

Challenges and Opportunities in the 6 Focus Areas: CLER National Report of Findings 2018

Kevin B. Weiss, MD; John Patrick T. Co, MD, MPH, CPPS, FAAP; and James P. Bagian, MD, PE, on behalf of the CLER Evaluation Committee

Introduction

The findings in the present report are integral to the nation's understanding of the current condition of how clinical learning environments (CLEs) are engaging residents and fellows in the CLER Focus Areas.¹ They also provide insight on how CLEs can continuously take important steps designed to purposely enhance the connection between graduate medical education and optimal patient care. Findings from the second set of CLER Site Visits suggest that CLEs are continuing to raise awareness in the CLER Focus Areas through education and training. There is also evidence that CLEs are working to establish mechanisms to improve patient safety in their organizations. For example:

- In general, residents and fellows reported awareness of their CLE's process for reporting patient safety events.
- Over three-quarters of CLEs reported tracking the number of patient safety event reports submitted by residents and fellows.
- Approximately 79% of residents and fellows reported knowing their clinical site's priorities in the area of quality improvement.
- Many CLEs reported efforts to implement online systems by which nurses and other clinical staff members can verify the competency of an individual resident or fellow to perform patient procedures without direct supervision.
- Nearly 90% of residents and fellows reported that their clinical site provided a supportive, nonpunitive environment for coming forward with concerns regarding honesty in reporting (eg, patient data, duty hours).

As demonstrated in these examples, the present findings revealed positive attributes of the CLEs visited. As the reader will likely see, these findings also revealed continuing challenges and opportunities for improvement. By disseminating these findings, the CLER Program aims to stimulate conversations necessary to achieve a full understanding of CLEs and implement appropriate action to improve the quality of the learning environment and patient care.

This section presents the views of the CLER Evaluation Committee on the significance of the findings from the second set of CLER Site Visits and the challenges and opportunities within each CLER Focus Area. The highlighted text presents selected findings based on both quantitative and qualitative results drawn from the CLER site visits. (Please refer to the Methodology section² for more information on the specific terminology used in describing the results.) As with the section reporting on the overarching themes,³ the CLER Program staff presented the CLER Evaluation Committee with a summary of results in each of the CLER Focus Areas to review in the development of this section.² The findings that follow are numbered for easy reference within the report. These numbers do not suggest order or importance.

The following sections highlight the need for CLEs to move from awareness and knowledge to comprehensive training and interprofessional engagement that includes experiential learning and demonstrated competence in the CLER Focus Areas. Additionally, other areas may require CLEs to further explore system-wide strategies to enhance the quality of learning and patient care in clinical settings.

Patient Safety

Patient Safety Finding 1

In general, residents and fellows were aware of their clinical learning environment's (CLE's) process for reporting patient safety events. Some residents and fellows appeared to have used the system.

Residents and fellows appeared to be most comfortable reporting through the chain-of-command and resolving issues at the local or departmental level. Often, these events did not appear to be entered into the CLE's patient safety event reporting system.

When residents or fellows did file a report, or when they had others file it for them, many received little or no feedback from the CLE.

Discussion

Improving patient safety has to start with those who are closest to daily direct patient care. In this regard, it is essential that residents, fellows, and faculty members fully participate in their CLE's systems and processes for improving patient safety.

The findings from this cycle of CLER visits suggest that graduate medical education (GME)-based curricular efforts, such as presenting information at resident and fellow orientation and offering web-based modules, are insufficient to ensure effective ongoing engagement in systems-based efforts to address patient safety. To enhance participation, CLEs need to involve residents, fellows, and faculty members in purposeful, planned, and continual experiential learning.

The findings suggest that residents and fellows have an awareness of their CLE's process for reporting patient safety events. However, overall resident, fellow, and faculty reported use of these systems remains modest.

Residents and fellows may not use the CLE's patient safety event reporting system for a variety of reasons, including belief that the chain-of-command is preferred. Resident and fellow behaviors that involve reporting patient safety events through chain-of-command may be embedded norms. In these situations, GME's model of supervisory hierarchy may be unintentionally and counterproductively being applied to patient safety event reporting.

CLEs that primarily rely on the chain-of-command for patient safety event reporting may benefit from examining this approach for its impact on patient care and its effect on role modeling. As reports work their way up the chain from junior residents to senior residents to faculty, important information may be filtered out or lost along the way—thereby preventing the CLE from knowing and sharing the full breadth and extent of the events affecting their patients. CLEs that recognize chain-of-command as a mechanism for patient safety event reporting need to monitor the ability of this approach to ensure optimal input.

Residents and fellows may also choose not to use the CLE's patient safety event reporting system based on beliefs that reporting is not a physician responsibility and, therefore, can be delegated to other health care team members. This may also be true of faculty members.

It is important that executive and GME leadership use active collaborative interventions to increase faculty engagement in reporting patient safety events and emphasize the faculty member's value as role models to residents and fellows. As noted in the *CLER National Report of Findings 2016*,⁴ executive leaders have a responsibility to ensure that faculty members have the skills to educate and train residents and fellows to become competent in risk identification, harm reduction, and creating a culture of safety.

Additionally, low levels of reporting among residents, fellows, and faculty members may relate to lack of feedback from the CLE that demonstrates how patient safety event reporting results in improved patient care. When a resident, fellow, or faculty member receives a response to his or her patient safety event report that contains informative feedback with specific improvement efforts, it encourages future reporting. It is important for each patient safety event to be viewed both as a learning experience for the individuals who took the time to report the event, as well as an opportunity to improve patient care.

To optimize reporting, CLEs will likely need a strategy that includes sustained active efforts anchored by demonstrable improvements in patient care that can be directly linked back to the patient safety event reporting system.

Patient Safety Finding 2

In general, residents, fellows, and nurses lacked clarity and awareness of the range of reportable patient safety events, including what defines a near miss/close call.

When queried, residents, fellows, and nurses also appeared to vary in their understanding of how the clinical learning environments used the reporting of adverse events and near misses/close calls to improve systems of care.

Discussion

One of the key challenges of patient safety programs is that they focus primarily on harm events. Harm events are much less frequent than non-harm events and occur at the later stages of system failures. Therefore, it is important to emphasize the role of risk-based reporting and encourage reporting of nonharm events or near misses/close calls.

In the absence of high-functioning systematic approaches to patient safety risk reduction, individuals often use “work-around” efforts to avoid patient safety problems or expedite patient care. There are numerous reasons why the use of “work-around” efforts to solve system problems is a poor solution for patient care. These 1-time solutions typically solve for an individual’s workflow needs and are not system based, which may have unintended consequences. So, there is little shared learning across team members, units, departments, service lines—resulting in inconsistent, inefficient, and potentially unsafe care.

