Keeping Current in the Electronic Era: Data Age Transforming HIM's Mandatory Workforce Competencies

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Ponder this for a moment. From the beginning of recorded history to 2003, five exabytes (five billion gigabytes) of information was created by humans, according to recent IBM calculations. The rate at which that level of information is being created is increasing exponentially. In 2012, five exabytes of information was generated every two days. In 2013, it was created every 10 minutes.[1]

Recent projections suggest that health information will increase by over 50 times between 2012 and 2020. This is what is meant by Big Data with relation to healthcare. And for the health information management (HIM) profession, this means big change as well—jobs are adapting significantly and new career opportunities are emerging in informatics, analytics, and information governance.

The United States has a healthcare delivery system with soaring costs and outcomes that are less than optimal.[2] There is a great deal of hope being placed on leveraging the massive amounts of data being captured across the healthcare continuum to drive down costs and improve outcomes.[3] Researchers have had early successes in Big Data analysis around hospital readmissions, adverse events, and high cost patients. Big Data is not simply a research endeavor, however. Analyzing data is imperative to clinical outcomes, patient engagement, epidemiology, population health, and process improvements, to name a few.

All information gleaned from analyzing data—such as cost, quality, system design, etc.—is dependent upon the trustworthiness of the information. This is where Big Data, information governance, and HIM meet. But there is a problem. There is a lack of a skilled workforce who possesses both the clinical and technical skills to leverage Big Data, including such competencies as data mining, computer science and engineering, managing electronic health records (EHRs), and system analysis and design. According to estimates from the Office of the National Coordinator for Health IT (ONC), job postings for health IT jobs have tripled since the HITECH Act was enacted in 2009. The Healthcare Information and Management Systems Society (HIMSS) also reports a shortage of over 40,000 health IT professionals to meet industry demands.

Based upon the shifting healthcare landscape and future needs of professionals, much has been happening to move the HIM profession forward. AHIMA has taken the lead by:

- Developing a white paper and resources aimed at advancing information governance in healthcare. AHIMA defines information governance as the activities and technologies that organizations employ to maximize the value of their information while minimizing associated risks and costs.
- Creating the Certified Health Data Analyst (CHDA) credential, which recognizes professionals for their "knowledge to acquire, manage, analyze, interpret, and transform data into accurate, consistent, and timely information," according to AHIMA's website.
- Creating the Health Information Career Map to illustrate the jobs and career paths for HIM professionals (see the sidebar above).
- Submitting proposals to the US Department of Labor to request changes to the standard occupational classification for a health information technician and add a new classification for a health informatics practitioner.
- Re-envisioning the association's commitment around advancing the educational level of its membership through its strategic initiative known as "Reality 2016," which includes transforming HIM to a graduate-level profession and realigning the HIM curriculum with workforce needs. In an effort to address these priority areas, AHIMA's Council for Excellence in Education (CEE) has developed a revised set of curricular competencies for the associate, baccalaureate, and graduate levels.

Health Information Career Map

The Health Information Career Map was developed through an analysis of HIM jobs and career transitions. HIM jobs are categorized into the following six job families:

- Compliance/Risk Management
- Education/Communication
- Informatics/Data Analytics
- IT/Infrastructure
- Operations Medical Record Administration
- Revenue Cycle, Coding, and Billing

The Career Map is available online at http://hicareers.com/CareerMap.

AHIMA's efforts speak to the need for managing health information in an increasingly digital age. While there is clearly an ongoing need for the traditional skills of the HIM professional, John Glaser, PhD, CEO of Siemens Healthcare, speaks to the value of the HIM professional in ensuring integrity of the data in the patient's medical record. "The integrity of the information in the electronic health record is a critical component in helping to ensure patient safety as well as to ensure that quality increases while driving down an organization's cost," Glaser says. The new academic and professional competencies demand that HIM professionals have the ability to improve the integrity of health information.

