

Reaping the Benefits of Comprehensive Health Information Management

ABSTRACT

Healthcare Information Management (HIM) is more dynamic than ever before, and the pace of change only promises to accelerate. From Computerized Physicians Order Entry (CPOE) systems, to the national Electronic Health Records (EHR) initiative, the application of technology to make patient information management more efficient, and ultimately improve quality of patient care, is well underway.

These new HIM solutions are driven by a number of overlapping and converging trends: the drive for increased operating efficiencies, improved quality of patient care in an extremely dynamic healthcare landscape, more regulations and public health initiatives, and the availability of technology-based solutions. Healthcare records management is an intrinsic component of these initiatives. Healthcare organizations will continue to manage hybrid patient information; with varied formats of physical data, (e.g. paper and film), and increasing volumes of electronic data in diverse formats.

This paper examines some of the best practices used in managing the increasing complexity of medical records while planning for the transition to an electronic health record system, and to realizing the potential benefits. The implementation of new technology-based solutions requires careful consideration of several factors: continued integration of physical and electronic data, the impact on existing records workflow, the importance of detailed records descriptions, system scalability-both in the ability to consolidate geographically dispersed medical records and to incorporate innovative tools as they emerge – in short, the records systems' role in your information management strategy. HIM professionals need to begin planning for the transition to the EHR, and this includes how hybrid, (e.g. physical and electronic), medical records will be managed.

REAPING THE BENEFITS OF HEALTH INFORMATION MANAGEMENT

Healthcare Information Management is Dynamic

By some measures, healthcare in the United States is one of the largest, most complex economic sectors in the world, and with older demographics pointing to even greater burdens on the healthcare system, it shows no signs of slowed growth.

“Healthcare now accounts for 15% of the Nation’s Gross Domestic Product (GDP) with Federal and State governments paying for almost 50% of that cost, making the health sector in the U.S. the largest and most complex economic and social sector in the world.”¹

The sheer volume of information generated by healthcare, both physical and electronic, is staggering. A 200 bed hospital could easily generate more than a mile of paper documents a year, a significant portion of which must be stored.² It is estimated that patient administrative paperwork alone takes at least 30 minutes for every hour of patient care.³ This does not include the diagnostic data, and the increasing number and complexity of tests ordered by physicians and clinicians. Innovative technologies such as PET scans, MRIs, fetal monitor strips, computed tomography, etc., are increasing the types and volume of information that must be stored and managed.

The healthcare landscape itself is increasingly dynamic. Healthcare organizations, physicians networks, suppliers, and hospitals are forming new alliances, giving rise to Integrated Delivery Networks (IDNs). The distribution and sharing of information within hospitals, between hospitals, and with third parties such as suppliers, payers, public health bodies, and researchers is increasingly becoming more complex and demands greater speed and accuracy. Healthcare information professionals are under increasing pressure to be more efficient and more cost-effective. A recent Health Information and Management Systems Society (HIMSS) survey of healthcare executives at 700 hospitals indicated a high awareness of the need to better manage healthcare information, specifically to improve security and reduce medical errors.⁴

Healthcare Initiatives and Information Management

Somewhat uniquely, healthcare is also subject to national initiatives specifically targeting information management. The more visible of these initiatives is the Health Insurance Portability and Accountability Act (HIPAA, 1996), which originated with concerns about patient information privacy and security. HIPAA covers a list of healthcare transactions: eligibility, claims, claims status, payments, document attachments, and referrals or authorizations. HIPAA has also laid the foundation for stable and secure Electronic Protected Health Information through mandated unique identifiers for providers, health plans, and employer (healthcare organizations); it has regulated patient information privacy and security procedures; and it has defined electronic data transaction and healthcare code set standards.⁵

In short, HIPAA has provided the foundation for a National Health Information Infrastructure (NHII), and ultimately, an EHR. Championed by Dr. David Brailer, the National Coordinator for Health Information Technology, the Federal government continues to push for greater efficiencies in healthcare information management.

