Beware Clinical Decision Support – But You May Already Have To Use It

Hospitals looking at clinical decision support systems should be aware of the two-edged sword such systems could turn into if they're not thoughtfully implemented. Both edges are pretty sharp.

That's the conclusion of Eta S. Berner, a professor of healthcare informatics at the University of Alabama at Birmingham and author of a sobering article in the fall Healthcare Information and Management Systems Society Journal. If you haven't seen it, the gist is that:

- Hospitals could be liable if their clinicians make decisions based on a decision-support system that has faulty or incomplete rules, and they could be held responsible for those rules even if the vendor programmed them; and
- Decision-support systems are getting to be just common enough to begin to constitute a standard of care, and hospitals might be liable for not having one if its absence is deemed to have harmed a patient, or if a doctor overrides the system without a good reason.

A pretty dilemma indeed, especially with groups like Leapfrog pushing a combination of computerized physician order entry (CPOE) and CDS as a key to reducing medical errors. We caught up with Prof. Berner recently and quizzed her further about the issues raised in her article.

"Sez who?"

It's essential to know whose expert rules are programmed into your CDS system, and what qualifies the source as an expert.

Prof. Berner recalls getting a demo for an online assistant for emergency departments dealing with bioterrorism incidents. The user was supposed to enter the data and have the system make a diagnosis, which might be very useful for identifying exotic diseases that EDs don't see very often otherwise.

She asked the principals of the company, both physicians, "What's the source of your knowledge?" They just looked at her blankly. It turns out that they had programmed the system based solely on their own experience.

Oh.

She says a lot of vendors rely on a single clinician who happens to be interested in computers and knows how to program the rules. "It can look fine, but it may not be accurate. It's not like they're horribly dangerous, but it is a case of buyer beware."

A better idea is to rely on a recognized data source, preferably one that's updated regularly. That strategy works particularly well for drug interactions, where there are nationally known vendors like First DataBank and Medi-Span.

But when it comes to diagnosis and treatment protocols, the expert sources aren't so well established. You might be able to find guidelines for some conditions from places like the federal Agency for Healthcare Research and Quality, but Prof. Berner says they generally haven't been designed with computers in mind, and someone has to program them into a system.

A vendor may provide some rules created by beta testers or other users, but the odds are that they won't cover everything, and they may not jibe with what your medical staff does. For example, a lab system may flag certain values as abnormal that your staff considers borderline – or vice versa. If a system consistently gives warnings and recommendations that your staff learns to ignore as invalid, that could be worse than not having CDS capabilities at all.

Making Your Own Rules

Or the vendor may just provide the structure for you to program in your own rules, putting your medical staff's expertise on the line and saddling someone (or a committee) with the tedious task of codifying them, programming them, and checking to see whether they pop up at all the right moments.

It's not impossible; the most venerable and

widely respected clinical decision support systems are all home-grown, from places like Regenstrief Institute in Indianapolis, Brigham and Women's Hospital in Boston, and LDS Hospital in Salt Lake City. But they took years, even decades, to develop their systems.

LDS used a clever strategy to refine its expert rules, Prof. Berner says. Clinicians were allowed to override the system only if they provided an explanation. The hospital used those explanations to tweak the system and refine it to reflect the staff's collective opinion.

A Radio For Your Tugboat

How soon will a CDS system become the standard of care, without which your hospital can be found negligent in a malpractice suit? Sooner than you think – maybe even now.

Even if none of the hospitals in your area use the technology, it may not matter if a plaintiff can establish that such a system could have averted whatever unfortunate incident led to the malpractice suit.

Prof. Berner emphasizes that she's not a lawyer, but she cites the famous "Hooper" decision. Back in the 1930s, two tugboats, the T.J. Hooper and its sister vessel, were pulling barges loaded with cargo when a storm came and capsized them.

The cargo was lost and the barge owners sued the tugboat company. They won, even though the tugboat captains had performed their jobs expertly. Why? The tugboats didn't have radios that could have warned them of the storm; otherwise, they could have kept the barges in a safe spot until the danger had passed.

The court bought the argument, even though radios were by no means standard equipment on tugboats at the time. That case is often cited to show how the definition of standard practice can be changed by a technology even before it has fully arrived. (The same sort of court decision hastened the installation of radar for commercial airlines.)

Prof. Berner knows of at least one case in which a pharmacy system didn't include a drug interaction database and a patient suffered a reaction as a result. At trial, an expert witness invoked the Hooper decision to assert that a decision support system should have been in place, but the case was settled, so we'll never know whether the argument would have won the day. Prof. Berner thinks it's only a matter of time before it does, though. e

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