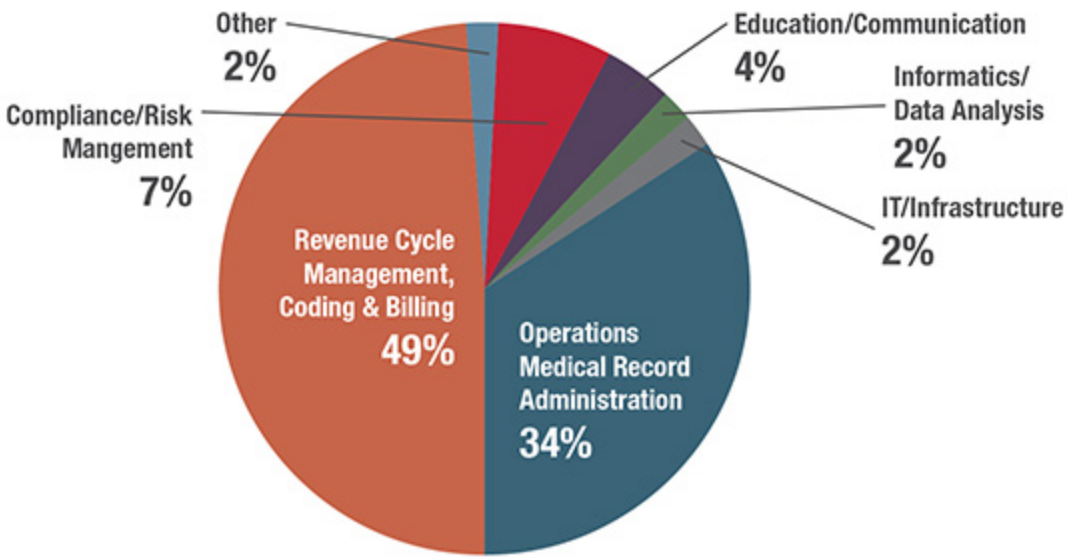
One way that new competencies are becoming apparent for educators and field instructors is based on the jobs that recent graduates are obtaining. An increasing number of graduates are securing jobs as data and application analysts, program coordinators, and system training specialists. Tanner Viola, a recent graduate of the College of St. Scholastica's HIM bachelor's program, works for an EHR vendor as a data conversation programmer specifically because of his exposure to programming languages (Java, SQL, and R) during his HIM educational program. Viola says that his education prepared him to "understand both the complexity of healthcare delivery and electronic health records."

"Understanding the flow of data through an organization has greatly assisted my ability to effectively manage massive amounts of data within an EHR," Viola says.

Joy Selleck, a recent graduate of St. Scholastica's HIM bachelor's program, currently works as an accountable care coordinator. When discussing the challenges of her current work of coordinating data across many organizations, Selleck says that an understanding of information systems, analytics, and also how to effectively communicate information needs to stakeholders is crucial for her role.

Table 1: Analysis of HIM Jobs by Job Family

An analysis of job data information from 35,000 people showed that only four percent of current AHIMA members have roles relating to informatics/data analytics or information technology/infrastructure. AHIMA is working to raise that number.



Source: AHIMA. Original Research, unpublished. 2014.

Winds of Change Blow Strongly on HIM

As evident from the testimonials of recent HIM graduates, the workforce is in need of professionals who possess the technical and analytical skills to maximize the use of digitized health information. With the increasing trend of HIM professional roles related to health information technology and data analytics, there is increasing overlap in the skills and competencies that define the health informatics profession.[4] Justin Klimchak, a current undergraduate in the HIM bachelor's program at the University of Pittsburgh, commented that academic courses in health informatics and analytics were very valuable in preparing him to lead a career in the healthcare industry. Selleck offered a similar viewpoint by suggesting that courses in health informatics have been integral for understanding the technical underpinning of the HIM profession.

Some have called the changes in healthcare a "revolution" that will require HIM professionals to have strong competence in statistics, data standards, electronic data management (analytics), and data architecture.[5] In the *Journal of AHIMA* article "Health Information Management 2025," author Chris Dimick described how the health IT revolution will decentralize HIM departments and initate specialized, focused roles as HIM professionals spread across several different departments including clinical data management, privacy and security, data analysis, and in the areas of authorization and disclosure.[6]

Educators are already seeing evidence of this happening as new graduates are obtaining jobs across the healthcare system. HIM professionals are working to establish data governance and define data objectives; identify data and information requirements; normalize, integrate, and organize data solutions; and ensure the security and privacy of this ever increasing amount of information.[7]

As the transformation continues, AHIMA's membership will continue to change. According to an analysis of AHIMA job data comprising the information for 35,000 people (see Table 1 on page 40), as little as four percent of current AHIMA members have job roles classified as relating to the job families of informatics/data analytics or information technology/infrastructure.