The American Health Information Management Association (AHIMA) defines Electronic Healthcare Records Management (EHRM) as:

“EHRM requires the decision making and planning throughout the entire lifecycle of the EHR – from planning, processing, distribution, maintenance, storage, and retrieval of the health record to its ultimate disposition, including archiving or destruction.”⁶

The Department of Health and Human Services defines the NHII initiative as:

- An initiative set forth to improve the effectiveness, efficiency and overall quality of health and health-care in the United States
- A comprehensive knowledge-based network of interoperable systems of clinical, public health, and personal health information that would improve decision-making by making health information available when and where it is needed
- The set of technologies, standards, applications, systems, values, and laws that support all facets of individual health, health care, and public health
- NOT a centralized database of medical records or a government regulation ⁷

And HIPAA and the NHII initiative are by no means the only standards or legislation converging to impact medical health records practices. There is Health Level 7 (HL7) from the American National Standards Institute, whose mission is:

“To provide standards for the exchange, management and integration of data that support clinical patient care and the management, delivery and evaluation of healthcare services. Specifically, to create flexible, cost effective approaches, standards, guidelines, methodologies, and related services for interoperability between healthcare information systems.”⁸

There is the Digital Imaging and Communications in Medicine (DICOM) standard, which has done much to enable adoption of Picture Archiving and Communication Systems (PACS) in diagnostic imaging. As a part of its performance evaluation and accreditation mission, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) works to promote standards and efficient health information management practices. The goal of all these initiatives, regulations, and standards is to foster an environment for more efficient, accurate, and secure healthcare information management systems.

Changing Concepts of Medical Records

It has been estimated EHRs in conjunction with a national network “can save about \$140 billion per year – about 10 percent of total U.S. health spending – through improved care and reduced duplication of medical tests.”⁹ The EHR discussion has also brought into focus the complexities of managing patient records, and the significant challenges implementing integrated electronic solutions. Healthcare records are becoming more comprehensive, include more diagnostic data, more diverse data, and frequently cover a longer period of care.

“Health information collection will span the individual’s life and allow for comprehensive views of illness, health promotion and wellness, and disease and injury prevention activities. Health information will be used concurrently for multiple and diverse purposes, including healthcare delivery and treatment, outcomes measurement, finance, and support of health services and policy research, clinical trials, and disease prevention and surveillance at the individual, community, national, and international levels.”¹⁰

Patient information is remaining active (valuable) longer. Mandated privacy, disclosure, and retention policies are increasing medical records management costs. Access demands are more diverse; more longitudinal across departments, organizations, and even across distributed health networks. Patients themselves are becoming more ‘consumerist’ in their attitudes about their medical records. The costs of storing and providing secure, accurate access to patient records, both physical and electronic, are exploding.

Hybrid Health Records Management Environments

Though more patient information is becoming digital, the vast majority still exists in paper format documents and film images. Accommodating different information types will require the management of hybrid records environments for some decades to come. Due to the longer and broader “lifecycle” of patient information, more resources are being spent in the management of post-payment, still active medical records, which are frequently physical. These hybrid records environments will persist. Increasingly, physical medical records management systems need to be tightly coordinated with emerging digital data management solutions.

A complete healthcare records management strategy must accommodate both physical and electronic records management. Records management policies and procedures will have to be reviewed and re-established for key functions: record order and completion, workflow changes, version control, report capabilities, signature capabilities, incorporation of new physical or electronic data, locking the records, to list a few.¹¹ HIM professionals will likely have to drive these initiative within their organizations, and there will be a longer list of interested constituents.

