Delay of Game
If Healthcare IT Is So Great, Why Is It Taking So Long to Adopt?

WHEN I STARTED WORKING in the information services department of a large metropolitan hospital in the mid-1980s, my job was to assist in the installation of computer applications for our nursing units. One of my first projects was computer-based order entry for health unit coordinators and nurses. The job was simple and the benefits clear: replace paper requisitions, eliminate the manual transfer of the requisition to the ancillary departments and get rid of manual charge entry in the patient accounting system. We did this with a mainframe-based, homegrown computer system that automated order entry, printed the order in the ancillary departments and transferred the charge for the order into the patient accounting system. There was no confusion about what the application did and what its benefits were—it reduced errors, improved throughput time for orders and virtually eliminated lost charges. Everyone agreed that the computer-based system was better than the manual system.

A recent string of postings on an online discussion group on the topic “Explaining why health IT adoption takes so long” got me comparing those earlier days to today. What changed over the past 20 years? When did we move to this new level of clinical IT use—one that now touches almost every aspect of the nurse’s workday and needs defined integration into the nursing workflow? How did we move from simple system installation to complex system implementation and concerns about system utilization? Exactly when did we start talking about system adoption and enabling care transformation through IT? Most importantly, why is it taking so long to get widespread penetration of IT in nursing? My thoughts went to four different areas.

THE JOURNEY
It is interesting that the types of systems we are implementing today in nursing are more complex than what we had 20 years ago and are still maturing. Though there are some landmark examples of homegrown systems achieving benefits for patients and physicians in large healthcare organizations, such as Regenstrief, Vanderbilt, Stanford and Columbia, there are dramatically fewer examples in nursing.

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THE ADOPTION
Healthcare IT adoption has often been contrasted with IT adoption in other industries. The perception is that the healthcare industry lags behind other industries, such as banking or airline reservations, in the implementation of IT. But when you look at the issue of complexity, the comparisons begin to break down. For example, banking ATM transaction standards define 128 variables for ATM functions, while the Unified Medical Language System (UMLS) Metathesaurus has over 6.7 million names mapped to over 1.3 million concepts for healthcare functions.

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We have, for the most part, been reliant on software developed by the healthcare IT vendors, and rich nursing feature/function has often been difficult to define and slow to develop. In addition, our need for mobility requires development of sophisticated wireless infrastructures, which has also been slow in achieving the industrial-grade coverage required. Reasonable mobile hardware options, such as carts, tablets, and handhelds, have also been slow to evolve.

These three components—software, hardware and mobility—though complex in their interaction with each other, need to integrate to “technology-enable” the nurse and help redesign the complex workflows that make up a nurses’ shift. We need to remember that it is a journey; constantly building on what we have and designing future phases, with product development and system implementation leap-frogging each other along the way.
and application of knowledge and expertise, all under high stakes and often time critical conditions.

These complex nursing processes are also variable by individual, by unit and by organization, so the challenge further involves either standardizing processes or accommodating the variability at the same time as automating. Adoption will be enhanced if the nurses understand (and believe in) the benefits the system and redesigned workflow will provide.

**THE BUSINESS CASE**

Literature touts the abilities of electronic medical records, computerized documentation, clinical decision support and barcode medication administration systems to improve the safety, quality and efficiency of patient care. But widespread adoption still isn’t happening, and when it is, experiences are mixed. For this reason, it is important to pick the healthcare IT projects based on their value to the organization to ensure buy-in—specifically, cost and quality impact. Identify specifically how the project can maximize organization efficiency by streamlining operations, enhancing productivity or lowering operating costs (i.e., the business case). Identify how the healthcare IT can hardwire the provision of high-quality care by reducing errors, promoting the practice of evidence-based care or minimizing adverse events.

Often we don’t spend enough time identifying the project sponsorship/ownership by the business (i.e., who really owns the success of the project), understanding the strategic alignment of the project (i.e., how does it fit in with the strategic goals) and clearly articulating the benefit and business case for the project (i.e., what is the verifiable value proposition). We do not always keep eternal vigilance to the business case throughout the implementation process and ferret out any inefficient and possibly unsafe work-arounds. We forget that implementation is not an end state, but a means to an end, so staying involved after the implementation to ensure benefit realization and value extraction, and then making sure to mine the benefits and share the results with the business sponsors and the users.

**THE FINANCIAL BURDEN**

Healthcare typically has a bigger appetite for IT spending than they have a budget for. IT spending for most hospitals and health systems is at about 2 percent of revenue. Again, many other industries have a much higher spend. Using banking as an example again, they spend about 8 percent of revenue on IT. Since total healthcare spending is nearing $2 trillion, matching the 8 percent spend of banking would mean investing an additional $120 billion per year in healthcare IT.

Maybe the budget will eventually go up to these kinds of spending levels, but in the meantime, we constantly have to prioritize our nursing projects and limit them to what we can afford. This is further complicated by the fact that after we implement a nursing system, there is a good amount of support required to keep the system running and maintain the benefit gain, so if our spending levels and staffing are flat, there is less time available each year for new projects as more time is being absorbed by support.

The 17th Annual HIMSS Leadership Survey (2006) reports only 24 percent of hospitals/health systems with fully operational electronic medical record (EMR) systems; 36 percent in process; and the remaining 40 percent in some planning phase. HIMSS Analytics™ has a seven-stage ranking of EMR functionality penetration, and reports that only 12 percent of hospitals/health systems with stage three or above functions, which include clinical documentation, clinical decision support and barcode medication administration. These statistics parallel what we are seeing with nursing systems. For many reasons, it has been a slow and arduous journey. So, I think I have some preliminary answers to my question regarding why health IT adoption takes so long, but I can’t help thinking that it should be faster or at least easier.

I will close by quoting Rear Admiral Grace Hopper, a programmer on the first US computer in 1943, “Humans are allergic to change. They love to say, ‘We’ve always done it this way.’ I try to fight that. ‘We’ve always done it that way’ is not necessary a good reason to continue to do so. We need to invent the future.”

Let’s use informatics to invent the future of nursing care transformation. **JHIM**

Judy Murphy, RN, FACMI, FHIMSS, is vice president, Information Services, at Aurora Health Care in Milwaukee, Wisc., an integrated delivery network with 14 hospitals, 100 ambulatory centers, home health agencies and 26,000 employees.