CLEs need to ensure that their residents, fellows, faculty, and other members of the health care team clearly recognize what defines a patient safety event or near miss/close call, their responsibility to report it, and the value of reports in consistently improving patient care. In addition, it is important that CLEs share the benefits derived from addressing near misses, close calls, and unsafe conditions across clinical units and that all members of the team participate in that learning.

As noted in the 2016 *National Report*,⁴ broadly communicating the key learnings and improvement plans from patient safety event reviews to residents, fellows, faculty members, and other staff will help promote the value of systems-based solutions to ensure higher levels of patient safety.

Patient Safety Finding 3

Across clinical learning environments, a limited number of residents, fellows, and faculty members participated in interprofessional, interdisciplinary, systems-based improvement efforts, such as patient safety event reviews and analyses.

Many residency and fellowship programs used scheduled departmental morbidity and mortality (ie, M&M) conferences, case conferences, or grand rounds as the primary means of engaging residents and fellows in analyzing patient safety events rather than real-time interprofessional patient safety investigations.

Discussion

It is likely that the best way for members of the clinical care team to learn to value patient safety event reporting is by participating in interprofessional, interdisciplinary analysis of events. In addition, feedback on patient safety event reports—including individual feedback—encourages reporting and helps all members of the health care team (residents, fellows, faculty members, and others) understand how patient safety can be improved in individual departments and across the organization. As early learners, residents and fellows need a coherent understanding of patient safety event analysis, even though they may experience these analyses in a variety of clinical settings. The variability found across CLEs highlights some key opportunities for improvement. One opportunity is to ensure that in exposing residents to patient safety analysis, they also understand how the analysis translates into direct value—as demonstrated by an enhanced culture of safety, and actions that lead to rapid improvements in patient care that are monitored for sustained impact.

Many GME communities appear to rely on existing conference structures, such as M&M conferences or case conferences, as their primary educational activity to ensure residents know how patient safety events are investigated within the CLE. These types of activities are useful and convenient learning opportunities and address the complicated challenge of finding time in resident, fellow, and faculty schedules to learn as a community. They can also provide an educational opportunity for introducing foundational issues in patient safety.

These conference-based educational activities also present substantial challenges to providing residents and fellows with adequate exposure to patient safety event analysis. Conference-based educational activities most often reflect a set of cases that have been prioritized and batched for presentation, resulting in important time delays between the event and the educational activity. Such conferences often place time limits on the discussion of each event because of the need to review multiple events during each session. These group learning opportunities may have special purposes such as regulatory oversight (eg, peer review) or focus on issues related to a particularly challenging patient (eg, tumor boards or clinical pathology conferences), and do not necessarily focus on patient safety or address systems-based issues. For many of these conferences, interprofessional participation tends to be infrequent (particularly if the event is also used for peer review).

Considering the challenges, these conference-based activities would best serve as complementary experiences that prepare residents and fellows to participate in real-time, comprehensive patient safety event investigation and analysis.

Health Care Quality

Health Care Quality Finding 1

Although most residents and fellows indicated that they participate in quality improvement (QI) projects, many interviewed appeared to have a limited knowledge of QI concepts and of the specific methods and approaches to QI employed by the clinical learning environment.

Discussion

It has been nearly 20 years since the publication of *Crossing the Quality Chasm*.⁵ Noting this length of time, it is concerning that the CLER visits continue to identify variability in residents' and fellows' working knowledge of quality improvement (QI) concepts. During these past decades, hospitals and other health care organizations that serve as CLEs have developed substantial efforts to advance QI—in part related to regulatory, market, and consumer needs. Yet it appears that this health system knowledge and experience is not consistently and successfully transferred to residents and fellows during their GME experiences.

As noted in the discussions from the 2016 *National Report*,⁴ didactic educational strategies, while common, appear insufficient. Data from the CLER site visits suggest that residents' and fellows' exposure to QI is often fragmented. They rarely have the opportunity to work through the full scope of an improvement effort. Instead, they may plan an intervention they never get to test or implement a change with limited knowledge of the background evidence and no opportunity for follow-up evaluation. Experiential training in all phases of QI is necessary to develop the skills essential to improving health care quality. CLEs that do not fully engage residents and fellows in their QI efforts miss important opportunities to enhance the quality of patient care.

Other sections of this report highlight that GME faculty also vary in their understanding and practice of QI, and it appears that many CLEs may lack a critical mass of faculty who are competent in performing and instructing QI activities. Given the importance of faculty in delivering and overseeing care and their influence as role models, it is essential for CLEs to invest in faculty development in QI. For many faculty members, learning about QI and mentoring residents and fellows in QI may have to happen in tandem.

Health Care Quality Finding 2

In many clinical learning environments (CLEs), resident and fellow engagement in quality improvement (QI) appeared to be limited to implementing solutions prescribed by the CLE or the resident's or fellow's department. When residents and fellows participated in QI projects, many of the projects did not align with the CLE's overall goals, were limited in scope, or lacked all of the components of a complete QI cycle.

A limited number of CLEs integrated QI as part of system-wide efforts to provide residents and fellows with experiential learning aimed at achieving sustained improvements in patient care.

Discussion

From the residents' and fellows' perspective, learning becomes more meaningful if they can understand the full context of why the CLE is pursuing specific improvement goals and if they can see how efforts in QI can directly benefit their patients.

As highlighted in the 2016 *National Report*,⁴ optimal QI strategies should include formal, reliable, and routine structural links between the efforts generated by the residents, fellows, and faculty and the CLEs' staff-led efforts to improve care. Coordinating the residents' and fellows' QI efforts with those of the organization would benefit patients, tap into a rich resource of innovation, and provide the foundation for lifelong QI success.

If residents and fellows are to be competent in QI at the end of training, then they would benefit from being continually exposed to real-world metrics and outcomes that the CLE is tracking and an understanding of how the CLE is seeking to improve and achieve its goals.

Although residents and fellows can obtain basic knowledge of QI through formal didactic methods or simulated efforts, they acquire lifelong behaviors through real-life experiences and direct engagement in QI. It is therefore important for this engagement in QI to begin early in the residents' and fellows' CLE experience and build throughout their training.

Health Care Quality Finding 3

In most clinical learning environments, residents and fellows appeared to have limited participation in interprofessional quality improvement teams.

Discussion

The findings from the CLER visits noted both variability and, often, lack of interprofessional involvement in QI efforts. Residents often view interprofessional engagement as each professional being tasked to implement improvement activities. Genuine interprofessional engagement reflects collaborative involvement in QI at each stage of improvement work, including planning, implementation, and monitoring outcomes.

