It's Leaving Here Just Fine

An interface programmer expert gets drafted and shipped off to basic training. While at the rifle range, the programmer is given a rifle and some ammunition. Said programmer then sends three shots downrange and is informed that nothing hit the target. Puzzled, our hero takes out the magazine, checks the chamber, cycles the action and reloads. Three more shots are fired off and the same message comes from downrange — no hits on target.

Now the programmer finds this very perplexing. After all, he followed all the right steps in the procedure manual. Determined to get to the bottom of the problem, he puts his finger over the barrel and lets loose a round. The tip of his finger is taken off in a spray of red mist.

Satisfied, he then yells down to the sighting bunkers, "It's leaving here just fine. The problem must be on your end!"

This joke always elicits a good laugh from people experienced in the business of interfacing applications from different vendors. An interface that doesn't work properly always results in finger pointing to ascertain which involved vendors are at fault. My reason for including this joke at the start of this first editorial in ElectronicHealthcare.com is that it has a broader message for a much wider audience.

One of the most common questions I am asked is how to get physicians to use clinical information systems. Many are frustrated with the seeming intransigence of physicians and their reluctance to use clinical information systems in their day-to-day practice. Many have argued that physicians and nurses are slow adopters of new technology and are at least in part responsible for the slow introduction of automated systems to clinical settings.

I would like to offer a very different hypothesis. It can be argued that clinicians' reluctance to adopt clinical information systems is a good and rational thing because we have yet to offer them anything of significant clinical value. Indeed the evidence shows that clinicians are enthusiastic adopters of new technology even when it results in major change in their clinical practice and necessitates large investments of additional time in order to acquire new skills. They are motivated to make these practice changes by the opportunity to improve quality-of-care for their patients.

An excellent example of a new technology that was quickly embraced by physicians is axial tomography. This technology came into mainstream use in the early 1980s first as CT scans then later as MR scanning. I can remember the first time I looked at a CT image. It required interpretation of cross sections of the human anatomy, which were not part of the curriculum when I was in medical school. Understanding how organs related to each other in cross-sectional profile was difficult and confusing. Nevertheless, the power of the technology was intriguing and sent me and tens of thousands of other physicians back to the books to learn anatomy in an entirely new way. As the power of this technology became obvious, doctors became active advocates for increased spending on these new technologies. Many clinical procedures such as pneumoencephalograms and myelograms were rendered obsolete by the new technology. Although very lucrative for the physicians, these painful and complication-prone procedures were abandoned in favour of the new approach. Clinical practice was dramatically changed for the better.

Another new technology that dramatically changed clinical practice was endoscopic surgery, which came into common practice around the same time. This too required a

significant investment in new technology and significant retraining of surgeons. Although this new approach substantially shortened the length of stay, the time for each operative procedure was significantly longer than more conventional methods. Although these new procedures were difficult to learn and required significant unremunerated time from physicians to implement, the advantages to patients and the improved quality of clinical care outweighed those considerations.

Imagine a similar scenario for the electronic patient record (EPR). A scenario where physicians are willing to invest significant amounts of their time to learn a new technology. A scenario where physicians become the vociferous advocates for increased spending on these new technologies. A situation where in a five to ten years period, physicians massively adopt the new technology as a standard of practice. To those of us who have worked in the clinical information systems business for the past couple of decades, this sounds like a utopian world. The question is: "How do we get physicians to embrace the EPR in the same way they embraced axial tomography and endoscopic surgery?"

The answer is to give them something that would make a meaningful difference to patient care. Thus far, we have failed to do so. Duplicating paper processes in software offers no benefit to patients. We can thank the clinician user community for preventing us from spending massively on technologies of dubious benefit. Indeed the user community is forcing those of us in the clinical informatics industry into a level of discipline by requiring us to pass a simple test of utility. All we have to do is design a system that clearly improves patient care.

Spending on health care information systems is accelerating across the Canadian healthcare landscape. As new players come on to the health informatics stage, we are in danger of making many of the same mistakes that others have made over the past twenty five years of efforts to automate the clinical setting. I am alarmed by large projects whose goal is to automate the patient record rather than achieving meaningful improvements in the delivery of clinical care. We must establish goals for our informatics projects in terms that the clinical user community will embrace. The goals of system projects expressed in clinical terms would include things like: reducing waiting lists, reducing medical errors, increasing life expectancy, increasing the number of patients a care provider can treat. Outcomes of system projects such as automating the clinical record, getting information to those who need it when they need it and where they need it, building a data warehouse, and improving the availability of the management information, are intermediate goals at best and of dubious clinical benefit. Unless expressed in clinical terms, these objectives will continue to fail to ignite the imaginations of mainstream clinical practitioners.

Very few organizations across Canada have succeeded in making clinical systems relevant to clinical professionals. Those that have are leading the way for the rest of us. The only way to ensure that our systems projects are "on target" is to make them clinically relevant. For each project, we have to ask key clinical questions. "How will this system change clinical practice?" "How will this change the patient's experience and how will we measure that expected changes have occurred once the system is implemented?" If these questions can be answered for each project, the issue of how to get clinicians engaged becomes moot. It is time meet the challenge of clinical relevance, and stop saying to clinicians that "It's leaving here just fine. The problem must be on your end."

Michael Guerriere, Editor-in-Chief
editor@longwoods.com

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