HIM Connections in the Kaleidoscope of Informatics

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The emergence of health informatics within health information management (HIM) has changed the ways of HIM practice and operations. This change has also created various opportunities for HIM professionals to further develop their careers and gain additional education and workforce training on new, required skill sets.

The demand for special skill sets, such as informatics, analytics, data use, communication, and critical thinking skills require new and adapted education programs and formats. For example, short certification programs and specialty track programs are evolving that combine health informatics with HIM skill sets and competencies. As professionals face the challenge of exponential growth of information and technology, the HIM profession has been pushing to promote graduate level or higher education to expand HIM's existing body of knowledge with informatics-related concepts.

The evolution of HIM with informatics has forced the HIM workforce to transform and has created new career opportunities in informatics, data analytics, and data standards and application. Workforce markets are identifying new roles for potential jobs that bridge the gap between informatics and HIM practice. HIM professionals are required to have up-to-date knowledge and skills so they can act as the intermediary between clinical and administrative operations, using technology such as electronic health record (EHR) systems.

There are also essential requirements for HIM professionals within their continuing education and on-the-job training to acquire new skills for newly assigned functions and responsibilities, such as knowledge and skills related to health information analysis and business intelligence using basic and advanced statistics, decision support, and data analytic approaches.

Informatics Defined

Informatics is an applied science concerned with data processing and information management, and therefore widely used in certain industries for insight on operations. Applied informatics refers to the application of informatics tools and principles to a particular information system within an industry. Analogies are helpful to explain complex subjects like informatics.

Take the tourism industry. Generated data concerning travelers' hotel reservations and plane ticket destinations can sit in various databases as a collection of unused data points. Informatics experts can mine these points using computers to reveal information about consumer preferences and even identify or analyze trends in recreational behaviors.[1] The result is that tourism industry leaders can discuss strategic decisions that will improve how their products and services are experienced and sold. Regardless of the industry, all types of informatics draw from a common core of computational competencies in generating, storing, using, processing, and analyzing data.

Health Informatics: Roles and Functions

The US National Library of Medicine (NLM) defines health informatics as "the interdisciplinary study of the design, development, adoption and application of IT-based innovations in healthcare services delivery, management, and planning."[2] Health informatics is a modern term—the use and management of information was traditionally called medical informatics.[3] Health informatics can be further subdivided into several health functions: clinical, research, and population-related.

Clinical Informatics

Perhaps you have heard several names for health informatics, and that is not uncommon. Some consider clinical informatics and health informatics the same thing, while others recognize health informatics as an umbrella term under which clinical informatics lives.

Regardless, clinical informatics focuses on using tools that assist in treating patients and is uniquely practiced by health services professionals. For example, physicians can use computerized physician order entry (CPOE) to electronically enter treatment plans into EHRs and order patient medications. Nurses can use clinical decision support (CDS) on EHRs to better monitor therapy and evaluate disease management. Likewise, radiologists can use electronic clinical tools, like CDS, to assist in making evidence-based diagnoses and access case studies shared on community databases called health information exchanges (HIE). Pharmacists can use clinical information systems to alert when adverse drug reactions might result from ordered medications. Even healthcare administrators and HIM professionals use informatics to understand facility patient mix or disease trends.

