

PROFESSION

Doctors have to manage smartphone distractions

As the use of mobile devices grows among physicians, so does concern about how to minimize interruptions that could endanger patients.

By KEVIN B. O'REILLY, amednews staff. Posted Jan. 2, 2012.

Physicians are accustomed to dealing with interruptions of all kinds -- nurses with questions, phone calls from the pharmacy, incoming test results. With recent surveys showing that more than 80% of doctors carry smartphones and about a third use iPads or other tablet computers, some doctors are raising concerns about the capacity of these always-with-you devices to cause new distractions that could hurt patients.

Evidence of harm caused by mobile technology is sparse, but as more doctors pick up smartphones and drop work-only pagers, the potential for personal distractions is rising. Physicians are interrupted nearly five times an hour by phone calls, emails and face-to-face interactions, said an Aug. 29, 2011, study in the *Journal of Medical Internet Research*.

Those distractions might worsen care. For example, nurses who are interrupted while preparing and administering medications are 12% likelier to make procedural or clinical mistakes, said an April 26, 2010, *Archives of Internal Medicine* study. Some health professionals are using their phones while delivering care. A 2010 survey of more than 400 perfusionists found that a majority used their cellphones during cardiopulmonary bypasses, with 21% of smartphone users checking their email, 15% using the Internet and 3% posting to social networking sites.

The challenge is that the flood of electronic data can interrupt a doctor's clinical train of thought, said John Halamka, MD, chief information officer at Beth Israel Deaconess Medical Center in Boston. "It even happens to me. I will drop a thread that I intended to get to purely because of the overwhelming volume of information," he said.

Surveys show that more physicians are relying on mobile devices for clinical uses such as: consulting drug, testing and treatment references; educating patients; accessing patient information; and communicating with colleagues. That makes shutting off the device while working a no-go for many doctors.

This combination of the personal device and the professional mission makes it easier for nonclinical messages to interrupt, said Peter J. Papadakos, MD, a professor of anesthesiology at the University of Rochester (N.Y.) School of Medicine and Dentistry. "Let's say your office is going to text or email you with information about your patient, Mr. Jones," Dr. Papadakos said. "What happens is you don't know what that message buzzing is -- you can't discriminate. The unpredictability makes it incredibly irresistible to keep checking your device."

The smartphone generation

The so-called digital natives who started texting in school and now practice medicine may have even greater trouble withstanding the urge to scratch the smartphone itch, experts said.

A case described in the December 2011 issue of the online patient safety journal *AHRQ WebM&M* highlights the concern. While rounding on a 56-year-old man hospitalized to have his percutaneous endoscopic gastrostomy tube replaced, the attending physician at an unidentified academic medical center said the patient's Warfarin should be stopped.

A resident rounding with the attending physician started entering the drug stop order using her smartphone, which could access the hospital's computerized physician order entry system. She was interrupted by an incoming text message from a friend asking about an upcoming party. The resident answered the text message -- yes, she would attend the party -- but forgot to complete the stop order.

The patient continued receiving Warfarin and two days later developed shortness of breath, a rapid heart rate and low blood pressure. He ultimately required open-heart surgery to remove blood that was filling the sac around his heart. The spontaneous bleeding, the medical team believed, was due to the extra doses of Warfarin the patient got because the drug order was not stopped.

"The very nature of the brain of the current generation of medical students and residents is that they think differently from those of us who are 50. They are at higher risk of being interrupted, of engaging in multitasking," said Dr. Halamka, who wrote the *AHRQ WebM&M* case study. "Cognitive psychologists have said that no matter how well-trained we are, it is still far better to complete a task than to try to engage in parallel tasks."

The effect of mobile technology on the quality of care deserves more attention, Dr. Papadakos said.

"No one has ever addressed how we teach human-to-technology interfacing. That's the core of the problem," he said.

"At the University of Rochester ... we are trying to teach our young doctors and fellows and nurses to balance the technological bombardment they are getting. This is a very, very important thing that we need to start teaching at all levels in the

health professions schools."

Dr. Papadakos said the University of Rochester Medical Center opted to keep its pager system rather than switching to a cellphone-only method of communication to cut down on distractions. "When the beeper goes off, we know it's a Level II trauma alert or something like that," he said. "It's not a message saying that Kmart is having a post-Christmas sale."

While concerns about mobile-tech distractions are increasing, some physicians argue that smartphones and tablet devices enable them to work more efficiently.

For example, taking a moment between patient visits to read a text message from a family member can be less distracting and time-consuming than returning the relative's phone message.

It is the very nature of medical practice for physicians to manage competing demands for their attention, said Henry J. Feldman, MD, a hospitalist at Beth Israel Deaconess Medical Center and chief information architect in the hospital's Division of Clinical Informatics.

"Getting distracted is not a feature of technology but a feature of the fact that people don't multitask particularly well," said Dr. Feldman, who uses an iPad at bedside to make notes and order medications and tests. "I used to be a primary care doctor, where I had a nurse popping her head into the office every three minutes to tell me something. The constant bombardment of distractions -- that's what being a doctor is. If you can't safely manage that, then you should do something else with your life."

Mobile-health experts said physicians should fine-tune their devices' smartphone notification settings to prioritize clinical matters. Meanwhile, some health care organizations are considering policies to restrict access to social networking sites and personal email sites.

Physicians should use common sense and set a good example for medical students and residents, said Neil Mehta, MD, director of education technology at Cleveland Clinic Lerner College of Medicine of Case Western Reserve University.

"Turn off notifications generated by email and other personal-use apps," said Dr. Mehta, an internist at Cleveland Clinic. "Doctors need to find the right balance for using these devices while putting the patients' interests first."

ADDITIONAL INFORMATION:

Dialing down smartphone distractions

The growing use of mobile devices gives doctors quick access to reference materials. Yet personal messages can interrupt workflow and distract from care. Experts advise physicians to consider these fixes:

- Implement security protections for mobile devices that enable work-related and consumer functions to be isolated from each other.
- Allow only employer-supplied mobile devices to be used in patient care.
- Build reminders into computerized order entry systems.
- Implement rules or guidelines for optimal safe use of mobile devices.
- Ensure that routine personal interruptions do not affect the delivery of quality care by silencing or minimizing nonclinical communications.

Source: "Order Interrupted by Text: Multitasking Mishap," *AHRQ WebM&M*, December 2011

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"An evaluation of the use of smartphones to communicate between clinicians: a mixed-methods study," *Journal of Medical Internet Research*, Aug. 29, 2011 (www.ncbi.nlm.nih.gov/pubmed/21875849)

"Association of Interruptions With an Increased Risk and Severity of Medication Administration Errors," *Archives of Internal Medicine*, April 26, 2010 (archinte.ama-assn.org/cgi/content/abstract/170/8/683)

"2010 Survey on cell phone use while performing cardiopulmonary bypass," *Perfusion*, September 2011 (www.ncbi.nlm.nih.gov/pubmed/21593081)

"Order Interrupted by Text: Multitasking Mishap," *AHRQ WebM&M*, December 2011 (webmm.ahrq.gov/case.aspx?caseID=257)

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