Substantial challenges exist to achieving full interprofessional engagement in QI, including schedule demands and rotational assignments. The GME community can overcome these challenges by collaborating with executive leadership across the professions (ie, nursing, pharmacy, social work, and others).

By participating in interprofessional QI efforts, residents and fellows have the opportunity to gain a comprehensive understanding of how to achieve QI success through sustainable system-based solutions. Furthermore, interprofessional engagement in QI provides positive models that enhance interprofessional, collaborative, team-based patient care, and workplace well-being.

Health Care Quality Finding 4

Across clinical learning environments, a limited number of residents and fellows reported access to data on quality metrics and benchmarks for the purposes of quality improvement, including data on outcomes of care for the population of patients for whom they are providing care.

Discussion

These findings highlight that, often, residents and fellows develop their skills primarily in the context of treating individual patients and do not develop the skills of using practice-based data (ie, aggregate data on their patient populations) to understand and improve patient care. It is essential that practice-based patient data be part of the formative learning process during GME. When residents and fellows become independent physicians, the health care systems in which they work will hold them accountable to practice-based data linked to value-based incentive programs and other publically reported data—and in some cases, these data will be linked to their specialty certification or medical license.

It is important for GME leadership to work closely with executive leadership in both QI and health information technology (HIT) to improve residents' and fellows' access to and use of practice-based data. Some of the issues to be addressed include determining how the HIT system recognizes the role of residents and fellows and how HIT operations can attribute patient care to residents and fellows. Other issues include identifying the best metrics for assessing resident and fellow learning and patient care, as well as sharing data with residents and fellows that reflect resident and fellow needs and organizational goals and priorities. Data that reflect the interprofessional team are also needed.

Many other important challenges are likely to be discovered and solved as CLEs work more closely to involve residents and fellows in analyzing and interpreting their practice-based data. More importantly, as residents and fellows spend time with their faculty reflecting on practice-based data, these efforts will promote QI innovation within the CLE.

Health Care Quality Finding 5

In a few clinical learning environments, the graduate medical education community has established resident and fellow work groups (such as committees) to increase resident and fellow engagement in quality improvement (QI). Of these, few were integrated with the clinical learning environment's formal QI processes. Occasionally, residents and fellows served on departmental QI committees; fewer were involved in institutional QI committees. If assigned to these committees, many had limited opportunities for meaningful participation.

Discussion

Resident and fellow QI work groups are likely to be most effective if they are established to function as part of the formal quality and patient safety operations of the CLE rather than activities based solely in GME. Resident work groups that are maintained by GME may not be formally integrated into CLE operations. Lack of formal integration is likely to result in inefficient and ineffective communication and misaligned expectations related to QI innovations, challenges, and successes.

A notable finding is that, occasionally, residents and fellows are being asked to serve on departmental QI committees, and some on organizational QI committees. To optimize this involvement, GME and CLE leaders must ensure that residents' and fellows' roles are well defined and include the expectation that they participate as full members of the committee. Furthermore, as learners, residents and fellows on QI committees should be encouraged to ask questions about how the committee does its work and how well the committee is achieving its goals. In addition, they can be a conduit to inform the committee about ongoing GME efforts in the area of patient safety and QI.

Health Care Disparities

Health Care Disparities Finding 1

Generally, across clinical learning environments, residents and fellows indicated awareness of and were able to describe populations served by the clinical site that were at risk for health care disparities.

Discussion

The findings suggest that, across many CLEs, residents and fellows are aware of populations at risk for health care disparities. This awareness is an essential early step in building resident and fellow capacity to both identify and address health care disparities in their clinical care environments. Part of building such capacity involves recognizing that patients can be at risk for health care disparities through a number of explicit and implicit biases associated with health care delivery.

Optimal CLEs recognize that patients at risk for disparities, as with all patients, require care personalized to their specific needs—based not only on their biological differences, but also on other social determinants of health (eg, personal social support networks, economic factors, cultural factors, safe housing, local food markets)—and impart this knowledge to their residents and fellows.

Disparities in health care that are associated with sociocultural determinants can be a result of CLEs and health care professionals not tailoring treatment according to patients' individual needs or circumstances. Sustainable systems-based solutions ensure all patients are cared for in a manner that appropriately takes into account the individual's sociocultural background and its impact on health care needs.

Sustainable systems-based solutions also ensure that, early in their GME experience, residents and fellows are able to describe populations who, from the CLE's perspective, are at risk—and understand how these patient populations may receive disparate health care as a result of unintended, unrecognized bias in their individual patient care experiences.

As frontline caregivers, residents and fellows are a valuable resource to the CLE as it formulates strategies to address and eliminate the factors that contribute to health care disparities.

It is also important to note that, as with health care quality and patient safety, residents and fellows cannot learn how to effect positive change around the complex issue of health care disparities unless their faculty and GME leadership have the skills, tools, and data to teach and mentor them in this area.

Health Care Disparities Finding 2

Few clinical learning environments appeared to have a formal strategy to address health care disparities or a systematic approach to identifying variability in the care provided to or clinical outcomes of their patient populations at risk for health care disparities. A limited number of clinical learning environments were engaged in comprehensive efforts to identify and eliminate health care disparities in a systematic manner; it was uncommon for residents and fellows, faculty members, or program directors to be involved in these efforts.

Discussion

The CLER site visits found that few CLEs have a well-defined or clearly articulated formal strategy to routinely monitor and address health care disparities among the patients to whom they provide care. As a result, residents and fellows may not learn how best to manage these issues until later in their careers.

In the absence of strategic efforts to address issues within CLEs, residents, fellows, and other health care professionals are likely to take it upon themselves to develop ad hoc solutions to address individual patient needs that are within their direct capacity to achieve, yet not necessarily anchored in sustainable systems-based solutions that benefit other patients with similar risks.

Working executive leadership, residents, fellows, and other members of the health care team could serve an important role in developing and implementing robust, systems-based solutions for patient populations with similar special needs—while still allowing for a personalized approach to each patient.

One approach to eliminating health care disparities that appears to be common across many CLEs is to take steps to ensure that all patients are treated the same. For example, CLEs may aim to achieve little if any between-patient differences in quality metrics that examine key processes, such as flu vaccination rates or venous thromboembolism prophylaxis.

However, health care disparities can often be missed if addressed solely with this type of outcome assessment that ignores the underlying processes that produce the outcome. For example, studies demonstrate that health care disparities can occur as a result of diagnostic delays or challenges with follow-up or continuity of care. CLEs would benefit from conducting a more systems-based comprehensive assessment of health care disparities among the patients they serve to better understand clinical outcomes that may differ by social, economic, or cultural backgrounds.

