Is Flood Of Medical Alerts Harming Patients?

Alarms from increasingly sensitive health IT could be desensitizing clinicians to signs of patient danger.

By Marianne Kolbasuk McGee, InformationWeek
April 25, 2011

If you've spent any time in a hospital, you know how noisy it can be, with all sorts of beeping and buzzing from monitors and computers signaling potential danger. Couple these alerts with text messages and flashing alerts from electronic health records (EHRs), computerized physician order entry (CPOE) systems, and programs to remind nurses and doctors to check patients' IDs, drug orders, lab results, etc., and you're faced with a huge wall of white noise.

The problem is likely to get even more disruptive as clinicians increasingly deploy telehealth applications to help monitor chronically ill patients at home for signs of trouble.

The surround sound of alerts and alarms emitting from dozens of devices hooked onto dozens of patients each day is causing many clinicians to ignore the alerts, even shutting them off without adequately investigating whether an issue is life threatening or just another false alarm.

Unfortunately, this alarm fatigue has lead to several patient deaths. The Boston Globe in recent months has followed the issue, especially as it relates to 15 recent tragic deaths of patients in New England hospitals.

Among those fatal cases, clinicians failed to respond to a heart monitoring alert that sounded for more than an hour to warn of a low battery. The patient's heart failed, but by that time, so did the monitor battery, and no emergency alarm sounded to alert clinicians of the medical crisis.

Getting The FDA Involved

The attention on these New England cases, along with more than 200 other suspected alarm fatigue-related incidents in other U.S. hospitals, has prompted the Joint Commission, the independent national organization that accredits U.S. hospitals, to renew its focus on the issue.

The commission is bringing its concerns about alarm fatigue to the Food and Drug Administration. "We've had contact with the FDA to meet around the issues," said Dr. Paul Schyve, senior VP of healthcare improvement at the Joint Commission in an interview.

Schyve hopes that the combined influence of both groups can help persuade healthcare professionals and medical device makers to address the problem with better work habits and
improved products and standards, especially since the Commission accredits healthcare organizations and the FDA approves medical devices.

And address this issue they must. Research shows that the alerts are getting out of control.

A new study, "Understanding the Management of Electronic Test Result Notifications in the Outpatient Setting" published April 12 in *BMC Medical Informatics and Decision Making*, found that among the biggest problems reported by clinicians who use EHRs is the inordinate number of alerts, which can be as high as 150 in one day.

As for the type of alarm fatigue related to medical devices, that issue had been on a short list of Joint Commission patient safety goals for hospitals a few years ago, Schyce said. "But the problem seemed like it was being mitigated by hospitals, so we decided alarm fatigue didn't need the spotlight as much as other patient safety issues," he said. The Joint Commission doesn't track statistics on alarm fatigue cases. However, with the number and frequency of alarm fatigue incidents appearing to be growing over the last year or so, the organization decided to refocus on the issue.

"It's time to relook at this. It appears that underlying issues haven't been solved," such as clinicians turning off alerts, said Schyve.

Meanwhile, "increasing sophistication and sensitivity of equipment that have more alerts, and more alarms" is likely contributing to clinicians' desensitization of the warnings, he said.

"Manufacturers are trying to make their products safer by adding alarms" but the impact may be negative. "Did an alarm go off because of a dangerous change in heartbeat or because the patient moved?" said Schyve. These are the kinds of questions healthcare workers have to investigate many times daily. But, "when people have had a number of these false positives, they begin to ignore the alarms. Our brains tune out something that keeps occurring," he said.

"If every manufacturer puts an alert in their systems for the same thing, but it sounds different, that doesn't help," he said. "There needs to be some standardization of alarms that make them easier to interpret, not just create a cacophony of sounds," he said.

The Joint Commission hopes that by teaming up with the FDA, together they can help shepherd change in behavior among clinicians, and push for more standardization and improvements in alerts from device makers, Schyve said.

**Vendors Take The lead**

Some EHR vendors are already working on the issue of alarm fatigue. Philips Healthcare, for instance, recently announced the customizable [IntelliSpace Event Management](https://wwwPhilips.com) system, which gathers clinical data from multiple medical monitoring devices, EHRs, and other systems, and allows alerts to be automatically prioritized and routed as a text messages to the most appropriate clinician, on their preferred mobile device.
While the system doesn't stop noisy alarms from going off on equipment in patient rooms, it could help draw attention to specific alerts from the clinicians responsible for acting on the issues.

"If it's a code blue, the alert will go to a specific group of people," but if it's a less urgent matter, like a patient hitting a call button to request some water, the message will go to someone else, said Philips Healthcare product manager Barbara Sullivan in an interview.

Meanwhile, perhaps more vendors need to recognize that their increasingly sophisticated and "smart" health IT products and medical devices might aim to improve patient care, but too many bells and whistles could be counterproductive to reaching those goals.

"Technology solutions try to catch and prevent mistakes with alerts," said Schyve. However, "we may be entering a new era of being overwhelmed."

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