EHR's Impact on HIM Functions

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In the past a typical student project was to draw a floor plan for the ultimate HIM department. Future departments may not necessarily be described through physical dimensions. In fact, as more data and records become electronic, the need for physical space will decrease.

Many HIM departments are already partially virtual or in a hybrid state. Transcription and coding, for example, are often outsourced or home-based. While these functions are still integral to healthcare delivery, they do not need to take place within the organization.

HIM will continue to be a necessary component of healthcare organizations, and functions will vary by organization, as many do now. Some functions will continue, some will vanish, and some new ones will emerge. This practice brief outlines how traditional HIM functions will be transformed as we journey toward the electronic health record (EHR).

HIM: Key to the EHR

Some administrators have stated that in the future the EHR will eliminate the need for the HIM department, its services, and functions because the paper record will be gone. While the HIM department and its functions will certainly change, the reality is that maintenance of the EHR and its byproducts will require the expertise of HIM professionals. Many of the qualities needed to manage the paper medical record are the same qualities required to manage the EHR. Attention to detail; ability to compare competing data sources and reach a conclusion about data accuracy; project management; creative problem solving; categorization of data; data reporting; evaluating, understanding, and interpreting regulatory standards; and the many other skills that HIM professionals possess will be critical to maintaining an accurate and functional electronic medical record.

Both the electronic and the hybrid record affect HIM functions. The following table outlines the transformation that occurs in HIM functions from the paper-based state through the hybrid transformation into the fully electronic health record. It reflects what has happened in many healthcare settings where the migration to the EHR has occurred or is in progress. Therefore it is more factual than predictive in content. The table outlines where functions appear and disappear, as well as how and where transformation will occur. It may also be used to identify opportunities for transforming HIM functions to improve patient care.

The transformation of HIM functions is not always easy. The path of change, especially in the hybrid record environment, has many different twists. There is no one right way to do things. The changes will not always be efficient or perfect—in fact, it will be downright difficult and ugly at times. HIM professionals can use this document to understand the future, measure their progress, and explain and lead the transformational journey within their organizations.

Function	Paper Health Record	Hybrid Paper-Electronic Health Record	Electronic Health Record

Abstracting data elements	Manual or data entered into computerized system	Function could be minimized due to initiation of structured data collection through online forms and data entry templates for documentation at the point of care. HIM involvement needed for the process of designing and revising forms to meet data collection, regulatory, and bylaw needs.	Function could be completely eliminated if automated data capture implemented (except for free-form documentation, such as narrative notes, dictations, and natural language processing). HIM staff may be qualified to perform data analysis and data administration or verification and reporting. Documentation templates may be developed to conform with state, federal, tribal, and local laws.
Admission and discharge processing and reconciliation	Accounting for records to ensure 100 percent retrieval of cases for filing and coding; function performed by clerks.	Accounting for paper records to ensure 100 percent retrieval of cases for filing portions of paper record, scanning, and coding; function performed by clerks or scanning staff.	Accounting for paper records received from external sources for scanning; function performed by scanning staff. Online reconciliation of cases for revenue stream; function performed by coders.
Adoption record change	Minimal	Minimal	Minimal
Analysis (or deficiency analysis)	Manual assessment for compliance with regulatory and internal medical staff bylaw requirements.	Assessment rules and rules to force completion will begin to be developed, with some analyst work reduction. Opportunity to reallocate staff to preadmission analysis via work queues (e.g., ensuring H&P is adequate prior to surgery or MD orders complete for nursing home or rehabilitation facilities). Physicians will receive electronic notification of incomplete items in the health record.	Function should be minimal because of automated rules. In the absence of rules, HIM staff will need to check documents (e.g., handwritten documents, voice recognition, dictations). Physicians will receive electronic notification of incomplete items in the health record.
Assembly of paper record	Manual	Manual for remaining paper documents	Staff may be redeployed for document preparation, indexing, imaging, and quality control.
Back-up, downtime, and recovery processes	Paper-based charts used	Organizations must develop a plan for worst-case scenarios when the EHR is unavailable; HIM staff should coordinate daily system disaster plan (e.g., printing of key documents, maintenance backup, paper systems, coordination of data entry or scanning of key data elements after unplanned down times). Necessary forms revert to paper processes and must be readily available. Staff must be trained in their use.	Same as hybrid state. The backup system could be a CD with appropriate documents that can be accessed from a local drive rather than the network. Down time processes could include use of PDAs or tablet PCs with uploading of data when the system has been recovered.

