1
Level of Education		
PGY-1 to PGY-3	43.6	70.7
PGY-4+	56.4	29.3
Specialty Group		
Medical	4.9	59.6
Surgical	39.1	20.9
Hospital-based	56.0	19.5

Abbreviations: CLER, Clinical Learning Environment Review; PGY, post-graduate year. .

APPENDIX A2.
GENERAL CHARACTERISTICS OF CLINICAL LEARNING ENVIRONMENTS

A2.1. Clinical Learning Environment Distribution by Type of Ownership[a]

Characteristic	Sponsoring Institutions with CLER Visits, % (N=58)
Type of Ownership	
Non-government, not-for-profit	36.2
Investor-owned, for-profit	31.0
Government, federal	6.9
Government, non-federal	25.9

[a] Based on the 2018 Accreditation Council for Graduate Medical Education data and the 2015 American Hospital Association Annual Survey.

Abbreviation: CLER, Clinical Learning Environment Review.

APPENDIX A3.

Programs at Site, Number[a,b]	Sponsoring Institutions with CLER Visits, % (N=58)
Programs	
1	94.7
2	5.3
Core Programs	
0	80.7
1	19.3

[a] Based on the 2018 Accreditation Council for Graduate Medical Education data.

[b] Missing data (<2 percent) have been omitted; percentages based on valid percent..

  Abbreviation: CLER, Clinical Learning Environment Review.

APPENDIX A4.
CLINICAL LEARNING ENVIRONMENT REVIEW VISITS: CHARACTERISTICS OF GROUPS INTERVIEWED

A4.1. Selected Characteristics of Fellows and Residents in the Group Interviews[a]

Characteristic	Fellows and Residents, % (N=111)
Gender	
Male	68.5
Female	31.5
Level of Education[b]	
PGY-1 to PGY-3	15.5
PGY-4+	84.5
Specialty Group[b]	
Medical	10.3
Surgical	51.4
Hospital-based	38.3

A4.2. Selected Characteristics of Faculty Members and Program Directors in the Group Interviews[a,c]

Characteristic	Faculty Members and Program Directors, %[d] (N=165)
Years at Hospital or Medical Center[b]	
≤2	21.0
3–5	17.9
6–10	14.2
>10	42.0
Program[b]	
Core residency program	17.9
Fellowship	67.3
Both	14.8
Specialty Group[b]	
Medical	13.6
Surgical	41.4
Hospital-based	45.1

[a] Based on audience response system data.

[b] Missing data (<4 percent) have been omitted; percentages based on valid percent.

[c] Percentages do not total 100 because of rounding.

[d] Of faculty members and program directors interviewed, 4.9 percent were nonteaching faculty members.

Abbreviations: CLER, Clinical Learning Environment Review; PGY, post-graduate year.

APPENDIX B.
SELECTED RESULTS FROM FELLOW AND RESIDENT GROUP INTERVIEWS

B1. Percentage of Fellows and Residents Who Reported Experiencing an Adverse Event, Near Miss/Close Call, or Unsafe Condition

PERCENT OF TOTAL SURVEYED (N=111)	17.1

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=111)
Gender	
Male	13.2
Female	25.7
Level of Education	
PGY-1 to PGY-3	5.9
PGY-4+	19.4
Specialty Group	
Medical	9.1
Surgical	14.5
Hospital-based	19.5
CLE Characteristics	
Region	
Northeast	26.3
Midwest	0.0
South	21.7
West	14.3
Type of Ownership	
Non-government, not-for-profit	23.3
Investor-owned, for-profit	12.9
Government, federal	6.7
Government, non-federal	18.2

[a] Missing data (<4 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B2. Percentage of Fellows and Residents Who Reported Experiencing an Adverse Event, Near Miss/Close Call, or Unsafe Condition and Submitted a Report Through the Clinical Site's Reporting System

PERCENT OF TOTAL SURVEYED (N=19)	10.5

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=19)
Gender	
Male	10.0
Female	11.1
Level of Education	
PGY-1 to PGY-3	0.0
PGY-4+	11.1
Specialty Group	
Medical	0.0
Surgical	12.5
Hospital-based	12.5
CLE Characteristics	
Region	
Northeast	0.0
Midwest	--
South	20.0
West	0.0
Type of Ownership	
Non-government, not-for-profit	20.0
Investor-owned, for-profit	0.0
Government, federal	0.0
Government, non-federal	0.0

[a] Missing data (<11 percent) have been omitted; percentages based on valid percent.

* Statistically significant at $P<.05$.