Residents and fellows have direct contact with patients and their families. As such, they are in an excellent position to be a critical member of any team working to solve health care disparities. The culture of GME is one of inquiry and learning, and residents and fellows are expected to be engaged in QI efforts. These efforts could be aligned with those of the CLE toward the common goal of eliminating health care disparities.

Faculty can also be an asset in the CLE's strategic efforts to eliminate health care disparities. An early step in achieving broad faculty engagement in the elimination of health care disparities would be for CLEs to align strategic efforts in this area with faculty incentives for best patient care. It is important for CLEs to also provide faculty development to ensure faculty have the skills necessary to create sustainable system improvements to address and eliminate health care disparities.

Health Care Disparities Finding 3

In addressing health care disparities, many clinical learning environments focused primarily on specific issues such as improving access to care or meeting regulatory requirements. When residents and fellows engaged in addressing health care disparities, it was most often at the level of enhancing patient care access through providing direct service; it was uncommon for them to participate in other systems-based solutions to eliminate health care disparities.

Discussion

Access to care—limited by financial constraints, workforce shortages, and geographic challenges—is an important contributing factor to health care disparities. At some time during their GME experience, many residents and fellows are likely to participate in efforts to improve patient access to care—such as providing care at community-based clinics for low-income populations or providing care in the context of short-term community outreach projects (eg, health fairs and screening programs).

Access to care, however, is not the only factor that underlies health care disparities. Many non-access-related sociocultural and economic barriers affect patient care as well.

Absent a well-defined and communicated strategy, residents, fellows, and other health care team members learn about populations at risk for health care disparities within their CLE in an ad hoc fashion, often at the point of care. By developing and implementing a strategic plan focused on eliminating health care disparities, CLEs can improve resident and fellow engagement and skill development in this important aspect of health care and thus improve patient care. For the CLE, a strategic plan might include answering some of the following questions:

- What types of health care disparities—beyond issues of access—may unintentionally exist in that CLE's health care system?
- How does the CLE set priorities to address these concerns?
- What are the performance measurements that may address these issues and maintain the success of interventions?
- Can any differences in outcomes be attributed to unequal treatment?
- Conversely, can any differences in outcomes be attributed to failure to consider individualized needs—where certain populations may need more care rather than equal care to achieve the same outcomes?

In addition to the impact on patient care, persistent unaddressed issues in health care disparities can have lasting impact on the health care team, including residents and fellows. Caring for patients at risk for health care disparities can accelerate burnout because providers go to extraordinary lengths to meet patient needs absent sustainable, systems-based solutions to support the optimal clinical care of these patients.

Health Care Disparities Finding 4

Generally, residents and fellows reported that learning about cultural competency happened informally while providing clinical care. Across most clinical learning environments, formal education and training on cultural competency did not address the specific populations served by the institution.

Discussion

The diverse, often vulnerable, patient populations served by CLEs provide an important opportunity for teaching residents and fellows to be respectful of patients' cultural differences and beliefs and the social determinants of health. In learning cultural competence, residents and fellows would benefit from moving beyond one-time educational activities (eg, orientation) to a more formal, longitudinal program of progressive educational activities that continues throughout training. Similarly, residents and fellows may benefit from experiential learning within a community context for some of the culturally unique groups in the local environment. These experiences would prepare them not only to address the disparities they face today; they also would contribute to building the skills to manage other unknown challenges in health care disparities that might arise in their future careers.

In optimal CLEs, residents and fellows gain their skills in cultural competency based on experiential learning that involves educating them about how differences in patients' sociocultural backgrounds can affect clinical care, engaging them to identify and implement strategies to address these challenges, and having them apply appropriate assessment tools to determine the efficacy of the actions. CLEs and GME will most likely succeed in this effort via an interprofessional, team-based, systems-oriented approach.

An often-overlooked issue in achieving cultural competency in clinical care is the impact of socioeconomic and cultural differences within the care team, including residents, fellows, faculty, and other clinical staff. It would benefit both patient care and the CLE's workforce engagement if any program designed for improving cultural competency included a focus on understanding these differences among the care team members.

Care Transitions

Care Transitions Finding 1

Most clinical learning environments did not appear to have a standardized approach for facilitating resident and fellow change-of-duty handoffs. There appeared to be little understanding of the difference between standardization and uniformity.

In general, residents and fellows lacked awareness and understanding of the importance of standardizing essential elements of the handoff process.

Templates or tools were frequently used to facilitate the handoffs. Across programs and the clinical learning environment, the use of and type of templates varied. It appeared that residents most often engaged in face-to-face handoffs; fellows often conducted handoffs by telephone or e-mail.

Discussion

In the 2016 *National Report*,⁴ it was noted that, in many CLEs, faculty members and program directors confused standardizing handoffs with a request to create a single and uniform “one-size-fits-all” solution. CLEs and the GME community are encouraged to continue to find solutions that standardize essential properties of the handoff process while allowing for additional specialty- or unit-specific components as needed. Although no generally agreed upon essential properties have been established, several properties are important, including:

- the creation of “to-do” lists;
- the use of “if-then” statements;
- the ability and expectation for the receiver of information to ask questions;
- “read-back” at the end of a patient handoff; and
- the setting of expectations for when it is essential to move the handoff to the patient’s bedside.

It was also noted in the 2016 *National Report*⁴ that patient handoffs are an important communication skill that transcends any individual training program. With their increasing reliance on electronic communication, CLEs would benefit from greater diligence in ensuring that residents and fellows develop the oral communication skills that ensure high-fidelity handoffs. Resident and fellow handoffs should be supervised and evaluated by faculty members in a fashion equal to that of other technical skills. Faculty and senior residents can also be very influential role models for the residents and fellows in how patient handoffs should be conducted. By calling attention to the importance of good handoffs, supervision could promote better care transitions throughout the CLE.

A systems-based and standardized approach to patient care handoffs can improve patient safety by confirming that important elements of care have been communicated in an efficient and reliable manner. Ensuring that residents and fellows have the skills to conduct effective and reliable patient handoffs increases the quality of transitions, decreases errors of omission, eliminates confusion of the handoff process or the information that is being relayed, and enhances professionalism. Standardization also may decrease anxiety by providing those on the receiving end of the transfer with a clear narrative of patient care expectations. Having a standardized approach to handoffs also allows faculty members to provide a more consistent assessment of resident and fellow skills in transitioning care.

CLEs would benefit from establishing a common set of expectations of what they—as a CLE—would define as an appropriate handoff. With a common set of expectations, all of the health care professionals in the CLE could align clinical care goals.

Care Transitions Finding 2

Residents, fellows, and nurses expressed concerns that communication during transitions from the emergency department to inpatient care, from service to service in inpatient settings, from inpatient care to outpatient care, and from one hospital to another was often incomplete or inaccurate and created risk to patient safety.

