

## Invited Commentary

# A Modern Snapshot of the Daily Work of Medical Interns— The Burden of Indirect Patient Care

Christopher Moriates, MD; F. Parker Hudson, MD, MPH

**The daily work** of a medical trainee has changed. This much is as clear as it is predictable. During our residency training less than a decade ago, we heard stories about the “good old days” when residents would trek to the medical library to make pho-



Author Audio Interview



Related article

tocopies of articles to bring to rounds the next day to inform their clinical care. We were told about hunting for physical radiology films and collecting laboratory results on carbon paper printouts. Back then, a time-motion study following interns would almost certainly include much more time and motion in the hospital than it would today. Although these stories are suffused with the sepia tones of nostalgia, few would argue that these activities were better for medical care or education than instantaneously available up-to-date medical information, high-definition computerized films, and real-time laboratory results.

The major shifts in resident workflows during the past decades have been obvious to anybody in a teaching hospital. With the study by Chaiyachati et al<sup>1</sup> in this issue of *JAMA Internal Medicine*, we now have a clear quantitative snapshot of how modern medical trainees spend their days and nights. This rigorous time-motion substudy of the individualized Comparative Effectiveness of Models Optimizing Patient Safety and Resident Education (iCOMPARE) trial of internal medicine interns provides direct observation of work on general medicine wards. The researchers followed 80 interns across 194 shifts for 2173 hours at 6 US programs, which, as the authors highlighted, is “two and one-half times as many hours of intern time and 3 times as many programs as the next largest time-motion study in the United States.”<sup>1</sup> They found that most of interns’ time (66%) is spent in indirect patient care, mostly interacting with the patient’s medical record or documentation. As recently as the 1990s, medical interns spent about one-quarter of their working day face-to-face with patients.<sup>2</sup> Now, in a 24-hour period, 16 hours are dedicated to indirect patient care, whereas only 3 hours (13%) are spent in direct patient care and fewer than 2 hours (7%) are spent in education.<sup>1</sup> In addition, approximately one-quarter of all direct patient care and educational activities included multitasking with indirect patient care.

The finding that interns spend more time with computers and other tasks rather than directly interacting with patients is not new or surprising.<sup>3</sup> However, the strengths of this study include direct observation with full accounting of time down to the second across shifts during the day, evening, and night, which allows for a more nuanced description than prior studies. The insight into the amount of multitasking performed is particularly helpful. This study examined various set-

tings, including major academic and community-based programs, with presumably different electronic medical records (EMRs); yet, based on the small standard deviations, relatively little variation was noted.

Technological optimists may have previously predicted that the time freed up by the introduction of technology—such as no longer traveling long distances to collect information—would be redeployed to provide more direct patient care. Physicians would be able to replace clerical work with more face-to-face doctoring. In reality, the advent of new technology in the hospital seems to have resulted in residents spending more time interacting with a screen, a phenomenon that Verghese wryly termed treating the *iPatient*.<sup>4</sup> A decade ago, he warned: “Pedagogically, what is tragic about tending to the *iPatient* is that it can’t begin to compare with the joy, excitement, intellectual pleasure, pride, disappointment, and lessons in humility that trainees might experience by learning from the real patient’s body examined at the bedside. When residents don’t witness the bedside-sleuth aspect of our discipline—its underlying romance and passion—they may come to view internal medicine as a trade practiced before a computer screen.”<sup>4(p2749)</sup>

The present time-motion study shows that, like it or not, internal medicine is now indeed a trade practiced before a computer screen. Our initial instincts likely align with those of Verghese that this is a destructive development, although we should be more humble and objective with our approach to this advance. What Chaiyachati et al<sup>1</sup> termed *indirect patient care*—that is, entering orders, reviewing data, reading consultant notes, and organizing assessments and treatment plans into progress notes—still constitute vital patient care activities. Much like lamenting that news articles are increasingly read on screens rather than in large-format newsprint, the format of how this activity is performed is probably not as professionally significant as we may initially perceive.

