Data Content for EHR Documentation

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Structured data enhance the flow of information into an electronic health record (EHR), enable computer-assisted coding and natural language processing software applications, and speed the implementation of health information exchange. HIM professionals play a critical role in managing the quality of health information and must be actively involved in the standardization of data content for EHRs.

Health information managers must understand the purpose of data standards and demand that those standards are met when selecting systems for their organizations' EHRs. If standards are not used, HIM professionals cannot manage the information with the required level of expertise. Lack of knowledge and standards will lead to substandard EHR systems and substandard health information.

HIM professionals must also know where documentation resides and what kind of documentation their organizations maintain in order to effectively manage information in an electronic environment as well as deal with other emerging issues such as compliance with the electronic discovery rule, maintaining guidelines for EHR documentation, and determining the legal electronic health record.

This practice brief guides HIM professionals and organizations in selecting and developing documentation applications for health information systems. It is intended to be used in conjunction with the document titled "Data Elements for EHR Documentation," available online in the FORE Library: HIM Body of Knowledge at www.ahima.org.

Sample Data Dictionary

Data Element	Variables (Attributes)	Descriptions	Data Type	Format
Medication name	<medication tables>	Name of the medication (name brand or generic	Text	Alphanumeric
Dosage		Medication dosage prescribed	Text	Alphanumeric
Quantity number		Number or volume of medication dispensed	Text	Numeric
Quantity form	Caplets Capsules Oral suspension Injectable Drops Cream Nasal spray Metered-dose inhaler	Form in which the medication was dispensed	Coded values	Alphanumeri
Frequency	BID TID QID	Frequency of medication administration	Coded values	Alphanumeric
Start date		Medication start date	Date	DD_MM_YYYY
Stop date		Medication stop date	Date	DD_MM_YYYY
Prescribed by		Name and credentials of provider who prescribed the medication	Text	Alphanumeric
Prescription date		Date medication prescribed	Date	DD_MM_YYYY
Prescription number		Unique identification number assigned to the prescription	Text	Alphanumeric

Pharmacy	<local pharmacy data>	Name of pharmacy where prescription was filled	Text	Alphanumeric
Allergic reaction		Description of allergic reaction	Text	Alphanumeric
Source(s) of medication list	Pharmacy Patient Primary care physician	Source(s) from which the patient's medication list was collated	Coded values	Alphanumeric

Establishing a Data Dictionary

A data dictionary is a:

> file that defines the basic organization of a database. A data dictionary contains a list of all files in the database, the number of records in each file, and the names and types of each field. Data dictionaries do not contain any actual data from the database, only book keeping information for managing it. Without a data dictionary, a database management system cannot access data from the database.[1]

Data dictionaries promote data standardization, which is necessary for ensuring accurate interpretation and exchange of health information. Data dictionaries are typically developed at the database management system and organizationwide level. Organizationwide definitions of data content for EHR systems promote data quality through data consistency across the organization.[2]

A typical data dictionary contains the following information:

- Table name
- Attribute(s) or field name(s)
- Attribute description(s)
- Attribute data type (text, number, date, et cetera)
- Attribute format
- Attribute size (such as number of characters)
- Range of values
- Whether an attribute is required
- Relationships among attributes[3]

HIM professionals must understand what a data dictionary is and what it contains. They should also help evaluate the EHR system's data dictionary to confirm that the necessary information required for patient care is present in the EHR.

The "Sample Data Dictionary" [above] provides a snapshot of the type of information in a data dictionary.

The Importance of Data Content Standards

Data shape and define an organization's standards for practice and management of health information. Data also play a key role in the EHR's lifecycle as well as throughout its ongoing use. Data within the EHR can serve many purposes, including biosurveillance, public health reporting, and performance measurement.

During the EHR selection process, it is essential to assess the system's capabilities to capture and maintain key data, such as those described in the accompanying online document "Data Elements for EHR Documentation." In addition, the methods for collecting and maintaining these data will affect providers at the point of care and departments such as HIM, risk management, IT, and administration. Everyone within the organization should have a clear understanding of the data definitions and their intended use (e.g., chief complaint versus reason for encounter).

For instance, if an organization routinely uses terms such as chief complaint and pulse (two of many elements that should be considered), selecting a system that uses reason for encounter and heart rate may lead to confusion. To minimize disruption for end users during implementation, training, and go-live, it is essential that all users have a clear understanding of the data fields and their definitions to ensure a smooth transition from the paper to electronic environment. Transitioning to an EHR will

require a major culture change, so adapting as many attributes as possible in the current environment helps ease the transition and implementation phases.

When moving into the system build and implementation phases of the EHR, data standards are crucial as the organization builds rules for clinical decision support, computerized physician order entry, alerts, and templates for clinicians at the point of care. In turn, data standards help ensure consistency in the flow and processes of data capture that ultimately affect the management of health information.