An effective strategy will include best practices for managing stored, physical records. To accommodate growing information requirement and integrate with evolving digital data management solutions, the optimal system must:

- Be scalable, have the capability to handle new information types as well as increased volume from mergers or cooperative alliances with other healthcare organizations
- Be widely and easily accessible to provide secure, longitudinal access to different departments as well as geographically distributed constituents
- Store the information with detailed descriptions (metadata), so different users can quickly determine what is contained in the records without having to access the information itself
- Must include the status of the information: record or component location, who checked it out, etc. for accurate audit trail, or Accounting of Disclosures
- And, as the volume of information continues to increase, some ability to intelligently “purge” records, to reduce space requirements, will become more valuable

Regulatory compliance will increase the need for more flexible audit capabilities, and measures to protect the confidentiality and integrity of the information. Any comprehensive information management initiative will require flexibility of the records management system, to grow and adapt to evolving protocols and environments, and to be able to access all the information required.

Benefits of Integrated Hybrid Health Information Management

As the EHR becomes more widely adopted and gains traction, physical records become less important and an increasing burden on the HIM professional because they are now responsible for managing not just one, but two file systems and in parallel. HIM professionals should look for alternative means to manage their paper records, allowing them to focus on future and more strategic Health Information issues. Alternative means of management include consolidation of disparate records libraries into a more cohesive, single library. This in turn will streamline their transition to the EHR, as records can be more easily managed and integrated with EHR software from a single repository.

The benefits of an integrated patient records management system are many. Some of these benefits will be in productivity and some will be increased profitability. A primary benefit is improved quality of patient care. It is estimated that between 2000 and 2002, the U.S. spent \$19 billion on “preventable patient safety incidents”.¹² This is not to say accurate and timely records will eliminate medical error, but more detailed record descriptions available in a timely manner can lead to a reduction in medical errors and improved patient care. Reduced medical error also means reduced legal risks. Quicker, more accurate retrieval of records may also lead to better treatment, reduced patient length of stay, and higher physician satisfaction.¹³ There are administrative benefits as well. Better online data descriptions and faster, more accurate records retrieval provide for more efficient billing cycles, decreased accounts receivables, less administrative staff, and less Medicare denials.¹⁴ A more longitudinal records view, even of basic descriptions, provides for greater staff efficiency across departments: it reduces searching for relevant paper documents.

There are further benefits if physical records management is outsourced. Valuable real estate, likely in several departments or even geographically distributed locations, can be converted to revenue generating purposes. Most importantly, HIM staff can be reallocated to more strategic initiatives than filing and retrieving paper. In each department throughout the organization, the administrative overhead of filing, tracking, and retrieving paper can be reduced.

Benefits also extend to meeting regulatory compliance and newer, more aggressive public health initiatives. Online descriptions, status and audit capabilities mean healthcare organizations can respond and track Release of Information requests faster and with fewer errors. Better accounting for disclosures can also mean less legal risk. A well managed and properly indexed medical records system provides detailed descriptions which enable better compliance with Federal initiatives, such as public health surveillance and reporting. Ultimately, a more comprehensive records system would allow for research with better disease identification and treatment recommendations.

“Maintaining a paper medical record requires a great deal of an HCO’s resources and is a labor-intensive, manual process... The physical process of locating and transporting the medical record to the correct location also requires the services of a number of medical record personnel. As anyone who has ever visited a medical record department can verify, the multiple volumes of medical charts take up an immense amount of space.”

– Thomas J. Handler, MD, Gartner Research ¹⁵

Technology, Workflow, and Policy

Technology plays a significant role in the evolving EHR and healthcare information management systems in general. Standards such as HL7 and DICOM, and legislation such as HIPAA, have helped foster an environment and tools such that integrated systems can be implemented. The emergence of a secure Internet infrastructure enables online tools with access to detailed physical records descriptions and tracking capabilities and makes NHII conceivable.

Records managers should look to technology to provide efficiencies throughout the information lifecycle. Using technologies to intelligently identify records that can be purged and/or destroyed, will improve staff efficiencies and lower costs associated with managing vast amounts of medical records. Automating records retention, and ultimately records destruction, also provides big gains in efficiency and cost.