** Statistically significant at $P<.01$.

*** Statistically significant at $P<.001$.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B3. Percentage of Fellows and Residents Who Reported a Near Miss/Close Call Event

PERCENT OF TOTAL SURVEYED (N=111)	4.5

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=111)
Gender	
Male	5.3
Female	2.9
Level of Education	
PGY-1 to PGY-3	0.0
PGY-4+	5.4
Specialty Group	
Medical	9.1
Surgical	5.5
Hospital-based	2.4
CLE Characteristics	
Region[c]	
Northeast	5.3
Midwest	0.0
South	4.3
West	7.1
Type of Ownership	
Non-government, not-for-profit	9.3
Investor-owned, for-profit	3.2
Government, federal	0.0
Government, non-federal	0.0

[a] Missing data (<4 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B4. Percentage of Fellows and Residents Who Reported Receiving Feedback on the Outcome of a Report Submitted[a] Through the Clinical Site's Reporting System

PERCENT OF TOTAL SURVEYED (N=18)	83.3

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[b]	Fellows and Residents, % (n=18)
Gender	
Male	90.0
Female	75.0
Level of Education	
PGY-1 to PGY-3	100
PGY-4+	82.4
Specialty Group	
Medical	100
Surgical	87.5
Hospital-based	85.7
CLE Characteristics	
Region[c]	
Northeast	80.0
Midwest	–
South	77.8
West	100
Type of Ownership	
Non-government, not-for-profit	90.0
Investor-owned, for-profit	75.0
Government, federal	100
Government, non-federal	66.7

[a] Report submitted by resident or fellow or through a nurse or supervisor.

[b] Missing data (<12 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B5. Percentage of Fellows and Residents (PGY-3 and Above) Who Reported Participating in an Interprofessional (Physicians, Nurses, Administrators, Others) Investigation of a Patient Safety Event (eg, Root Cause Analysis)

PERCENT OF TOTAL SURVEYED (N=111)	13.5

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=111)
Gender	
Male	15.8
Female	8.6
Level of Education	
PGY-1 to PGY-3	11.8
PGY-4+	14.0
Specialty Group	
Medical	18.2
Surgical	14.5
Hospital-based	9.8
CLE Characteristics	
Region	
Northeast	26.3
Midwest	11.1
South	13.0
West	7.1
Type of Ownership	
Non-government, not-for-profit	23.3
Investor-owned, for-profit	9.7
Government, federal	0.0
Government, non-federal	9.1

[a] Missing data (<4 percent) have been omitted; percentages based on valid percent.

* Statistically significant at $P<.05$.

** Statistically significant at $P<.01$.

*** Statistically significant at $P<.001$.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B6. Percentage of Fellows and Residents Who Reported Knowing the Clinical Site's Priorities in the Area of Quality Improvement

PERCENT OF TOTAL SURVEYED (N=111)	65.8

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=111)
Gender	
Male	69.7
Female	57.1
Level of Education	
PGY-1 to PGY-3	52.9
PGY-4+	67.7
Specialty Group	
Medical	81.8
Surgical	63.6
Hospital-based	61.0
CLE Characteristics	
Region	
Northeast	78.9
Midwest	72.2
South	60.9
West	60.7
Type of Ownership	
Non-government, not-for-profit	69.8
Investor-owned, for-profit	74.2
Government, federal	60.0
Government, non-federal	50.0

[a] Missing data (<4 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B7. Percentage of Fellows and Residents Who Reported Participating in a Quality Improvement Project of Their Own Design or One Designed by Their Program or Clinical Site

PERCENT OF TOTAL SURVEYED (N=111)	40.5

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=111)
Gender	
Male	39.5
Female	42.9
Level of Education*	
PGY-1 to PGY-3	76.5
PGY-4+	33.3
Specialty Group*	
Medical	63.6
Surgical	27.3
Hospital-based	48.8
CLE Characteristics	
Region	
Northeast	42.1
Midwest	50.0
South	45.7
West	25.0
Type of Ownership*	
Non-government, not-for-profit	39.5
Investor-owned, for-profit	32.3
Government, federal	86.7
Government, non-federal	22.7

[a] Missing data (<4 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B8. Percentage of Fellows and Residents Who Reported Being Engaged in Interprofessional Quality Improvement Teams (eg, Nurses, Administrators, Pharmacists, etc) While Participating in a Quality Improvement Project of Their Own Design or One Designed by Their Program or Clinical Site

PERCENT OF TOTAL SURVEYED (N=45)	82.2

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=45)
Gender	
Male	80.0
Female	86.7
Level of Education	
PGY-1 to PGY-3	92.3
PGY-4+	80.6
Specialty Group	
Medical	71.4
Surgical	86.7
Hospital-based	85.0
CLE Characteristics	
Region	
Northeast	87.5
Midwest	88.9
South	76.2
West	85.7
Type of Ownership	
Non-government, not-for-profit	70.6
Investor-owned, for-profit	100
Government, federal	76.9
Government, non-federal	100