A standardized, organization-wide approach to training in and managing transitions in care between clinical services assigned to resident and fellow teams (eg, emergency department to inpatient care, operating room to intensive care unit, intensive care unit to floor, and medicine to surgery) was uncommon across clinical learning environments.

Discussion

There are many advantages to including residents and fellows in strategic planning around transitions of care. As individuals at the frontlines of care, residents and fellows often see firsthand the consequences of ineffective and inefficient care transitions. When residents' and fellows' role in such strategies is limited to implementing changes designed by others, they lose the opportunity to gain experience in developing systems-based approaches to QI.

Similarly, when executive leadership excludes residents and fellows from their QI activities around transitions of care, they run the risk of creating suboptimal solutions, such as preventable readmissions. Nearly all transitions of patient care necessitate a team effort that, in addition to the patient, includes clinical staff, administrative support, and CLE operations. Residents and fellows can bring unique insights to improving these critical junctures of patient care.

Care Transitions Finding 3

Across clinical learning environments, a limited number of programs appeared to use formal criteria to assess residents' and fellows' skills in change-of-duty handoffs. Across programs, it was uncommon to find faculty members consistently engaged in direct observation of resident and fellow change-of-duty handoffs. When faculty members were involved, the level of engagement and the process for supervision varied. Little or no monitoring of change-of-duty handoffs by graduate medical education leadership, executive leadership, or patient safety and quality leaders of the clinical learning environment was reported.

Discussion

Change-of-duty handoffs are high-risk moments in patient care and, as such, necessitate skill building for optimal performance. Some of these skills can be developed through validated simulation-based education strategies. However, it is important that much of this skill development occur during actual supervised clinical care.

In developing their skills, residents and fellows benefit from observing and participating in handoffs that include clinicians with many years of experience in both simulated and authentic patient care experiences. When handoffs are conducted solely among residents who are very early in training, the residents do not have the opportunity to learn from the expertise and advanced skills of more senior residents, fellows, or faculty.

Assessment and monitoring of handoffs involves skill building for the faculty as well and is an important component of faculty development. Achieving high-fidelity handoffs requires continual faculty diligence in role modeling, observing, assessing, monitoring, and providing constructive feedback to learners on their performance.

CLEs with faculty who are vigilant in their attention to building residents' and fellows' skills in handoffs and transitions of care contribute to patient safety and improvement in patient care.

Supervision

Supervision Finding 1

Across most clinical learning environments, residents, fellows, and faculty members reported an overall culture of adequate supervision within the graduate medical education community.

Clinical learning environments also faced challenges of under- and oversupervision.

- Residents, fellows, faculty members, and program directors perceived that undersupervision occurred mainly during times of high acuity, high patient volume, nights and weekends when the number of faculty members available to supervise was limited, and when the demands of competing clinical responsibilities exceeded the capacity of faculty members to provide adequate supervision.
- Many faculty members and program directors perceived that external factors were contributing to oversupervision that impeded resident and fellow readiness for clinical practice after training. The most common reasons given for concerns regarding oversupervision related to billing rules and medical liability concerns.

Discussion

As reported in the first cycle of CLER visits, the findings continue to illustrate the inherent challenge that CLEs have in achieving the right balance in supervision, an issue that is necessarily complicated by the need for different levels of supervision at different levels of training.

Oversupervision of residents and fellows can have the negative consequence of producing physicians who are unprepared for independent practice. This lack of preparedness may contribute to patient safety risks and, for the physicians, may contribute to stress and burnout.

Also, as noted in the 2016 *National Report*,⁴ billing requirements, payment policies, and regulatory and accreditation rules appear to continue to influence CLEs and residency programs by placing significant restrictions on the amount of patient care that residents and fellows can perform without close direct supervision. An environment in which residents and fellows are oversupervised can lead to a cycle that is demoralizing to residents and fellows, decreasing their ownership for patient care and thus perpetuating oversupervision due to faculty concerns of their competence. The privilege of progressive autonomy, on the other hand, promotes a learning environment in which residents and fellows can build confidence and grow in their clinical competence.

Alternatively, undersupervision potentially creates patient safety vulnerabilities. In addition, undersupervision contributes to residents' and fellows' stress, anxiety, and possible burnout, all factors affecting patient safety as well. Undersupervision also decreases the opportunities for teaching and learning.

The issues of under- and oversupervision are necessarily complex and demand active, constant engagement and monitoring through a collaborative effort between GME and the CLE's executive leadership.

Supervision Finding 2

Across many clinical learning environments, residents and fellows expressed concerns about their peers providing consultative services without adequate supervision, leading to patient safety vulnerabilities.

Discussion

This finding highlights the importance of adequate supervision of resident and fellow consultative services within a teaching environment. Consultations are a major source of learning for residents and fellows, and undersupervised consultations can be important missed learning opportunities and can become preconditions to patient safety events. Although the concerns detailed in this finding were specific to peer-to-peer consultation, they may also be a reflection of the larger clinical learning environment and consultative processes in general.

Consultative services form a critical component of most patient care. Patients deserve expert and high-quality care throughout the care process. Consultations can be inefficient due to delays in completing the consultation, perceived lack of responsiveness to the reason for the consultation, and inadequate communication of findings and recommendations, all of which can adversely affect patient care.

There are many factors that potentially contribute to inefficient and ineffective consultations. The referring resident or fellow may create delays in initiating a consultation or not state clearly the reason for the consultation. Both of these problems can be mitigated by appropriate supervision and mentorship. Similarly, the consulting physician may not complete the consultation in a sufficiently timely fashion to optimally address patient care needs or may fail to directly address the reason for the referral. These challenges are more likely to arise when consultative services are unsupervised and are of particular concern during nights and weekends, when direct communication with a faculty consultant may be more difficult to secure.

Executive leadership may want to consider periodically assessing the quality of consultative services as part of their systems approach to improving patient safety and health care quality.

Supervision Finding 3

Across many clinical learning environments, residents and fellows expressed reluctance to request help from the attending physician or to report concerns regarding supervision. Residents and fellows were hesitant to ask for assistance for several reasons, including a lack of understanding about when to escalate concerns to a supervisor; an unwillingness to appear unprepared by asking for assistance; a fear of retaliation; a sense of shame; and concerns of pushback from peers, attending physicians, and consultants.

Discussion

A culture of patient safety and learning best operates in an environment that is psychologically safe for the residents and fellows. Faculty behaviors that instill residents and fellows with a sense of shame or fear of inquiry adversely affect learning and worsen the quality of patient care. Therefore, it may be helpful for CLEs to ensure that they train residents, fellows, and faculty on expectations related to seeking or responding to requests for assistance.