Comprehensive health information management goes beyond technology and the challenges are significant. By 2002, only 14% of U.S. hospitals had implemented some form of EHR.¹⁶ Information workflow and policies will also have to change and be updated to accommodate new availability and demand for information.¹⁷ The AHIMA e-HIM task force notes, "Business process redesign and an understanding of the change management process are fundamental to this activity."¹⁸

New constituents for medical records will emerge. As was discovered with the adoption of PACS, information access takes on a momentum of its own:

*"Stovepipe systems are effective, but once practitioners become accustomed to incremental information access, their next logical desire is for sources of information to come together, to present a cohesive view of patient care."*¹⁹

The management of active and inactive (archived), chart-complete medical records ultimately will be integrated with the management of a patient's on-going treatment information. As much as possible, active and archival records systems need to be flexible to accommodate future growth and change, provide detailed descriptions of the data, and be built on an infrastructure that can provide the access to different constituents as policy allows.

Summary

The volume and type of U.S. health information is experiencing accelerated growth. A significant portion of this information will continue to be paper and film-based for some time to come. The increasing volume, combined with the expanding "lifecycle" and wider use of chart complete and still active medical records, demands more efficient records management solutions. In order to reap the benefits of comprehensive information management, integrated health records management strategies, which consider both physical and electronic records, will be required.

There are several important criteria when considering the records management component in a hybrid environment. It is important to have well-indexed physical and electronic medical records systems which provide detailed content descriptions of the health record. These descriptions must be available to an increased constituency in a distributed environment. Status and tracking of records and components, i.e. where they are and who checked them out, will increase in significance. The capacity to scale and to incorporate, or at least interface with, evolving EHR systems is becoming critical. Archiving and secure destruction of records will still be required.

The evolution of records management and the emergence of genuine fully electronic health records will change healthcare workflow and professional roles. Healthcare Information Managers need to plan early for the adoption of these systems. A strategic perspective that takes a realistic approach to integrated records management is required to reap the full benefits of Comprehensive Health Information Management.

VOCABULARY

American Health Information Management Association (AHIMA): AHIMA is the premier association of health information management (HIM) professionals. AHIMA's 50,000 members are dedicated to the effective management of personal health information needed to deliver quality healthcare to the public. Founded in 1928 to improve the quality of medical records, AHIMA is committed to advancing the HIM profession in an increasingly electronic and global environment through leadership in advocacy, education, certification, and lifelong learning. www.ahima.org

American Medical Associate (AMA): Voluntary association of physicians in the United States which sets standards for the medical profession and advocates on the issues vital to the nation's health.

Clinical Decision Support Systems (CDSS): Electronic aids to physicians on the front end of treatment, but obviously must access "incomplete/active" records. In very early stages.

Clinical records: Generic reference, includes all physician notes, diagnostic test results, and treatment plans on the front end.

Computerized Physician Order Entry (CPOE): Where transcribing from physician dictation is being replaced by text and voice recognition technologies.

Centers for Medicaid and Medicare Services (CMS): Federal organization for the distribution of Medicaid and Medicare monies. Used by the Federal government to spur healthcare initiatives, such as standardized coding of medical procedures.

Digital Imaging and Communications in Medicine (DICOM): Voluntary, vendor initiated diagnostic imaging standard used widely in Picture Archiving and Communications Systems (PACS).

Electronic Health Records, (or Electronic Medical Records) and Electronic Health Records Management (EHRM): A Federal initiative, national network of health records, such that any citizen can be treated anywhere with the accurate medical information. Theoretically it would include incomplete, active, and stored medical records information. Latest Federal stance is they want a "bottoms up" approach, with small grants and small incentives for individual hospitals and regions to attempt small scale EHR systems. AHIMA defines EHRM as: "the process by which electronic (e.g., digital) health records are created or received and preserved for evidentiary (e.g., legal or business) purposes."²⁰

Health Information Management (HIM): Effective management of health data and medical records needed to deliver quality health care to the public. Historically medical records have been paper-based. Now the industry is moving to a fully electronic future.

Health Level 7 (HL7): Health Level Seven is an American National Standards Institute (ANSI) - accredited Standards Developing Organizations (SDOs) operating in the healthcare arena. According to the HL7 site <http://www.hl7.org/>, their mission is: "To provide standards for the exchange, management and integration of data that support clinical patient care and the management, delivery and evaluation of healthcare services. Specifically, to create flexible, cost effective approaches, standards, guidelines, methodologies, and related services for interoperability between healthcare information systems."