Translational Bioinformatics and Clinical Research Informatics

Informatics can also support research aimed at creating new medications, medical devices, or clinical practices. Clinical research informatics, also known as biomedical informatics, focuses on data obtained from clinical trials and how to use it. Translational bioinformatics assists biologists and geneticists, who often need data sets to be integrated in order to search for and find answers to elusive medical problems or even to generate new health questions that will initiate research.[4] Both biologist and geneticist practitioners tend to reside in academia and federal agencies. For example, the world's largest biomedical research agency and clinical research hospital complex, the National Institutes of Health (NIH), is home to many informatics experts. Their work involves collaborations within the scientific and medical communities to design clinical trials, conduct statistical analysis of data, and discover biomarkers.[5]
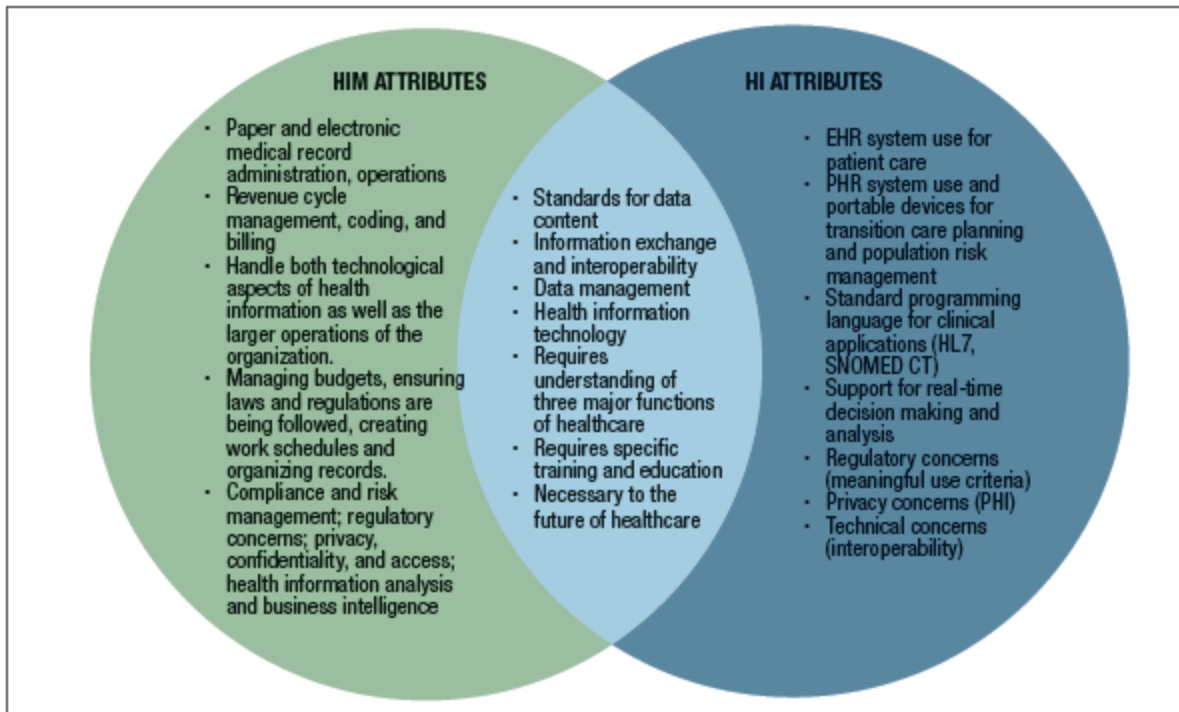
Public Health Informatics and Consumer Health Informatics

Public health informatics in general focuses on the health of populations rather than individual patients and on prevention rather than treatment. Some may try to interchange public health informatics and consumer health informatics due to their shared focus on population health. However, consumer health informatics uses data to better design and customize consumer information interfaces. For example, these experts design and manage applications that are categorized as self-management systems, electronic personal health records and patient portals, and peer interaction systems.[6] On the other hand, public health informatics uses data for more epidemiologic purposes. For example, currently this discipline is used in monitoring and surveillance on the Zika virus. Informatics has helped at risk populations track cases and prevent further outbreaks with information analyzed from health databases.

HIM's Connection to Health Informatics

In a sense, HIM and health informatics function in a symbiotic relationship. As illustrated in Figure 1 on page 41, HIM and health informatics both have their own unique characteristics and attributes, however they can still blend well with each other.