When receiving a call for assistance—senior residents, fellows, faculty members, and consultants need to have supervisory systems that eliminate barriers to requesting assistance. Senior residents, fellows, faculty members, and consultants need to be supportive regardless of the quality of the inquiry—no matter the time of day or day of the week.

Executive leadership in collaboration with the GME leadership needs to develop and implement mechanisms that optimize faculty skills in supervision and find ways to recognize and value faculty members who model desired supervisory behaviors.

Supervision Finding 4

Many clinical learning environments made efforts to implement online systems by which nurses and other clinical staff members could verify the competency of an individual resident or fellow to perform various patient procedures without direct supervision. When an online system was available, nurses were not aware of its existence, did not know how to access it, or rarely used it.

Across many clinical learning environments, nurses indicated that, in the absence of an attending physician, they relied on familiarity, trust, or year of training.

Discussion

Patient safety and quality departments could benefit from working with GME to jointly develop proactive monitoring of residents and fellows. For example, if the CLE provided accessible and transparent information regarding which procedures an individual resident can perform, that would make it easier for other members of the care team to know when direct supervision is needed. However, these systems are likely to be underused unless the CLE clearly communicates expectations regarding use of this information in the daily workflow of clinical care. In many CLEs, educational activities may be needed to assist the nursing staff in understanding their important roles and responsibilities in working with the GME faculty to ensure optimal supervision and safe patient care.

It appears that, in many of the CLEs, patient care may benefit from strengthening the systems for interprofessional involvement that ensure that residents and fellows are always practicing under the most appropriate level of supervision. It is important that such systems are a standard part of the workflow process rather than based on individual judgment. Behaviors that are established as a routine part of the workflow process decrease defensiveness and minimize the potential for expected actions to be misinterpreted.

Supervision Finding 5

Residents and fellows, faculty members, program directors, graduate medical education leadership, patient safety leadership, and executive leadership varied in their awareness of patient safety events related to supervision.

In general, the executive leadership and the patient safety and quality leaders of the clinical learning environments indicated that they did not actively monitor the supervision of residents and fellows. They indicated monitoring is limited to retrospective review of patient safety events. Responsibility for resident and fellow supervision was viewed as primarily the purview of the graduate medical education community. Across clinical learning environments, some program directors reported having managed issues related to resident and fellow supervision within the past year that resulted in a patient safety event.

Discussion

Comprehensive solutions for adequate, but not excessive, supervision of resident and fellow physicians within CLEs entail ongoing attention and monitoring. Although this responsibility is centered within GME, it is essential for patient care that it include regular review by the executive leadership of the CLEs.

Involving the CLE's executive leadership on issues of supervision can lead to a more comprehensive awareness of the clinical areas where risks to patient safety exist and where improvements to patient care are needed. The GME community is responsible for the foundational management of resident supervision. However, the patient care environment will benefit only if both the GME and executive leadership of the CLE create a clear, aligned vision of supervision requirements and monitor it closely.

Fatigue Management, Mitigation, and Duty Hours

Fatigue Management, Mitigation, and Duty Hours Finding 1

When provided with a scenario of being maximally fatigued 2 hours before sign-off, across clinical learning environments, some residents and fellows reported that they would continue to work until their sign-off rather than expect to be taken off duty. When presented with the same scenario, faculty members and program directors were less likely to express the belief that residents and fellows would continue to work under such circumstances.

Discussion

The CLER site visit protocol for this report of findings was largely conducted before the 2017 release of the updated Section VI of the ACGME Common Program Requirements⁶—and its emphasis on fatigue management and mitigation. The present findings primarily reflect the CLEs' experiences under the 2011 Common Program Requirements Section VI.⁷

The revisions to Section VI of the Common Program Requirements released in 2017 have relaxed the requirement for the 16-hour workday for a postgraduate year 1 resident.⁷ In this transition of Common Program Requirements, it is essential for patient safety that CLEs develop and maintain close monitoring of and support for residents and fellows who are fatigued while caring for their patients.

Respective of the changes in the Common Program Requirements, the findings suggest that in some CLEs, residents and fellows view fatigue management interventions as optional. The responses to the scenario suggest that residents and fellows do not necessarily appreciate how fatigue management links to patient safety and clinical outcomes. It is the CLE's culture of patient safety that establishes the expectations for resident and fellow behavior around fatigue management.

It is recognized that faculty and residents and fellows who are in their senior years of training may face exceptional situations when they need to weigh the balances of working while fatigued versus transitioning care. When CLEs have experiential learning, assessment, and feedback to proactively addressing fatigue management, residents and fellows learn how to make the best judgments related to their personal fatigue and patient safety, skills that they can draw on throughout their professional career. Strong fatigue management systems enable CLEs to ensure the highest level of patient care while being conscious about stress and fatigue among its residents and fellows.

CLEs that have robust systems for fatigue management and mitigation should expect residents and fellows to consistently use them. When fatigue mitigation strategies are not used in a consistent manner, the CLE is at increased risk of adverse impact on patient care.

Fatigue Management, Mitigation, and Duty Hours Finding 2

In many clinical learning environments, residents and fellows described witnessing signs of burnout in a number of their colleagues. The main contributors to resident and fellow burnout related to high patient volume, patient acuity, and nonphysician responsibilities. Also, residents and fellows reported observing signs of burnout among faculty members and program directors.

Faculty members and program directors reported the same contributing factors identified by residents and fellows and emphasized clinical productivity pressures, extensive documentation requirements, inadequate clinical and administrative support, and the overall challenge of balancing teaching, research, administrative responsibilities, and patient care.

Discussion

For the first time in the CLER program, protocol for the site visits included questions to the residents, fellows, and faculty about their perception of burnout. As noted in the finding above, in many CLEs, residents, fellows, faculty, and program directors witnessed signs of burnout. These findings are an important signal to both the GME community and CLEs, as they reveal a problem with the physician workforce that has serious potential for adversely affecting patient care.

For the CLE, physician burnout can lead to loss of empathy for patients and frustration on the part of patients and family members. In addition, burnout degrades the ability to learn and teach and contributes to lower quality performance and poor morale in the workplace, which can negatively affect the entire care team. Physician burnout can also lead to unprofessional behavior and risk for self-harm. All of these factors can increase medical liability, workforce turnover, institutional costs, and risk of suboptimal patient outcomes.

Recognizing that residents and fellows often incorporate the skills and behaviors modeled by faculty into their own current and future clinical care—seeing burnout among their faculty members is likely to influence how they manage their future careers and perceive their future career choices.