However, many may wonder whether a direct association exists between the increasing time spent on underdeveloped, poorly optimized EMRs and the worsening problem of physician burnout. Medical training has always been emotionally demanding, but are the new strains of multitasking and increased screen time with the EMR sapping emotional reserves? Is the decreasing direct interaction between humans—residents and patients, physicians and nurses, primary teams and consultants—leading to a deficit in the humanistic bonds that create exceptional care and replenish our psyche? One of our interns recently reflected after a difficult family meeting, “This is why I went into medicine.” It was certainly not for the indirect patient care tasks, when recording care takes longer than providing it.

Medicine is still a discipline in which interpersonal skills are essential. In the study by Chaiyachati et al,<sup>1</sup> interns spent more than half the day communicating with others, including clinical team members (25%), nonteam members (14%), patients (11%), and families (2%).<sup>1</sup> Efforts such as that of the recently launched “Back to Bedside” initiative from the Accreditation Council for Graduate Medical Education (ACGME) are needed to reinforce these humanistic aspects of medicine, “to empower residents and fellows to develop transformative projects that foster meaning and joy in work and allow them to engage on a deeper level with what is at the heart of medicine: their patients.”<sup>5</sup>

One criticism of the study could be the choice of categorizations of different intern activities. Although 1.8 hours of education per 24-hour period appears alarmingly low, education should be considered more broadly, given the diverse demands for proficiency from the ACGME. Often opportunities to signpost this learning are missed, for trainees and especially for nonmedical observers collecting these data. For ex-

ample, 5 hours of rounding surely included learning clinical reasoning, building case scripts, and navigating health systems. Communication skills probably were also taught and role modeled during direct patient care and family meetings. How would reporting a safety event—an essential skill for a modern physician—be categorized? Was researching a clinical question on the computer or telephone captured as education? Despite these limitations, their categories are helpful to begin to understand and calculate distributions to the workday, which will be important for future studies in this area.

In his 2015 book, *The Digital Doctor*, Wachter wrote that “the human side of medicine will be nurtured in the digital era only if both patients and clinicians value it and demand it.”<sup>6</sup>(p275) Whether this modern snapshot of the daily lives of interns serves as a clarion call to reinvest in the humanistic aspects of medical training or simply becomes a marker on an inexorable evolution in what it means to be a physician is up to all of us and will ultimately reveal what we truly value.

#### ARTICLE INFORMATION

**Author Affiliations:** Department of Internal Medicine, Dell Medical School at The University of Texas at Austin.

**Corresponding Author:** Christopher Moriates, MD, Department of Internal Medicine, Dell Medical School at The University of Texas at Austin, 1501 Red River Dr, Health Learning Building, Room 2.323, Austin, TX 78712 (cmoriates@austin.utexas.edu).

**Published Online:** April 15, 2019.  
doi:10.1001/jamainternmed.2019.0092

**Conflict of Interest Disclosures:** Dr Hudson reported completing medical school and residency at the University of Pennsylvania, where the iCOMPARE study was coordinated, but has no ties to the study and has not been at the institution for

more than 5 years. No other disclosures were reported.

#### REFERENCES

1. Chaiyachati KH, Shea JA, Asch DA, et al. Assessment of inpatient time allocation among first-year internal medicine residents using time-motion observations [published online April 15, 2019]. *JAMA Intern Med*. doi:10.1001/jamainternmed.2019.0095
2. Guarisco S, Oddone E, Simel D. Time analysis of a general medicine service: results from a random work sampling study. *J Gen Intern Med*. 1994;9(5):272-277. doi:10.1007/BF02599655
3. Mamykina L, Vawdrey DK, Hripscak G. How do residents spend their shift time? a time and motion

study with a particular focus on the use of computers. *Acad Med*. 2016;91(6):827-832. doi:10.1097/ACM.0000000000001148

4. Verghese A. Culture shock: patient as icon, icon as patient. *N Engl J Med*. 2008;359(26):2748-2751. doi:10.1056/NEJMp0807461

5. Accreditation Council for Graduate Medical Education. Back to Bedside. <https://www.acgme.org/Residents-and-Fellows/Back-to-Bedside>. Accessed December 23, 2018.

6. Wachter R. *The Digital Doctor: Hope, Hype, and Harm at the Dawn of Medicine's Computer Age*. New York: McGraw-Hill Education; 2015.