[a] Missing data (<7 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B9. Percentage of Fellows and Residents Who Reported Participating in Training with Nurses and Other Health Care Professionals in How to Transition Patients' Care

PERCENT OF TOTAL
SURVEYED[a] (N=110)

79.1

PERCENTAGE BY FELLOW AND
RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=110)
Gender	
Male	78.9
Female	79.4
Level of Education	
PGY-1 to PGY-3	76.5
PGY-4+	79.3
Specialty Group	
Medical	100
Surgical	74.5
Hospital-based	77.5
CLE Characteristics[a]	
Region*	
Northeast	78.9
Midwest	100
South	82.2
West	60.7
Type of Ownership	
Non-government, not-for-profit	74.4
Investor-owned, for-profit	87.1
Government, federal	73.3
Government, non-federal	81.0

[a] Missing data (<5 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B10. Percentage of Fellows and Residents Who Reported Having Been Placed, or Witnessing One of Their Peers Placed, in a Situation Where They Believed There Was Inadequate Supervision at the Clinical Site (eg, the Attending Was Not Available)

PERCENT OF TOTAL SURVEYED (N=111)	3.6

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=111)
Gender **	
Male	0.0
Female	11.4
Level of Education	
PGY-1 to PGY-3	5.9
PGY-4+	3.2
Specialty Group*	
Medical	0.0
Surgical	0.0
Hospital-based	9.8
CLE Characteristics	
Region	
Northeast	10.5
Midwest	0.0
South	2.2
West	3.6
Type of Ownership*	
Non-government, not-for-profit	0.0
Investor-owned, for-profit	0.0
Government, federal	6.7
Government, non-federal	13.6

[a] Missing data (<4 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B11. Percentage of Fellows and Residents Who Reported They Had Documented a History or Physical Finding in a Patient Medical Record They Did Not Personally Elicit at the Clinical Site (eg, Copying and Pasting from Another Note)
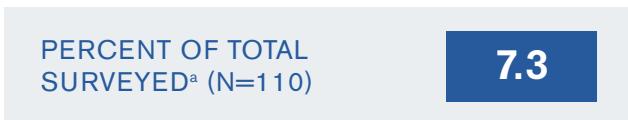
PERCENT OF TOTAL
SURVEYED[a] (N=110)

7.3

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=110)
Gender	
Male	5.3
Female	11.8
Level of Education	
PGY-1 to PGY-3	5.9
PGY-4+	7.6
Specialty Group	
Medical	0.0
Surgical	9.1
Hospital-based	7.5
CLE Characteristics[a]	
Region	
Northeast	10.5
Midwest	5.6
South	6.7
West	7.1
Type of Ownership	
Non-government, not-for-profit	14.0
Investor-owned, for-profit	0.0
Government, federal	0.0
Government, non-federal	9.5

[a] Missing data (<5 percent) have been omitted; percentages based on valid percent.

* Statistically significant at $P<.05$.

** Statistically significant at $P<.01$.

*** Statistically significant at $P<.001$.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

B12. Percentage of Fellows and Residents Who Reported Having Felt Pressured to Compromise Their Honesty or Integrity to Satisfy an Authority Figure During Their Education at the Clinical Site
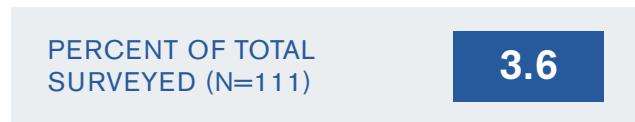
PERCENT OF TOTAL SURVEYED (N=111)	3.6

PERCENTAGE BY FELLOW AND RESIDENT AND CLE CHARACTERISTICS

Fellow and Resident Characteristics[a]	Fellows and Residents, % (n=111)
Gender	
Male	2.6
Female	5.7
Level of Education	
PGY-1 to PGY-3	0.0
PGY-4+	4.3
Specialty Group	
Medical	0.0
Surgical	5.5
Hospital-based	2.4
CLE Characteristics	
Region	
Northeast	0.0
Midwest	0.0
South	4.3
West	7.1
Type of Ownership	
Non-government, not-for-profit	2.3
Investor-owned, for-profit	6.5
Government, federal	0.0
Government, non-federal	4.5

[a] Missing data (<4 percent) have been omitted; percentages based on valid percent.

* Statistically significant at *P*<.05.

** Statistically significant at *P*<.01.

*** Statistically significant at *P*<.001.

Abbreviations: CLE, clinical learning environment; PGY, post-graduate year.

ACGME

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