Birth and death certificate preparation	Conduct interviews, collect data, type, fill out paper forms or electronic submissions, and obtain signatures required by state law	Clerical staff may continue to abstract and collect data for vital records. However, state or county laws may mandate use of an electronic data submission process. Electronic data submission processes may not require validation by provider. Birth facility may continue to prepare and provide a signed paper document to parents.	Same as hybrid state
Charge description master (CDM) administration	Function is moving into the realm of HIM department to ensure accurate and timely codes and updates.	HIM staff ensure accurate and timely codes and updates and begin to link codes to online-structured documentation. Staff test and verify mapped codes.	HIM staff ensure accurate codes and maintenance updates are performed on time and continually link codes to online-structured documentation. Staff test and validate mapped codes and application software. CDM will be linked such that there is notification when changes occur.
Charge ticket verification	Some HIM departments manually verify all charges on charge ticket against documentation.	HIM staff validate mapped codes, some manually and some online based on location of documentation. Super bills may be created by physicians or specialty clinics and are maintained and updated on a regular basis.	Computer-assisted coding will continue to require validation of structured documentation against unmapped codes and validation of unstructured documentation against charges. If computerized physician order entry and medication administration record are implemented, this could become completely automated.
Coding and documentation training for all providers (physicians, nurse practitioners, physician assistants)	Provider training for documentation and relationship to coding is rudimentary, generally focused on specific providers or disciplines where reimbursement is a concern. Query process for providers for additional documentation of information is typically done on paper.	Same as paper record	Number of positions will increase as traditional coding positions decrease. Function is critical to ensuring that charge description master and documentation templates correspond to internal and external reporting require-ments as well as billing. HIM staff should educate clinicians on changes and develop and maintain templates and charge capture process to ensure accuracy of coding and documentation. Query process for providers requesting additional documentation or information will be automated.
Coding CPT	Manual assignment using books or encoders, often done outside HIM department.	Transition to coder-managed chargemaster would eliminate need for manual code assignment. Auditing function will still be needed to ensure charges are entered for all documented services rendered.	Coding may be automated. Validation of charge capture against documentation still required. Auditing or coder intervention for ad-hoc documentation required. Reduced staffing expected.

Coding: E/M and physicians at teaching hospitals	Manual	Manual	Function will change focus from coding all procedures to validation and comparison of document and computer-suggested codes.
Coding ICD-9-CM, ICD-10-CM, ICD-10-PCS	Use of books or encoders. Paper documents are the source of information.	Function moves toward automated encoding as online medical record systems support functions that are computerized.	Computer-assisted coding could change coding to become more of an auditing function to ensure full capture of all codes, especially from free-form sources such as natural language processing; SNOMED-CT use adopted for data reporting and research. As clinical care is documented by providers in an EHR, SNOMED-CT codes are automatically applied, and mapping tables are used to identify related codes in another terminology. As rules-based maps are developed for multiple-use cases and become increasingly sophisticated, the level of human review at the individual code level will diminish and human roles will primarily be focused on the development and maintenance (including quality control) of maps for a variety of use cases and the development of algorithmic translation and concept representation. Availability of computer-aided coding applications would relieve the shortage of expert coders and enable them to perform other critical data management roles in the electronic HIM environment. ICD-10 coding will be important as a global tool.
Data quality, integrity, and reconciliation processes (including EHR and other specialized application work queue management)	Verification of computer reports and statistics against paper record and reports.	HIM staff begin online reconciliation of autogenerated reports and monitor parts of the EHR such as inboxes and failed interface report transfers (e.g., documents from transcription or laboratory systems that fail to post in the EHR).	Function will fully transition from paper verification to computer-based reconciliation of EHR functions and work queues. Patient-entered data will include entering results of self-monitored clinical data (such as daily blood pressure), registration data verification, and registration for appointments and tests. Insurance verification will be completed automatically during the preregistration process. Patients without coverage will automatically be directed to a financial counselor.
Data reporting and interpretation	Ad-hoc and routine reporting	Function will begin transition to ad-hoc reports and data mining. Methods will be required for	Data interpretation and data mining skills will be new focus. Healthcare organizations will need staff that