Figure 1: Key Similarities and Differences Between Attributes of HIM and Health Informatics

HIM ATTRIBUTES
- Paper and electronic medical record administration, operations
- Revenue cycle management, coding, and billing
- Handle both technological aspects of health information as well as the larger operations of the organization.
- Managing budgets, ensuring laws and regulations are being followed, creating work schedules and organizing records.
- Compliance and risk management; regulatory concerns; privacy, confidentiality, and access; health information analysis and business intelligence

(Overlap)
- Standards for data content
- Information exchange and interoperability
- Data management
- Health information technology
- Requires understanding of three major functions of healthcare
- Requires specific training and education
- Necessary to the future of healthcare

HI ATTRIBUTES
- EHR system use for patient care
- PHR system use and portable devices for transition care planning and population risk management
- Standard programming language for clinical applications (HL7, SNOMED CT)
- Support for real-time decision making and analysis
- Regulatory concerns (meaningful use criteria)
- Privacy concerns (PHI)
- Technical concerns (interoperability)

The days of paper health records are slowly fading, but the custodians of the health record are still here to stay. Although the medium has changed, the basis for the profession has not. HIM professionals are required to maintain active paper and electronic legacy and legal records to maintain patient safety and compliance. These mediums all depend on inputs of data that flow into the EHR from almost every department. Health informatics functions in a similar manner, wherein all aspects of healthcare delivery may be impacted by the inputs and outputs of an informatics system or professional.

The work of an interface analyst (a health informatics vocation) may directly impact the data flowing into a patient's health record, which may impact the quality of the patient's record. In this regard, HIM professionals can provide a great deal of insight to their health informatics counterparts when converting administrative and financial data to information. Furthermore, with knowledge of coding and revenue cycle workflows, HIM professionals are well positioned to take on more informatics-based analytical work and even system builds if they can speak the same language of the end users they are working with.

The same skill sets required to manage and maintain paper charts are now required to maintain health information which can be carried through the entirety of a patient's care continuum. While the same skills are required, they alone are not enough if HIM professionals intend to balance the three types of operations within healthcare: clinical, financial, and administrative. Informatics requires the adoption of several other skill sets that include the use of interface specifications, data flow mapping, data properties, and comprehending technical jargon.

HIM professionals must take the initiative to research new terms, phrases, and concepts through available resources, as it not only displays the desire to learn but a willingness to adapt as well. Consider also that taking the time to research may set the example for other staff who desire an opportunity for self-improvement and career growth. One recommendation is to build up transcriptionists. They have fantastic skills in understanding clinical documentation and can leverage this skill as future system analysts for clinical documentation applications. Simply considering the emergence of health informatics is a good starting point for HIM professionals.

Become a Jack of All Trades

The informatics age is transforming HIM practice and operations. Health informatics has created new opportunities for HIM professionals with demands for up-to-date knowledge and new skill sets. The similarities and differences between each area

of informatics revolves around the type of user or HIM professional employing the informatics. Each professional's unique needs and job requirements shape how they employ patient data found in EHRs, HIEs, and clinical trial databases.

There's an old adage that is frequently misquoted, which has led to a negative contextual representation of the middleman: "A jack of all trades and a master of none." HIM professionals are, in a sense, the "jack of all trades." They understand the clinical, administrative, and financial processes that equate to healthcare delivery. But it should be understood that HIM's role and position in today's dynamic and turbulent times is one of its greatest strengths. Thus, "A jack of all trades and a master of none is better than a master of one."

Notes

[1] Fuchs, Matthias. "Business Intelligence in Tourism: How can Big Data be turned into valuable insights for strategic innovation in places and destinations?" *Pan European Networks: Science & Technology*. 2015.

[2] US National Library of Medicine. "Health Informatics."

[3] American Medical Informatics Association. "The Science of Informatics."

[4] Butte, Atul J. "Translational Bioinformatics: Coming of Age." *Journal of the American Medical Informatics Association* 15, no. 6 (November-December 2008): 709-714.

[5] Strimbu, Kyle and Jorge A. Tavel. "What are Biomarkers?" *Current Opinion in HIV and AIDS* 5, no. 6 (November 1, 2011): 463-466.

[6] Agency for Healthcare Research and Quality. "Consumer Health IT Applications."

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