

The Pied Piper of Clinical IT

By Barry P. Chaiken, M.D., FHIMSS

There's ample evidence clinical IT can improve care, but without careful planning, it's just another source of danger.



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When executives at a hospital located in a competitive Northeast market discovered that their medication error rates were eight times higher than expected, they decided to purchase a computerized physician order entry (CPOE) system. They assumed that this tool, with embedded clinical guidelines and medication decision support, would help their physicians and staff choose the correct drugs and dosages for patients. However, hospital leadership didn't do enough homework prior to implementing the system to ensure its effective deployment.

Although the IT rollout went smoothly, the clinical rollout caused significant problems, leading to longer lengths of stay and elongated periods of morbidity. Instead of receiving a minimum therapeutic dosage for several medications prescribed through CPOE's drug dosing screens, patients received subtherapeutic doses. In one case, the prescribed drug's therapeutic single dose ranged from 20 milligrams to 30 milligrams. But in an effort to efficiently supply these doses, the pharmacy stocked the drug in 10 milligram tablets. And because the pharmacy department led the design of the CPOE drug dosing screens, the system only presented 10 milligram tablets.

Tasked with prescribing a minimum therapeutic dose and not familiar with the drug, physicians chose the 10 milligram tablet because they didn't know the drug entry screen represented pharmacy inventory information rather than clinical decision support information. In short, a poorly planned effort to reduce medication errors through the use of IT instead reduced patient safety.

The above scenario represents a troubling new trend in clinical information technology. Seen as the solution to the challenges of rising costs and the need to improve quality and patient safety, increasing numbers of organizations invest tens of millions of dollars in clinical IT systems including CPOE, electronic medical records, clinician portals, wireless networks and medication administration systems. But as hospital leaders around the country discuss their plans, there is a lack of focus on outcomes. There is little talk of data collection to measure clinical effectiveness, medical errors and financial impact. In short, they're planning to adopt these systems without fully understanding their use and impact. It is as if the irresistible song of the clinical IT pied piper is leading health care leadership to abandon common sense.

Heed the Warnings

The most recent Leapfrog Group Hospital Quality and Safety Survey says only 4 percent of hospitals currently have fully implemented CPOE. In the same survey, another 16 percent planned to implement CPOE by the end of 2006. When purchased from mainstream vendors, these systems cost millions of dollars in even midsize community hospitals. Millions more dollars are spent on training and maintenance.

This is not the first time health care has invested in IT that failed to live up to its promise. Medical appropriateness software programs were developed as a tool to prevent unnecessary procedures and testing. Although these programs were deployed in many payer organizations, there was little reduction in utilization, while the organizations' labor costs increased. At the same time, patients and their physicians were inconvenienced. Although these systems required major input from physicians and the reviewers who used them, few procedures or tests were curtailed in the end. Today, these systems have fallen out of favor along with the use of utilization review to control costs. One thing is true about clinical IT: Every institution and every problem is unique and therefore requires a unique, carefully planned clinical IT solution.

Although the highly publicized failed implementation of CPOE at Cedars-Sinai, Los Angeles, occurred more than two years ago, the hospital has not attempted to reintroduce it to the medical staff. In addition, the recent article, "Role of Computerized Physician Order Entry Systems in Facilitating Medication Errors," by Koppel et al. in the March 2005 *Journal of the American Medical Association* reveals some of the problems that could arise if the implementation of a CPOE system is not carefully planned with user workflows, clinical content and outcomes in mind. Yet with all of these cautions and evidence of potential danger, the clinical IT investment bandwagon keeps rolling along as if there is no doubt the endpoints will be positive.

Look Before You Leap

Those planning clinical IT investments should stop making investments for the sake of making them and let their strategic business drivers, such as improved reporting of laboratory results or increased efficiencies in operating room scheduling, identify the right technologies in which to invest. Then, identify data points, milestones and outcomes--for example, physician office calls to the laboratory to obtain results or operating room utilization--that are directly linked to an organization's strategic goals, and let the technology enable the organization to meet those goals. This way, it will become clear which technologies to invest in, in what order and how quickly. In addition, the data will be available for analysis to allow an objective assessment of the benefits afforded by the new technology and its assistance with reaching those strategic goals.

Clinical IT requires careful planning, not just for the implementation, but beforehand in imagining its use and impact. In fact, choosing the system is the least important part of the process. There's no institution that removed a state-of-the-art clinical IT system for lack of functionality and replaced it with a competitive system. Failed clinical IT originates in the vision that drove the purchase in the first place.

Hospitals planning to purchase clinical IT tools must stop following that piper. Identify the vision, identify the metrics, and then, and only then, find those vendors to help you get the job done.

Barry P. Chaiken, M.D., MPH, is associate chief medical officer at BearingPoint in Boston.

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