

## NEW PERSPECTIVES

**iPod, iPad, iPhone: iPatient?**

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*Listen to the patient, he is telling you the diagnosis.*

—Sir William Osler, MD

**A**nd if you listen more, he will tell you the treatment. The art of history taking and physical examination is a vital and fundamental aspect of clinical care. Well-trained doctors depend predominantly on these clinical skills to make decisions and deliver optimal medical care. Educational programs in US medical schools and across the globe emphasize early initiation into clinical training, mostly in the second or third year of medical school, and require one year of mandatory rotating internship prior to specialty training. In 1998, a Clinical Skills Assessment section was added to the qualifying United States Medical Licensing Examinations to assess the ability of foreign medical graduates to gather and interpret clinical patient data and communicate effectively in English. This has since been replaced by the Step 2 Clinical Skills examination that uses standardized patients to test all examinees on their ability to collect pertinent medical information from patients, perform physical examinations, and communicate their findings to patients and colleagues.<sup>1</sup> The goal of this integrated clinical encounter is to ensure that appropriate emphasis is given to clinical sciences and basic patient-centered skills as the foundation for the safe and effective practice of medicine.<sup>1</sup>

In recent times, state-of-the-art electronic mobile devices have literally brought real-time medical information to the fingertips of health care providers. These handheld devices or “smartphones” are increasingly being used by medical professionals and have been shown

to be useful tools in the day-to-day practice of evidence-based medicine.<sup>2,3</sup> Traditionally, physicians as a group have been slow to adopt information technology, including electronic medical records.<sup>4</sup> However, when it comes to mobile devices there has been a significant increase in their use by physicians from 25% in 2004 to more than 50% in 2010.<sup>5</sup>

These devices are available at reasonable prices and have easy learning curves—both attractive features for resident physicians in training programs. There is little debate over the fact that portable computation improves point of care practice, medical decision making, effective clinical communication, cost, patient education, and overall coordination of care. However, the relevance and suitability of such devices in the training process of medical students and residents is questionable and may even negatively impact the problem-based learning format that has historically been an integral part of educational programs in the United States. “Bring your own device (BYOD)” is a business strategy in the technology world that is increasingly being used by companies to boost employee productivity, morale, and convenience by allowing them to use their own devices, perhaps at the risk of potentially compromising data security.<sup>6</sup> In health care, there is no such formal strategy, but the use of personal mobile devices at work is fast becoming an integral component of delivery of care and medical education.

In a recent study published in the *British Medical Journal* that examined the use of mobile devices in medical education by trainees and faculty, concern was expressed over the problems associated with their

widespread use, including superficial learning, inappropriate use, distraction in the classroom and during clinical care, access to ambiguous learning resources, and breach of privacy.<sup>7</sup> Participants also expressed concern over possible compromise of professional behavior due to the fact that almost always a single device is used for both personal and professional purposes without any specific guidelines about how to maintain boundaries. Moreover, the majority anticipated that these devices were going to become more integrated into daily practice and learning and might even replace textbooks.

My concern as a faculty member in an academic medical center is all of the above but predominantly the impact on the overall learning process for the trainees. There are several observations that I have made during my day-to-day work that I would like to share. Residents seem to spend less time with patients and more time in front of their electronic devices. They often place orders based on the documentation from other provider’s notes before completing their history and examination. This can compromise medical care. Poor physical examination skills are pervasive, and a certain indifference has developed toward learning these skills. Medical care in the United States has trended progressively toward using tests to guide diagnosis and treatment, and, consequently, trainees are misguided toward excessive dependence on easily accessible tests like X-rays, echocardiogram, CT scan, and MRI due to the widespread availability of mobile devices. The inclination to treat the test results and numbers

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from laboratory evaluations runs deep, thus inspiring the term “iPatient.” The difference between a good physician and a great physician, as Sir William Osler would have said, is that a good physician treats the disease whereas a great one treats the patient with the disease.

Confidence in diagnostic skills based only on history taking and physical examination has been significantly eroded. This can result in poor patient-physician relationships, lack of compassion and understanding of the psychosocial aspects of patient care, and a paucity of collaborative learning. Moreover, teachers seem to have increasingly lost interest in teaching the dying art of in-depth history taking and physical examination. The role of the educator is rapidly evolving into one of facilitator rather than disseminator, possibly compromising competency-based education. I am especially concerned about the use of mobile devices during morning rounds. Residents increasingly depend on their devices to present updates on their patients instead of knowing facts and being able to recall them on demand. This dependence cannot be construed as anything but harmful to long-term learning. Interruptions from their devices can be detrimental to overall care delivery, resulting in errors and incomplete tasks.<sup>8,9</sup>

Accessing medical information that is sound, evidence based, well organized, and easy to internalize can also be a problem. Instead of learning the old way by reading text books to formalize basic concepts of medicine, students and residents skim over easily available sources online on their devices and move on to the next thing on their agenda.<sup>7,10</sup> This is detrimental for retention of

knowledge and application into clinical practice. The information available on the Internet is vast and of varying quality. This can become a challenge for students and teachers both, as they struggle to understand how to effectively manage this. It has been recommended for years that medical schools and academic centers meet the challenges associated with technological advancement by developing clear strategies and guidelines that can enhance the quality of medical education.<sup>10</sup>

Sir William Osler (1849-1919), a pioneer of clinical medicine, insisted that his students learn from seeing and talking to his patients. He implemented the clinical clerkship for third- and fourth-year students and spearheaded bedside teaching rounds with them.<sup>11</sup> He said, “To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.” He also proclaimed that “the primary work of a professor of medicine in a medical school is in the wards, teaching his pupils how to deal with patients and their diseases.”

Alas, the science of this scholarly activity seems to be dying in this modern world of technology-savvy trainees. Educational programs in medical schools across the United States are working on initiating the introduction to clinical medicine earlier than before by providing better structure for teaching clinical skills. Universities and academic medical centers with resident training programs should enhance the continuum of clinical training by understanding the inroads made by technology into medical practice and education. Clear guidelines should be set for the use of mobile devices

within training programs to standardize instructional formats and avoid compromise of medical education and patient care. Mobile devices can be tremendous assets in current times, but barriers to optimal use must be recognized also.

I end with another quote from Sir Osler:

*I desire no other epitaph...than the statement that I taught medical students in the wards, as I regard this as by far the most useful and important work I have been called upon to do.*

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