Healthcare Information Technology (HIT): Broader term roughly equivalent to IT in the enterprise space. Related terms: Healthcare Information Management (HIM); Healthcare Information Systems (HIS).

Health Information Technology Resource Center (HITRC): An arm of the Agency for Health Care Research and Quality (AHRQ) to promote technology standards and adoption.

Health Insurance Portability and Accountability Act (HIPAA, 1996): Plethora of information on HIPAA, but one of the most authoritative is offered on the Federal Department of Health and Human Services, Civil Rights website: <http://www.hhs.gov/ocr/hipaa/>

Healthcare Information and Management Systems Society (HIMSS): “HIMSS is the healthcare industry's membership organization exclusively focused on providing leadership for the optimal use of healthcare information technology and management systems for the betterment of human health. Founded in 1961 with offices in Chicago, Washington D.C., and other locations across the country, HIMSS represents more than 15,000 individual members and some 220 member corporations that employ more than 1 million people. HIMSS frames and leads healthcare public policy and industry practices through its advocacy, educational and professional development initiatives designed to promote information and management systems' contributions to ensuring quality patient care.” <http://www.himss.org/ASP/index.asp>

'Incomplete' vs 'complete' but still 'active' records. Complete records have been passed to the records management department after the 'episode' has passed and they have been paid – but would still need access for various reasons. Medical professionals will understand incomplete vs complete, passed to records department, episode has passed, billing has been coded and paid.

Integrated Health Delivery Networks (IHDN): Hospitals that cooperate to purchase or deliver healthcare, often not for profit hospitals. Growing trend of cooperative or integrated healthcare systems that cooperate to pool purchasing power and/or share resources, i.e. Advocate, Tenet, HCA.

Joint Commission on Accreditation of Healthcare Organizations (JCAHO): Accredited Standards Developing Organizations (SDO)

Master Patient Index (MPI): The Master Patient Index is a manual card file or computerized system that contains information on all patients treated by a health facility.

Medical Records Institute (MRI): “The Medical Records Institute's (MRI) mission is to promote and enhance the journey towards electronic health records, e-health, mobile health, and related applications of information technologies (IT).” <http://www.medrecinst.com/index.asp>

National Alliance for Health Information Technology (NAHIT): “The National Alliance for Health Information Technology is a diverse partnership of leaders from all healthcare sectors working to advance the adoption and implementation of healthcare information technology to achieve measurable improvements in patient safety, quality and efficiency.” <http://www.nahit.org/alliance2/index.do>

Personal Health Records (PHR): A subset of Electronic Health Records, available to the patient for their insight and contribution to their own healthcare. Obviously more future-oriented and controversial.

Picture Archiving and Communication Systems (PACS): “PACS is an enabling combination of technology (hardware, software, and communications systems), integration, workflow transformation, and cultural change in the perception, manifestation, and delivery of radiology services.”²¹

Release of Information (ROI): Process of providing documentation within a medical record to a certain individual, physician, attorney, or authorized requestor. To protect patient privacy, medical records should not be released without a written, completed authorized form.

Snomed CT: An ANSI accredited Standards Developing Organization (SDO), working for a clinical vocabulary standard.

Unit Patient Record (UPR): Derivative of electronic medical record, perhaps for single hospital or organization.

FOOTNOTES

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- ¹⁷ Interestingly, increased output on paper is an underestimated challenge of greater information availability. In "lessons learned" by AHIMA professionals who had installed electronic information management systems, 3 of 9 mentioned the challenge planning and implementing viewable and printable formats for the distribution of health records to different constituents. "The Strategic Importance of Electronic Health Records Management: Checklist for Transition to the HER", AHIMA Work Group on Electronic Health Records Management. *Journal of AHIMA* 75, no.9 (October 2004): 80C-E
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