This number is important for multiple reasons. First, if the future of the profession is focused on these domains because of the rise of Big Data, it is critical for a larger proportion of the membership to move in this direction. Second, there is a clear relationship between education level and members who report having jobs associated with Big Data—more than two-thirds of the AHIMA members who work in the health informatics/data analytics and information technology/infrastructure job family have a baccalaureate or graduate degree.

Convergence of HIM and Health Informatics

The convergence of HIM and health informatics is apparent. The new professional competencies rely heavily on skills related to data management in an increasingly electronic world. Gail Graham, RHIA, assistant deputy under secretary for health

informatics and analytics within the Department of Veterans Affairs, recently provided a testimonial that conveys the importance of both education and work experience. "Veterans Health Administration (VHA) is invested in the continuing development of a health informatics professional workforce via the Health Informatics Initiative," Graham says. "HIM professionals are excellent candidates for this continuing education effort due to their unique academic and work experience and their understanding of the fundamental requirements for a legal health record."

Health information management and health informatics both revolve around the use of health information and technology to improve patient health and the delivery of care. So the question remains, at what point does health information management and health informatics diverge?

An industry group comprised of HIM, physician, nursing, and policymakers developed a definition of health informatics for the standard occupational classifications (SOC) proposal to the Department of Labor stating that "health informatics workers apply science to ensure the effective use of data, information, and knowledge that supports the safe and effective delivery of healthcare and improves health and wellness. Workers apply interdisciplinary knowledge, skills, and tools; enabling information to be collected, managed, used, and shared safely to support the delivery of healthcare and to promote health."[8]

Health informatics has a history of carrying out clinical research to drive the development of health IT. As health informatics becomes more applied, and not solely isolated to research, the principles that define the field are being adopted across medical disciplines.[9] The role of health informatics in HIM is growing, just as the role of health informatics in all other medical and allied fields is growing. For instance, biology[10], medicine[11], nursing[12], pharmacy[13], dentistry[14], public health[15], and the library sciences[16] all have some level of convergence with health informatics.[17]

New Competencies Needed for HIM Students and Current Professionals

The new academic curricular competencies reflect current workforce changes and serve as the foundation of professional practice competence. Employers in a variety of workplace settings value today's HIM professional for many reasons. "Given the rigor with which health information management (HIM) professionals learn about data and information structures in healthcare, there are opportunities within our industry [given the HIM skillset], specifically clinical trial information management, understanding of the healthcare delivery system, and assistance in building the industry's role in the health information technology environment," says Stuart Sowder, vice president of external medical communications at Pfizer Medical.

Clearly, health information technologies—outlined specifically in subdomain III.A of AHIMA's new curricula competencies—are increasingly important for HIM professionals. Understanding methods and processes of data collection, storage, analysis and reporting, as well as being part of the decision making team on the development of networks and databases, is critical to understanding how health information is managed in an electronic environment.

In preparing students to achieve this set of skills, some of the software applications that have been utilized among healthcare organizations include Microsoft Office tools such as Microsoft Excel, Excel PowerPivot, Microsoft Access, and various other applications for data collection and analysis as well as programming and reporting tools that are currently available, including SQL, SAS, and R. These tools could be useful for functions such as analyzing data, making appropriate decisions based on the data, and presenting the data to stakeholders. Employers are requiring applicants to have experience with using these tools in healthcare settings, especially related to "analyst" job opportunities. See AHIMA's Health Information Career Map, located at http://hicareers.com/CareerMap/, for a sample of jobs related to analyzing data.

Analytics and Decision Support (subdomain III.C), as noted above by current and recent HIM students, is imperative to HIM roles. Professionals must be competent in the application of data extraction methodologies, be able to analyze the results, facilitate decisions, and make recommendations based upon data.