		tracking inception, revisions, and deletions of specific online-structured data fields that are a component of the EHR.	understand coded data and classification systems for efficient data mining, accurate reporting, and interpretation as well as development of metadata definitions. Relational database management skills will be needed. The healthcare world will move toward disease management, where the patient is managed across the healthcare continuum and health problems are identified more quickly. Healthcare data will be used as the basis for developing treatment protocols and critical pathways for disease management.
Denial management	Manual	May include both manual and electronic follow-up	Activity could be minimized if improvements are made in health plan and benefits validation programs or claims processing programs and charge description master software become more sophisticated. Audits may be done virtually. With electronic provision of required documents, turnaround time should decrease.
Document and records management	Primary focus is paper medical record and some required logs and registers.	As focus moves away from paper medical record management, time shifted to assume organization-wide document management functions, including processes to eliminate shadow medical records, radiographic images, photographs, patient videotapes, business document imaging, image reproduction, retention, storage, access planning, record organization, and data collection.	Same as hybrid record
Document identification	Often manual; a key component of filing paper.	Function will transform to bar coding, indexing methods, or optical character recognition as appropriate for the electronic systems implemented (such as document imaging). The process must ensure correct posting including date of service, correct patient, or document type.	Process expands from the hybrid state to all documents in the EHR. There should be monitoring to ensure correct posting of electronic documents.

Document preparation, indexing, and scanning	Document repair only; performed as part of record assembly.	Function requires manual preparation of documents, except those that are COLD fed (come directly into the EHR electronically). Decisions must be translated into policy and procedure for which documents are to be scanned.	Generally this function includes only paper documents received from external sources. This will continue as long as paper documents need to be part of the EHR. It should decrease as interoperability allows more document exchange electronically.
Documentation improvement training	Minimal except for coding training. It has increased with programs such as DRG Assurance or through correct E&M coding initiatives	Same as paper record	Function will decrease as structured forms or data fields are designed to capture regulatory and billing needs. HIM staff should ensure rules and structured data fields meet regulatory needs. Automated tools will allow online queries of and by providers. Online tools should provide training 24 hours a day, seven days a week through real-time feedback.
DRG or documentation auditing program	Manual	Function consists of a combination of manual review of paper records and review of electronic documentation	Daily concurrent follow-up should be minimized as templates and rules are implemented. Initial review will be necessary if the primary document is the unstructured H&P. This could be performed remotely.
Filing records	Manual	Some manual filing may remain through the transition state.	Function eliminated as move to EHR is completed.
Filing reports concurrent (charting)	Manual	If printed record is maintained, some printing and filing will be necessary. But activity will be reduced as documents become available electronically.	Function eliminated. Staff can be redeployed to prepare documents for scanning, indexing, and other activities in that process.
Filing reports retrospective	Manual	Manual for paper record, but potentially only key documents during transition to fully electronic health record.	New function will be resolution of electronic documents and reports that cannot be matched to a record. The frequency of this activity is dependent on system activity and mismatches.
Form and template design	Function includes standardization of data elements, placement (format), logical flow for data capture	Function includes screen design and data field definition and print formats as well as develop-ment of standard online data collection procedures and data dictionary definitions. Processes for requesting and implementing new forms will be standardized to optimize use of existing data.	Same as hybrid record. Data dictionary will encompass all medical documentation.
Imaging	Minimal	Function will significantly increase during transition to hybrid state and then to a fully electronic health record.	With most documents online imaging will be a function to capture temporary forms and external records only. HIM advisory role will develop

