

Improving Clinical Learning Environments for Tomorrow's Physicians

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“Approximately 2 months ago, I had a patient where I accidentally administered a wrong dose of fentanyl during a procedure. The patient developed severe hypotension, and the procedure had to be temporarily halted until we could get her blood pressure back up. My attending was close by. He responded quickly. Ultimately, no harm was done.

“The reason I believe this happened is that during a procedure I’m sometimes required to administer fentanyl and must dilute it during the procedure. There are two dilutions, either to directly administer by syringe, or for use as an intravenous drip. We do this dilution while we are monitoring the patient, and sometimes things get challenging.

“Of course I reported this as part of our department’s morbidity and mortality conference. I am not sure if the hospital patient safety report was filed; I expect the circulating nurse did that. My attending and I discussed this. I was told to re-review the approach to dosing fentanyl during procedures and to be more careful.”

This experience was reported by a second-year anesthesiology resident, but dozens of similar patient-care experiences have been described to us by residents in various specialties during site visits that the Accreditation Council for Graduate Medical Education (ACGME) has been conducting as part of our Clinical Learning Environment Review (CLER) program.¹ Over the past year, the ACGME has visited more than

100 teaching hospitals in the United States in an effort to assess the quality of the learning environments in which this country’s 117,000 residents and fellows are immersed. Although the formal assessment of the CLER program’s first-year experience is not complete, the early findings indicate a generalized lack of resident engagement in a “systems-based practice” of medicine in the clinical environments in which they learn and provide clinical care. Solving this problem, we believe, will require a coordinated and concerted effort by both the leadership of graduate medical education (GME) and the executive leadership and governance of U.S. teaching hospitals.

According to the anesthesiology resident’s account of events, the program’s response was to focus on the resident’s care of the patient rather than on the broader set of factors that led to the “patient safety event.” Such an approach does little to improve patient care or expand the resident’s knowledge and reflects poorly on the institutional clinical environment. Additional information that the ACGME gleaned from that site visit revealed a learning environment in which faculty and staff generally lacked the ability to recognize instances of compromised patient safety, in which policies and mechanisms for reporting such problems were unclear, and in which there was no

process for analyzing such events and preventing them in the future. The hospital’s physicians and staff also failed to model approaches to the planning and implementing of systems-based action plans to improve care. This finding is disturbing in light of the ACGME’s expectation that trainees demonstrate competence in systems-based practice and practice-based learning and improvement and in light of the effects of the learning environment on future clinical outcomes.² The solution in the case described above required much more than a superficial admonition to “be more careful.”

The ACGME core competencies of systems-based practice and practice-based learning and improvement, as operationalized through specialty-based Milestones, require that residents demonstrate incorporation of patient-safety and quality-improvement skills into their daily activities.³ Failure to develop these competencies during training ensures that the skill gaps seen in current medical teaching faculties will be perpetuated in the physician workforce of the future — and represents a lost opportunity to create a cadre of young physicians equipped to lead sustainable systems-based improvement in clinical care. Early results from the CLER site visits suggest that many GME clinical learning environments do not provide the

necessary systems-based practice context for residents' clinical experience.

Until the CLER program began, the ACGME presumed that training programs were based in environments in which the competencies required in GME training were routinely applied in clinical care. The CLER program's experience to date suggests that this presumption was optimistic. The general quality of specialty-specific GME provided in ACGME-accredited programs appears to meet specialty-based accreditation standards. But these training programs commonly exist as silos within their clinical environments, giving residents limit-

ed exposure to other members of the care team as they learn about patient safety, quality of care, and the other focus areas of the CLER program.

Traditional didactic techniques designed to familiarize trainees with concepts and expectations regarding patient safety, quality, care transitions, fatigue management, supervision, and professionalism — the six areas evaluated by the CLER program — are necessary but not sufficient to ensure that trainees develop competence in these areas. An hour of orientation or an online education program — the most common edu-

catinal tools being used — may provide basic knowledge of patient-safety and quality-improvement functions but does not foster adequate development of the skills physicians require in order to solve problems in the clinical environment. Some programs report that they meet training needs through simulated team training and investigations of patient safety events. We believe that simulation should be viewed only as an intermediate step toward skill acquisition and observed application. Only consistent direct involvement in safety- and quality-improvement systems within the context of their delivery of patient care in the clinical learning environment

sure that the care provided in the clinical environment is both high quality and safe. Support for education in systems-based practice requires stewardship at the highest level of leadership within each teaching institution.

