

## The Pathology of IT Investments

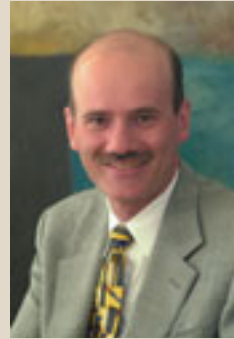
A PSYCHIATRIST, AN INTERNIST, A SURGEON AND A PATHOLOGIST go duck hunting together. Huddled in a duck blind, they agree that the internist will take the first shot.

A few minutes later, a pair of ducks flies overhead. The internist jumps up, cocks his gun and hesitates, muttering "They look like ducks, but I'm not sure they're ducks." By this time, the ducks are out of range. The other physicians deride their colleague for being too cautious, and agree that the psychiatrist will go next.

Another group of birds flies into range, and the psychiatrist jumps up, ready to take a shot. However, rather than firing, he asks, "They are certainly ducks, but do they know that they're ducks?" Once again, the ducks escape without a shot being fired.

The surgeon expresses his disgust at the inaction of his colleagues. Soon after, an entire flock of birds flies overhead. The surgeon leaps to his feet and blasts away with abandon, birds and feathers falling all around them.

The surgeon returns triumphant to the duck blind, elbows the pathologist, and says, "Go check to see if they were ducks!"



The duck hunting story always strikes a chord with clinical audiences because it captures the behavior stereotypes of the medical specialties so well. It also highlights a more subtle reality of clinical practice: that the health system depends on the decision-making ability of individual clinical practitioners to a very high degree. The quality of the care delivery system is subject to the fallibility of individuals making decisions based on their best judgment. These decisions are subject to bias and misconception because no unaided human can possibly factor in all the clinical knowledge that is available at the moment a clinical decision is made. This results in suboptimal decisions in the clinical setting with the potential to have significant detrimental impact on patients.

Although this has been hypothesized for some time, only recently have efforts been undertaken to quantify the impact of clinical errors on patients. The Institute of Medicine study *To Err is Human* has had an enormous impact because it quantified the number of deaths caused annually by clinical errors in the United States. The industry response has been both swift and substantial. Payers in the United States (both employers and governments) have moved to change policies governing their relationships with provider organizations to improve the quality of clinical decision-making. These have centred on the need for improved information management to support the care delivery process.

Isolated studies suggest that physicians

assisted by electronic order management systems are less prone to error. Systems that provide clinical decision support aid the physician by providing timely information about the patient's clinical history, and diagnostic and therapeutic options. Furthermore, the clinical databases that result from the use of these systems will permit better error surveillance and improved ability to refine clinical process to prevent future errors.

These same concepts are gaining acceptance in Canada. CIHI is in the midst of a study to quantify the impact of clinical errors on patients in this country. The results of this work should be available by the end of the year. Recent work by ICES and CIHI examined the relationship between clinical volumes and quality of care. These and other studies suggest that concentration of complex clinical procedures in regional centres will likely lead to improved outcomes. Also, Canada Health Infoway (Infoway) is beginning its efforts to accelerate the implementation of clinical information systems. All of these initiatives show promise for improving the quality of care delivery across Canada.

Interestingly, awareness of the potential of clinical systems to improve care quality results from a thorough analysis of available clinical databases. This highlights the difficulty inherent in building a business case for investments in health information infrastructure. Until the information system is in place and actively used, it is often difficult to quantify its poten-

tial impact on care delivery. Measuring clinical relevance was a challenge in the past because clinical databases were not available. Fortunately, as our systems improve, the evidence is mounting that good information management leads to better care.

In this regard, Infoway has chosen as its first initiative the development of a registry of clinical information systems. This registry will be updated regularly to maintain its relevance as a measure of progress toward electronic health records in regions across Canada. Unlike past surveys, the registry initiative begins to gauge the clinical utility of each system. Measures

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In measuring these parameters, Infoway is raising the bar for clinical systems projects. Implementation of a system into production is merely the first milestone on a long journey to redefine clinical processes through improved

information management. It is not sufficient only to know that a system is in place. The real measure of success lies in knowing to what degree the system has been used to improve the care delivery process.

What are the measures of success in achieving clinical impact? What is the full potential of IT in the clinical setting? Unfortunately, the answers to these questions will not be known until we see a full EHR in operation. In the meantime, as the health industry learns how to use IT to advantage, diligent efforts must be made to measure the clinical impact of each IT investment. Early measures, such as the ones Infoway has defined, are necessarily crude. The basic assumption underlying the measures chosen is that use of a system by a clinical professional can be used as a proxy to infer clinical utility. If a system were not clinically useful, the clinician would not bother spending the time to use it. With continuing work on report cards and comparative performance analysis, there is little doubt that better measures of clinical impact will emerge. In the meantime, Infoway is developing a first, comprehensive look at how extensively clinicians use clinical information systems across Canada.

The fact that Infoway has chosen to begin its mandate by raising the standard for evaluating the utility of clinical systems bodes well for future investments to accelerate EHR development. IT resources have to be deployed skillfully to achieve their full potential to improve care. The last thing we want to be doing five years from now is asking a pathologist if our IT investments were on target.

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