			for imaging acquisitions and implementation for business records. Imaging may become minimal as external documents become available electronically.
Master patient index (MPI) maintenance	Manual or electronic, including card file and online systems; may be limited to HIM applications.	Function will expand to system-wide database coordination for integrated EHR. For reasons of patient safety, dedicated MPI reconciliation staff may be required to maintain up-to-the-minute patient identifiers. Roles will likely expand to person identity management (guarantors). Number of disparate systems with patient information will increase the number of staff dedicated to this function. Number of staff will also be influenced by enterprise medical record number needs for integrated health systems. Staff will monitor medical record number and correct source documents with accurate number.	Positive patient identification at the point of registration may reduce staff dedicated to this function, but this depends on the size of immigrant and transient populations. Popula-tion predictions for the next 25 years forecast that immigrant populations will continue to have larger families, so there will be continued MPI challenges, especially in the pediatric population. Computer algorithmic scripts will need to be implemented that run on a concurrent basis to identify duplicate registrations (or possible duplicates). Pictures of patients may be included in the EHR to ensure identification.
Ongoing record review	Manual	Function will extend to paper and online records.	Function should decrease with use of templates, alerts, and reminders. It will likely be based on exception reports for items designated for review using autogenerated reports for review. Focus will shift to follow-up as reporting becomes routine.
Reconciliation of inboxes and other online files	Does not exist	A concurrent monitoring program of all systems concurrently should be developed, and HIM staff should perform reconciliation to ensure system files are complete and accurate.	Same as hybrid record
Record completion process	Manual	As electronic signatures are implemented, completion could be accomplished remotely.	Rules will be in place for automated monitoring of unsigned reports, monitoring of unreviewed results, and missing reports.

Registries, specialized (cancer, cardiac, PICU, trauma, Alzheimer's)	Manual or computerized	HIM staff should be able to gather data from the EHR if rules are implemented identifying cancer cases requiring physician staging. Staff may continue to submit paper to state registries until they are able to accept data electronically.	HIM staff may continue to submit paper abstracts depending on state registry computerization. Staff could fill out abstracts online and submit electronic data transfer from health facility data repository or warehouse to state system. Data will be coded in SNOMED-CT or ICD-10 so information can be translated in a global environment.
Release of information for continuity of care	Manual	Manual for caregivers without remote access or without privileges.	Protocols will be developed to provide electronic versions of information that can be shared as appropriate. This could be made available as a read-only version or placed in a queue with a specific date by which it is no longer accessible.
Release of information, other	Manual	Manual, but will begin process of identifying methods to allow access to both paper and electronic record.	HIM staff will continue to assist external sources needing access to PHI through batching individual or groups of records, setting up and monitoring work queues, and tracking disclosures. Depending on state law, organizations may be able to eliminate paper records for legal purposes (e.g., court) and provide a view that is certified as a legal copy using an electronic signature.
Release of information to patients	Manual	Function may continue to be manual. There may be new responsibilities assisting patients with access to their information through a secure Web site or portal.	HIM staff will continue to assist patients to access records through Web site as well as in paper for those without computer access. New process of assisting patients moving data from the main medical record to the personal health record will emerge. Staff will continue to assist court system and other external requests needing certified copies. Paper copies may continue to be generated but should be reduced as interoperability progresses and patients are able to access EHRs. Electronic signatures may be developed that signify a view as certified for legal purposes.
Retrieving records	Manual	There will be reduced record pulling as records are scanned or online documents become available, but function will be needed for historical files not yet	Function eliminated except for historical files maintained in paper or on microform.

		scanned (if there is a decision to scan old files). Physicians may be asked to identify information from paper charts that should be scanned to eliminate the need to pull same paper chart at a future date.	
Revenue stream management (DNFB, charge entry, provider completion of documentation; organization of follow-up efforts)	Manual	Function will include more online management through computer-generated reports using logic rules.	The revenue cycle should be managed completely online.
Security, clinical access by users to the health record	Manual	Function will be performed manually and online through the use of role-based, context or individual access rights to clinical information. There will be increased emphasis on auditing access history to ensure adherence to policies.	Routine auditing and monitoring of access history will be in place.
Statistics	Manual	Function will be performed manually, though some statistics will be produced through automated reporting tools.	Function will include increased use of dashboard and other types of automatically generated statistical reports.
Transcription, natural language processing, direct charting by clinicians	Manual	Addition of processes such as natural language processing to support creation of the EHR will begin. HIM roles include training staff, system administration, development of templates, monitoring accuracy, and a new role for transcriptionists as document editors.	There is potential for reduced transcription staff due to use of natural language processing (NLP), direct charting, and point-and-click charting by clinicians. There will be a potential of increasing the number of typed documents and shifting available transcriptionists to NLP editing or other situations in which structured notes may not be appropriate.

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