The CLER program is based entirely on sequential formative assessment of institutions. At each visit, institutional leaders are provided with face-to-face feedback on their program's effectiveness as a setting for learning the practice of medicine in the six focus areas. A CLER team will revisit each clinical site every 18 to 24 months to evaluate progress. The ACGME's expectation is that such feedback will lead to improvement. Over time, the aggregated knowledge from these visits will be used to refine expectations and possibly to modify the ACGME institutional accreditation standards.

On January 27, 2014, the ACGME introduced the first synthesis of expectations, the "CLER Pathways to Excellence" document.⁵ This document is based on the CLER program's experience in its first year, combined with a review of the published literature on this area of institutional competence. It will serve as a guide to GME teaching institutions, providing ways to improve training in the six areas evaluated by the CLER program, and help to create environments that support the development of competence. The Pathways document will be the basis of the CLER formative assessment process, and it will serve as the framework for providing periodic reports on national performance in GME programs on patient safety and quality improvement.

Through the CLER program

Only consistent direct involvement in safety- and quality-improvement systems within the context of their delivery of patient care in the clinical learning environment will provide trainees with the necessary experience to achieve competence.

will provide trainees with the necessary experience to achieve competence.⁴ Actions speak louder than words in GME; the "do as I say, not as I do" philosophy that is implicit in a poorly designed clinical delivery system is an inadequate response by the faculty and institutional leadership.

A superficial analysis might suggest that this problem could be solved by improved GME regulation. But the real challenge identified by the CLER program is that the leadership of our teaching institutions must be more engaged not only with GME programs but also in efforts to en-

and its related Pathways framework, the ACGME hopes to motivate the GME community and the leadership of U.S. teaching institutions to enter a national conversation. Our goal for this conversation is to advance clinical learning environments that meet the public's need for physicians who are prepared not only to deliver excellent technical and humanistic care but also to participate in or lead constructive change in the quality and safety of our delivery system throughout their careers.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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BECOMING A PHYSICIAN

Caring for William

Robert Jones, B.A.

Shaving William is something like performing surgery, and when the weather permits, the back porch becomes our operating room. Before each procedure, I drape him in standard fashion, with a nylon hairdresser's cape he scavenged from our neighbor's garage sale. Like any operation, the procedure itself is sequential and ritualistic. Pulling taut his wrinkles, we start with his neck and move upward, trimming even his ear hair and eyebrows.

As I unplug the clippers, William lifts his hands to his face, manually inspecting my work. Most sensible 67-year-olds would be grateful just to have a free barber, but William remains surprisingly critical. Every time, he finds a spot that I missed. Almost unexpectedly, the allure of "surgery" becomes its greatest downfall — despite the shakiness of human hands, the idea that perfection is possible.

My life is divided between two very different worlds: a hospital, where I'm a medical student, and a homeless shelter, where I live and work. But the boundaries often blur, and I sometimes catch myself thinking of William as one of my patients. I worry about his unexplained weight loss, his persistent cough and pack-year history, his talking to people who aren't really there.

But William won't let me listen to his heart or lungs with my stethoscope. He changes the subject when I bring up smoking cessation or suggest dietary modifications. And even now, when I remind him that I'll soon be a doctor, he furrows his brow and shakes his head dismissively. "Not on me, you won't," he always grumbles.

I graduated from college with a lot of ideas about poverty and privilege in America but little real experience. This idealism of mine

was earnest enough, but it was foolishly certain, detached from reality, and driven by guilt. More than anything, it was rooted in my reaction to a simple but frightening realization — that I'd become insular, judgmental, afraid of my own shadow. I needed something drastic to snap me out of my own small world. So when I was offered the chance to live and work at St. Francis House, a shelter for mentally ill men, I jumped at the opportunity.

As I began to experiment with facing my own fears, St. Francis House turned out to be the perfect Petri dish. I played card games with crack addicts. Former felons taught me how to change the oil in my car. And sitting down for dinner every night, I'd look around the table at a room full of people I had grown to care about but whom I might have previously avoided altogether.

William quickly became my