With the increased focus and use of the EHR in a meaningful way, there is a requirement for HIM professionals to be able to analyze and extract data and make necessary recommendations to ensure high quality patient care. This could be as simple as making sure that there are data definitions and dictionaries developed during the early stages of project planning, and ensuring that HIM professionals are part of a multi-disciplinary team with a continuous loop of ongoing communication among the HIM/clinical/and technical teams.

In addition to data analytics, a firm understanding of healthcare statistics (subdomain III.D) is essential to the management of health information. Professionals must be able to utilize basic descriptive institutional healthcare statistics, as well as analyze data to identify trends. Using large healthcare datasets, either primary or secondary in nature, is vitally important for healthcare organizations today.

The recent graduates interviewed for this article were well aware of the growing need of enterprise information management and are aware of the opportunities that come along with it. In essence, some of the skills and abilities that are important to achieve the competencies in this domain are attention to detail, effective organizational skills, effective communication and presentation skills, compiling and analyzing data, report writing, ability to communicate effectively with different departments/personnel, knowledge of the content area, and overall knowledge of the workflow.

Competency Self-Assessment and Resource List Available Online

Important work is yet to be done by educators, students, and practicing HIM professionals to ensure the HIM profession is poised to successfully transition to meet the emerging needs of a workforce that has become more dependent on data analytics and informatics skills. This work involves a realistic and critical analysis of each individual's current skills.

The HIM Professional Competency Self-Assessment and resource listing, available online at www.ahima.org/competency, is intended to provide users with the opportunity to measure their current competency in numerous domains and subdomains that together are the foundation of the HIM professional scope of practice. While it is unlikely that any individual is fully competent in all of the identified areas, every practicing HIM professional should be aware of these foundational elements.

Students currently enrolled in academic programs will learn of and be able to demonstrate the required level of competence as measured by their success in their programs—that is the purpose of accreditation of academic programs. The entry level RHIT and RHIA credentialing examinations also include content related to many of the competencies and serve as an additional measure of success. However, practicing professionals may be far removed from the competencies and it is important that practitioners gain knowledge and skills through work activities and/or continuing education.

The Commission on Certification for Health Informatics and Information Management (CCHIIM) is assessing the current continuing education domains that are required for reporting to maintain AHIMA-granted credentials. It is likely the existing domains will be revised to reflect the new and emerging competencies around data analysis, informatics, information governance, and others.

While it can be easy to turn a blind eye to changing workforce needs, it is imperative that both incoming and practicing HIM professionals become better equipped to manage information in an electronic age. Data analytics and informatics skills are additional tools that every practitioner must have in their toolkit to demonstrate ongoing relevance in the changing healthcare industry.

Computerization Forcing HIM to Change

Frey and Osborne conducted a study in 2013 evaluating the susceptibility of jobs to computerization.[18] In this study, the probability of 702 occupations were ranked from lowest to highest in regard to their susceptibility for computerization. The existing Medical Records and Health Information Technicians occupations were ranked at 550 with a 91 percent susceptibility to computerization. Conversely, the existing Medical and Health Services Manager occupation was ranked at 36 with less than one percent susceptibility to computerization.

Repetitive tasks are highly suspect for computerization with advancing technology. This is not to suggest, however, that all HIM-related functions are likely to be completely computerized in the future. For example, those roles that are complex and non-repetitive in nature, such as those in the Medical and Health Services Manager occupation, are likely to thrive.

"We must adapt to the changes in our workforce and obtain the competencies and skills that will enable each of us to maintain relevancy," says Lynne Thomas Gordon, MBA, RHIA, CAE, FACHE, FAHIMA, CEO at AHIMA. "Lifelong learning is not an option, it is an imperative. It is no longer enough to have the same skills we had a year ago. We must be continually assessing ourselves and closing knowledge gaps in order to stay current and provide value."

The new data age and innovations in technology are transforming HIM professionals' personal and professional lives. These changes are opening new doors to jobs and career paths that didn't exist a few years ago, while at the same time closing others. Being in a technology- and information-driven profession means individuals must expect continuous change in HIM practice and shore up their skills to stay relevant in today's healthcare system.

Notes

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