

## Editorial **Comments**

# JAMIA

### The Challenge to Health Informatics for 1999–2000:

Form Creative Partnerships with Industry and Chief Information Officers to Enable People to Use Information to Improve Health

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Health care is an information-intensive business. We have seen repeated calls for use of information systems to improve the health system. The decade began with the Institute of Medicine study<sup>1</sup> championing the computer-based patient record. The Health Insurance Portability and Accountability Act of 1996<sup>2</sup> included requirements to support information exchange and monitoring of outcome data with goals of administrative efficiency and process improvement. Participants in the 1998 Symposium of the American College of Medical Informatics (ACMI) developed three audacious goals for health informatics in the next millennium: a virtual health care databank, a national health care knowledge base, and a personal clinical health record.<sup>3</sup>

These calls to action are correct in identifying a need and the potential for benefit. However, they are simplistic in assuming that the focus provided by a legislative mandate or a Manhattan-style project will be adequate to achieve the desired impact on the health system. Experience suggests the opposite. Although progress is likely, it will fall far short of expectation. Simply put, the chief information officers (CIOs) and their vendors and consultants—the people charged

with managing the information services of the health provider and payer communities—are not able to put in place systems that will meet the need in a timely fashion.

The reasons for this inability to deliver are many. For example, a CIO may be asked to implement a system to automate a task that people in their enterprise are having trouble handling. When the nature of the enterprise or task changes, they are forced to start over. Even when they succeed in an implementation, the return on investment may be marginal unless the task involves an optimal mixture of people, process, and technology.

An entire industry of health information technology vendors and consultants has grown up to provide information systems and support. Many developed as an extension of a system success in one enterprise or niche. Despite these origins, most try to market a capability for providing an integrated solution. Unfortunately, the integration may be only at the level of the vendor name, with each product having its own user interface and data structure, often being developed by different companies that were since acquired. The marketing strategy locks in market share and leverages the installed base through add-on sales. Unfortunately, the installed base also serves as an anchor, slowing transition to the current information technology that might provide solutions to data or work process integration challenges.

Start-up vendors offer new technology but face barriers in terms of integration with products of established vendors. They also find a client base that does not understand either the new technology or the integration of people, process, and technology that is required to increase effectiveness.

Health informatics, the science that deals with health information, its structure, acquisition, and use, holds several keys to better outcomes for both CIOs and the health information technology industry. The first key is information structures and communication methods that allow information to be linked into work pro-

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cesses as needed, but managed as an asset outside the information systems that automate those processes. The second key is data mining techniques and filters that can locate information but limit reports to the immediate context. The third key is presentation metaphors that enhance biomedical users' cognition and exploration and adapt to individual learning styles. Finally, the key to the future is education and training programs that can produce people who know how to develop effective information-enabled work processes.

Despite holding these keys, informatics groups based in academic medical centers have had minimal impact on the health system and the health information technology industry. The pioneering groups of the 1960s and 1970s developed in parallel with the information technology industry. They had to do everything from assembling processors to writing operating systems and languages, in addition to working on health-specific challenges. Groups that have not evolved away from this heritage have many of the problems of established vendors and have their time divided across too many responsibilities. Other groups have the problems of start-ups, an inability to get their ideas into operation in a real setting.

The time has come for CIOs, the health information technology industry, and health informatics to come together to enable people to use information to improve health. Better cross-talk among the parties could establish a bridge, but such a bridge is not likely to be sufficient to harness the collective strength of potential partners to accomplish audacious goals. The roots are too strong and the differences in cultures and priorities of the moment are too great. We may need a new business model to achieve effective alliance. One where we identify the core competencies of each potential partner. One where we develop scenarios showing that each partner can win by focusing on putting their piece of the puzzle in place. One where the magnitude of the win is increased dramatically by the pieces provided by the other partners. In short, we need to change the game so that leverage among partners replaces competition.

During the two years that I am president of ACMI, I will use my office to direct the attention of the College to this challenge. We will start with the 1999 ACMI symposium, where we will sharpen our own understanding of how we might better focus our energies. For example, what information problems are unique to health? Where can we reuse tools from the non-health information technology industry or ideas from the computer and information science disciplines to solve health problems? Where can health informatics make the most difference to the health system? Can we find benchmarks from other industries that demonstrate the value of solutions based on informatics?

After this self-examination, we will need to reach out. How might we bootstrap the level of understanding of informatics by CIOs and the health information technology industry? How can we, in turn, get a better understanding of business models and health system management? How might we give industry access to academic laboratories and provide new revenue streams to the academic units? How might we give trainees access to real-world problems?

Exploration of these questions can pay back in the near term, stimulating us to think outside the box and guiding our individual research agendas and applied informatics strategies. Over the long haul, the exploration can provide a basis for partnership among the factions that need to come together to translate informatics into better health. Success in this translation is a first step to establish credibility for audacious goals.—WILLIAM W. STEAD

#### References ■

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