The issue of physician burnout is extremely complex and has become the subject of not only the medical profession but, more broadly, of the health care workforce in general.⁸ In optimal CLEs, faculty members are involved in both the design and the implementation of strategies to prevent burnout.

A number of factors related to financial productivity, patient complexity, and regulatory requirements have increased faculty workload over the past decade. The ACGME, through accreditation requirements and attention to the maximum number of duty hours per week, has encouraged better fatigue management for residents and fellows. However, no comparable widespread guidelines exist for faculty, resulting in increased fatigue, patient safety vulnerability, burnout, and insufficient role modeling of behaviors to manage and mitigate fatigue.

Ultimately, patient care will benefit from CLEs taking systematic approaches to burnout management and prevention that include all members of the patient care team. These approaches would best benefit the CLE if they were anchored in the strategic goals and measured as part of the organization's performance management activities.

Fatigue Management, Mitigation, and Duty Hours Finding 3

In general, clinical learning environments had developed and implemented some form of fatigue management for residents and fellows. Mitigation focused mainly on provision of sleeping facilities (eg, designated call rooms) and transportation options (eg, taxi services).

A limited number of clinical learning environments had systematic strategies and solutions that focused on prevention, recognition, and effective mitigation of fatigue and burnout. If strategies existed, they were generally in response to an event related to fatigue or burnout.

Discussion

As previously mentioned, the CLER protocol for this report of findings was conducted primarily before the release of the updated Section VI of the ACGME Common Program Requirements in 2017—and its emphasis on fatigue management and mitigation.⁶ The findings primarily reflect the CLE experiences under the prior version of the Common Program Requirements Section VI.⁷

It appears that, while CLEs have met their responsibilities to implement basic strategies for fatigue management, residents, fellows, faculty members, and nurses reported instances of resident and fellow fatigue. Fatigued providers can place patients at risk for medical errors and also harm their own health and others (eg, car accidents, needle sticks, burnout). Fatigue management is about both patient safety and provider well-being and safety.

At the time of these CLER visits, across most CLEs, assessment of resident and fellow fatigue appeared to be largely limited to monitoring the number of hours worked. Yet, many other factors can cause fatigue, including task or mental overload due to high-volume or high-acuity patient activity, circadian rhythm disruption, chronic sleep deficit, and non-work-related activities. Moreover, “fatigue” can also be a risk factor for burnout or depression.⁹ Optimal CLEs train residents, fellows, faculty members, and other clinical staff to consider such factors—and not only duty hours—in determining a provider’s “fitness for duty.”

CLEs may benefit from implementing more advanced organizational strategies for fatigue management, such as scheduling the clinical workforce to maximize rest and account for circadian rhythms, allowing for strategic naps, batching calls to residents and fellows where appropriate, and implementing systems to relieve tired providers from direct patient care responsibilities. Strategies to address system and work process issues contributing to fatigue need to be informed by the interprofessional frontline care delivery experience in development and implementation. This approach to thinking about fatigue management and mitigation is embedded in the philosophy of the ACGME’s 2017 Common Program Requirements,⁶ providing a GME lens for effecting change.

For meaningful change to occur, CLEs need to progress from individual tactics toward system-wide strategies that are implemented and routinely monitored to ensure their efficacy. Ultimately, rapid evolution to address the issue of fatigue management will necessitate the GME community working with their CLEs to effect broader system change that is directly linked to safe patient care.

Professionalism

Professionalism Finding 1

In many clinical learning environments, graduate medical education and executive leadership expressed intolerance for behaviors that are considered unprofessional. Across some clinical learning environments, residents, fellows, and clinical staff described witnessing or experiencing incidents of disrespectful or disruptive behavior on the part of attending physicians, residents, fellows, nurses, or other clinical staff. These findings ranged from descriptions of isolated incidents to reports of disrespectful behavior that was persistent or chronic in nature.

Discussion

Although most CLEs appear to have mechanisms to address disruptive and disrespectful behaviors of their trainees, faculty, and other clinical staff, these findings suggest that existing mechanisms are neither consistently applied nor effective. It appears that many organizations may be equating a culture of no tolerance for unprofessional behavior with acceptance of low prevalence of these behaviors, resulting in normalization of deviant behaviors.

Isolated episodes of unprofessional behavior are often different from chronic persistent unprofessional behavior. Any chronic persistent unprofessional behavior—either directed toward residents and fellows or emanating from residents and fellows toward other clinical team members—reflects negatively on the CLE and GME leadership and suggests their lack of ability to adequately address the issues. An optimal organizational culture includes effective ways of quickly and successfully identifying, remediating, and preventing these behaviors.

Efforts to deal with unprofessional behavior need to ensure the consistent application of standards, avoiding capricious exceptions. In addition, CLEs need to enhance their efforts to seek out and address issues of professionalism that could be detrimental to patient safety, impede quality improvement efforts, or foster an unacceptable culture within the GME community and among hospital/medical center staff.

The persistent search for and elimination of unprofessional behavior over time creates confidence in the clinical team to conduct its work in a psychologically safe environment that positively and directly impacts patient care.

Professionalism Finding 2

Residents and fellows reported instances of feeling pressured to compromise their integrity to satisfy an authority figure.

Discussion

The finding—that residents and fellows report that they have felt pressured to compromise their integrity to satisfy an authority figure—presents an opportunity to better understand how the influence of senior residents, faculty, and GME leaders shapes the professional identity of physicians in their early stages of post-graduate medical education.

Many reasons exist for why a resident or fellow may feel pressured to compromise his or her integrity. Examples vary widely and include lack of knowledge on a subject—creating a false or imperfect assessment of the situation—and dishonest behavior on the part of a supervisor. In either example, it is essential that residents and fellows are comfortable and safe in raising concerns and are not placed in situations where they feel coerced into being dishonest.

In developing their professional identity, residents and fellows progressively construct a framework for viewing professional integrity in the context of delivering patient care. This framework is developed dynamically based on continual feedback from colleagues and mentors and is likely influenced by other members of the CLE in leadership roles as well.

Supporting residents and fellows as they develop their professional identity is primarily the responsibility of the GME community and is guided—in part—through assessment of competency. However, it is the responsibility of executive leadership to establish and maintain a culture where residents and fellows (as well as other staff) can raise concerns without worries or fears of retribution.

The ultimate responsibility for creating and maintaining a safe culture rests with the CLE, as it directly affects the quality of patient care. In this regard, executive leadership has an important responsibility to ensure a clinical care environment where residents and fellows are invited and expected to speak up about issues of professional concern and are supported in the process.

Professionalism Finding 3

Across clinical learning environments, residents and fellows described experiencing professionalism issues in obtaining consultation services (eg, delays or lack of responsiveness to providing assistance in patient care, disrespectful communication in response to requests).

