Further Defining e-HIM

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by Donald T. Mon, PhD

As articulated in "A Vision of the e-HIM Future," health information in 2010 will be "electronic, patient-centered, comprehensive, longitudinal, accessible, and credible."[1] As we transform from a paper to an electronic health information infrastructure over the next few years, it is important to keep two principles in mind. First, the transformation to e-HIM is truly migratory. We must always be cognizant that we still have real problems to solve in today's paper-based environment, even as we migrate to tomorrow's electronic world. Second, throughout the transformation process, we must retain our uniqueness as HIM professionals.

But in the electronic age, what is that uniqueness? How is e-HIM different from information technology, computer science, and informatics? How is it similar, and will those similarities cause us to be competitive or collaborative with our colleagues? The short answer to those questions is that e-HIM is *collaborative, practical*, and *applied*, with an increasing emphasis on *knowledge generation, knowledge management*, and *process engineering*. Our uniqueness in the electronic environment is that no other profession consists of the *aggregate* primary skills—in records management, coding, privacy, security, data quality, data management, work flow management, and analytics, among others—that the HIM profession has. Our same primary skills in the paper-based world will enable us to collaborate effectively with IT professionals, computer scientists, and informaticians in the electronic environment.

Accurate Data Across Many Systems

Consider how various professionals would work together on a major project under the national healthcare information infrastructure (NHII) initiative as an example. William Yasnoff, MD, PhD, senior advisor to the assistant secretary for planning and evaluation, is responsible for developing the NHII initiative for the Department of Health and Human Services. Yasnoff stated at a December 2003 conference that under the NHII concept, individual provider electronic medical record (EMR) systems are only building blocks.[2] They do not comprise the entire NHII.

Further, Yasnoff asserted that NHII is not a central database of medical records for the entire country. As one of many recommendations generated during NHII's 2003 conference, individual provider EMRs will thus form a constellation of federated, distributed systems that will exchange medical record information throughout an organization and across organizations.[3]

Federated systems are those that are independent, yet connected for some common purpose—such as supporting the administrative, financial, and clinical operations of a facility—but are not components of one central system. It follows the political analogy of a federation of states, as opposed to a union of states.

In federated, distributed systems, some of the primary challenges are to:

- Ensure that the medical record is always available, so that it can be accessed by other systems in other organizations anytime, anywhere
- Uniquely identify each patient, so that the right individual's data is provided when appropriately accessed
- Integrate data across the disparate systems, so that a consistent patient record can be delivered to clinicians for direct care and to decision support databases for analysis
- Ensure that patient data is accurate, to facilitate surveillance of bioterrorism and disease, public and population health analysis, and proper clinical care
- Ensure confidentiality and security of patient data as it moves from one institution to another

A Collaborative Effort

Such a complex infrastructure of federated, distributed systems will require the collective skills found in information technology, computer science, informatics, and e-HIM. No single field or profession can do the job alone. The chart "E-HIM's Collaborative Role" illustrates a few of the areas in which collaboration is necessary, while highlighting the valuable contributions e-HIM can make. For space reasons, the list of activities is certainly not exhaustive. It is intended to give a flavor for how IT, computer science, informatics, and HIM professionals can collaborate in a major electronic initiative.

In reviewing the chart, certain threads are apparent, which underscores the attributes of e-HIM described above. In virtually all areas, e-HIM contributions are practical and applied. Even in informatics, for instance, there are basic versus applied aspects. E-HIM focuses more on applied informatics. While many informaticians may focus on such basic informatics topics as how the design of a database structure can facilitate decision making, for example, e-HIM might explore how the accuracy of the data in a database affects what decisions are made, how they are made, and the consequences of those decisions. Here, the practical outcome is oriented toward the generation and management of knowledge about the business and the impact to the business.

A Transformational Process

E-HIM is a transformational process in which we retain our identity as HIM professionals, continue to be grounded in today's paper-based world, yet shape our roles and careers to contribute effectively in the electronic environment. There are no clear boundaries between information technology, computer science, informatics, and e-HIM. And that's a good thing, because it means there are common skills and mind sets among the professionals in the respective fields that can be used to enhance collaboration.

E-HIM's Collaborative Role

E-HIM Contributions in Federated, Distributed EMR Systems Within a Local or Regional Healthcare Information Infrastructure

Activity	Information Technology	Computer Science and Informatics	e-HIM
System Selection and Design			
Gather business and functional requirements. Develop request for proposal. Select vendor.	Manages the technical process of (1) collecting business and functional requirements within and across organizations and (2) developing the RFP.	Could study the differences and similarities among business requirements across organizations and how they map to functional requirements, then suggest ways to exchange information to meet common and unique business and functional requirements.	**Collaboration with IT:** Since HIM professionals understand: (1) the reasons why certain data are contained in the EMR, (2) how the data are defined, and (3) why other organizations request clinical, administrative, and financial information from the record, HIM staff and managers can provide both IT and informaticians with broader, cross–organizational level business and functional requirements-as well as the HIM department's-emphasizing privacy and security. Meets with users and managers within organization and from other organizations to understand and confirm business and functional requirements. Contributes significantly to development of RFP. Goes on vendor site visits. Contributes significantly in vendor selection. **Collaboration with informatics:** Participates heavily in or coleads information exchange study.

Conduct system analysis and design	Manages the technical process of systems analysis and design, process re-engineering	Studies benefits of re-engineered process flow.	**Collaboration with IT:** Since HIM professionals understand how data flows through and are reported within an organization, can identify, in conjunction with user departments, (1) which stakeholders use which data and how they use it, (2) privacy and security controls needed throughout the process, and (3) data quality requirements. Contributes substantially to re-engineering processes. **Collaboration with informatics:** Participates heavily in or coleads re-engineering study.
System Implementation			
Convert data	Manages the technical process of data conversion	From an academic standpoint, studies which data elements are converted, what they are converted to, and the various data conversion techniques employed.	**Collaboration with IT:** With their understanding of data definitions and data quality, can identify how data must be redefined during the conversion process. **Collaboration with informatics:** From a practical standpoint, studies the quality of data before and after conversion and how converted data facilitated better reporting.
User access control and access to disparate databases	Manages and audits access control	**Computer science:** May develop "software agents" to read database record layout and access data given appropriate authorization.	**Collaboration with IT:** Suggests organization's access control privileges based on privacy and security.

Notes

1. E-HIM Task Force. "A Vision of the e-HIM Future: A Report from the AHIMA e-HIM Task Force." AHIMA, Chicago, IL, 2003.
2. Yasnoff, W. "National Healthcare Information Infrastructure (NHII): Key to the Future of Health Care." Presentation given at the 2003 Great Lakes HIPAA Implementation Summit, December 5, 2003, Schaumburg, IL. Centers for Medicare & Medicaid Services, Midwest Center for HIPAA Education, and HIPAA Illinois Workgroup.
3. National Healthcare Information Infrastructure. "Developing a National Action Agenda for NHII." Conference held June 30–July 2, 2003, Washington, DC. Available at www.nhii-03.s-3.net/materials.htm.

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