Discussion

All physicians need to call upon the expertise of other colleagues to help them make better diagnostic and treatment decisions. Unprofessional behavior on the part of consultative physicians is a detriment to safe and high-quality patient care. An unprofessional consultative experience may yield many untoward consequences, such as increased likelihood of errors in decision making due to incomplete communication, delays in diagnosis and treatment, insufficient supervision, antagonistic relationships between clinical services, and worst of all, patient harm.

Findings of unprofessional behavior related to consultative services are, to a large degree, a reflection of the CLE's culture and therefore a reflection of its executive leadership and attentiveness to the effects of culture on patient care.

A CLE can improve the quality of consultations in many ways, including: clarifying the value of consultations and the importance of asking for help, focusing on the value of teamwork, fostering respectful interdisciplinary interactions, and monitoring and intervening in response to signals of unprofessional behavior. They can also offer technology and other tools such as secure text messaging to facilitate rapid communications.

Ultimately, it is to the advantage of both the patient care experience and resident and fellow learning to ensure consistent, high-quality consultative services at all times.

Professionalism Finding 4

Generally, residents and fellows appeared to be aware of the mechanisms and resources available to resolve perceived mistreatment if seeking assistance beyond those offered by graduate medical education. Many also indicated that they would inform their chain-of-command. The perceived effectiveness of the institution's response varied across clinical learning environments.

Occasionally, residents and fellows indicated that they would not report mistreatment out of concern for adverse consequences of reporting.

Discussion

Optimal CLEs establish clear mechanisms both within and outside of GME leadership for residents and fellows to follow in reporting and addressing unprofessional behavior. Ideally, these various mechanisms feed into a single repository so that leadership can identify themes, frequency, and chronicity of concerns about professionalism and potentially share lessons learned across the organization.

Residents or fellows may not report unprofessional behavior that they have experienced or witnessed if they feel as though they do not have anyone to report to outside of GME or if they are confused over whom to report to. Alternatively, in such a situation, they may go outside the organization without exhausting opportunities to address their concerns within the CLE and create sustainable solutions that may mitigate the situation for other learners.

Ensuring that residents and fellows (and other health care professionals) have a high degree of psychological safety can only benefit patient care and optimize learning. Enhancing collaboration between the CLE and GME leadership in tracking and managing reports of unprofessional behavior will promote learning that benefits both the CLE and its GME programs.

Many GME leaders may believe that their residents and fellows operate in an open, safe, protective environment with no need to seek assistance outside of their GME community. However, multiple reasons exist for why a resident or fellow may feel unsafe—and these may or may not be related to the overall quality of the GME program. Therefore, for the well-being of the residents and fellows, it is essential they have a well-supported, easily accessible, known, and trusted non-GME pathway for seeking assistance when faced with unprofessional behavior.

Having psychological safety at work is one of the fundamental mainstays for patient safety and health care quality. It is the responsibility of the CLE's leadership to ensure that they have such mechanisms to support well-being not only for residents and fellows but also for all of the members of the health care team.

Professionalism Finding 5

Across clinical learning environments, some residents and fellows reported documenting history and physical findings in a patient's health record that they did not personally elicit (such as copying and pasting in the electronic health record without proper attribution).

Discussion

The deployment of electronic health records (EHRs) across the United States over the past decade has led to myriad challenges. The finding that some residents and fellows reported documenting history and physical findings in a patient's health record that they did not personally elicit is concerning and may represent an outcome that is the result of the CLE distributing technology without supporting its health care professionals to develop the skills needed to manage change from a paper-based health record system to an EHR system.

Many EHRs have functions that prepopulate areas of the patient's medical record, and for some EHRs, it is relatively easy to copy a note from a prior section of the patient's history or physical and place it in another note. These workflows by themselves are not the focus of this finding.

Residents and fellows may have many compelling reasons to copy and paste work from others. Primary among such reasons is that this practice may decrease the amount of unnecessary duplication of work—an important factor in a health care environment that focuses on patient volume and clinical productivity.

It is the lack of proper attribution that raises concern. Copying without appropriate attribution results in documentation that represents the efforts of some other individual. Most importantly, this activity can lead to perpetuation of inaccuracies in documentation, thereby increasing the risk of patient harm. Copying and pasting without attribution can also lead to increased medical liability exposure.

Copying and pasting is a workaround to a system problem and a reflection of a system impediment. It is the CLE's responsibility to address this impediment and implement an EHR that minimizes the need for copying and pasting and maximizes correct attribution when the function is used appropriately (eg, bringing forward laboratory data or vaccination dates).

Solving this issue involves close collaboration between the CLE's executive leadership, the department of health information technology, and the health care professionals (including residents and fellows) who are on the front lines of patient care.

Work in this area is likely to be ongoing for some time, as this challenge for CLEs is also a challenge for the health care industry at large. It is important that these challenges are viewed as high priority as they affect patient safety and the quality of care.

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CLER Evaluation Committee: John Patrick T. Co, MD, MPH, CPPS, FAAP, Co-Chair, Partners Healthcare, Boston, MA; Kevin B. Weiss, MD, Co-Chair, ACGME, Chicago, IL; James P. Bagian, MD, PE, University of Michigan, Ann Arbor, MI; Terry L. Cline, PhD*, Oklahoma State Department of Health, Oklahoma City, OK; David Entwistle, MHSA*, Stanford Health Care, Stanford, CA; Rosemary Gibson, MSc, JAMA Internal Medicine, Author, *Wall of Silence, The Treatment Trap*, Arlington, VA; Linda A. Headrick, MD, MS, FACP, University of Missouri School of Medicine, Columbia, MO; Marcia Hutchinson, MD, Mercer University School of Medicine (Savannah Campus), Savannah, GA; LCDR Dinchen Jardine, MD*, Naval Medical Center–Portsmouth, Portsmouth, VA; Anai N. Kothari, MD, MS, Loyola University Chicago, Maywood, IL; Catherine M. Kuhn, MD, Duke University School of Medicine, Durham, NC; Douglas E. Paull, MD, MS, FACS, FCCP, CHSE, VA National Center for Patient Safety, Ann Arbor, MI; Lakshmana Swamy, MD, MBA, Boston University & VA Boston Healthcare, Boston, MA; Andrew M. Thomas, MD, MBA, Wexner Medical Center at The Ohio State University, Columbus, OH; Marjorie S. Wiggins, RN, MBA, DNP(c), NEA-BC, Maine Medical Center, Hampton Falls, NH; Ronald Wyatt, MD, MHA, DMS(Hon), Hamad Medical Corporation, Madison, AL

*Past CLER Evaluation Committee member