For instance, if nurses or physicians have been documenting patient encounters using the same form, method, and terms for years, a drastic change in the data names could slow down their process, interrupt patient flow, and lead to resistance to the EHR. To ensure patient information is collected and analyzed by the system correctly, keeping the data content as consistent as possible is key.

Data Standards Developing Quickly

Development of data standards is an ongoing effort, and current initiatives are under way to formalize the structure and format for data within EHR systems. The HL7 Clinical Document Architecture is currently being leveraged through the creation of implementation guides for common types of transcribed documents, such as the history and physical, consultation report, and discharge summary. This consensus-based effort will establish a standard for electronic document formats and create consistent electronic documents for importation into EHRs and use within health information exchange initiatives.

ASTM International has also developed standards that promote standardized EHR documents. The Standard Specification for Health Document Formats (E 2184-02) addresses the requirements for headings and appearance of sections and subsections in healthcare documents, no matter how the document is generated or displayed. Although this is a published standard, ASTM is in the process of further developing the standard to incorporate specifications for additional document types and include additional technical details (e.g., LOINC section codes and SNOMED CT codes).

Standards like these will bridge the gap between narrative, text-based documents and the structured, computable data within an EHR. It is important for HIM professionals to monitor and provide input to standards that affect the structure and content of clinical documents. These efforts will guide the collection of key data, which will improve organizations' ability to capture information for decision support, computer-assisted coding, and data-mining activities in the future.

Data Content for EHR Documentation

Health records contain a wide range of information, but most information within a health record can be grouped into two main categories: administrative or demographic data and clinical data.[4] Although EHRs are primarily data-centric rather than document-centric, the question remains about how information should be displayed for patient care, information exchange, and so on.

This practice brief focuses on defining clinical data content for the history and physical report, consultation report, operative report, and discharge summary. It is important to note that the use of terms such as history and physical and discharge summary have historically referred to a precise document. In this brief, these terms refer to the content found in these documents, not a specific report.

These particular document types were selected due to their application across multiple care settings and existing industry guidance. Existing data standards, sample documents, and industry publications were evaluated when determining the recommended data content.

Although most institutions already have established documentation practices, we highly recommend that healthcare organizations evaluate the data content defined by this article to identify potential gaps or inconsistencies in current documentation practice.

History and Physical

A history and physical (H&P) is a two-part medical report that documents the current and past conditions of the patient. The history is a summary of the patient's illness from his or her perspective. The physical examination contains the physician's comprehensive assessment of the patient, which serves as the basis for the clinical impression and initial treatment plan.[5]

A review of standards, sample documents, and industry publications indicates that a standard history and physical should include the sections defined in the H&P sections of the data content resource document accompanying this practice brief.

Joint Commission standards do not outline the specific content of the H&P, but they do recommend defined organizational policies and procedures regarding the specific data that should be included in an H&P document.[6]

Although there are many factors that contribute to appropriate CPT evaluation and management coding assignments, it is clear that an H&P report should include chief complaint; history of present illness; review of systems; past, family, and social history; physical examination; and impressions to comply with documentation requirements.

The level of evaluation and management complexity is based on the amount of information (number of elements) obtained and documented by the physician.[7]

Consultations

Consultations allow healthcare providers to obtain additional opinions from specialists. The consultation report is very similar to the history and physical; however, the consultation report must include information about the source and reason for the request, evidence that the consultant reviewed the patient's medical record and examined the patient, and documentation of his or her pertinent findings, opinions, and recommendations.[8]

New Challenges, New Focus

HIM professionals have a long history of managing personal health information to deliver quality healthcare to the public. However, managing health information in an increasingly electronic world requires new knowledge and skills, which HIM professionals must deliberately cultivate. The e-HIM® environment has also brought about new issues for which HIM professionals must keep current.

AHIMA has recently published practice briefs on many of these new issues, including:

- "The New Electronic Discovery Rule" in the September 2006 *Journal of AHIMA*
- "Guidelines for EHR Documentation to Prevent Fraud" in the January 2007 *Journal of AHIMA*
- "Data Standards, Data Quality, and Interoperability" in the February 2007 *Journal of AHIMA*
- "The RFP Process for EHR Systems" in the May 2007 *Journal of AHIMA*

Another issue on AHIMA's radar screen is the need to define the legal electronic health record, which you can read about in the *Journal's* "Legal e-Speaking" column. Look for more articles on these emerging issues in the upcoming *Journal of AHIMA*.

Operative Report

The operative report documents the significant procedures performed during the hospital stay. A significant procedure is one that is surgical in nature, carries a procedural risk, carries an anesthetic risk, and requires specialized training.[9]

Further, the Joint Commission's Information Management Standards indicate that the operative report should include:

- The provisional diagnosis recorded prior to the procedure
- The name of the licensed practitioner and assistants
- Procedure performed
- Description of the procedure
- Findings

- Estimated blood loss
- Specimens removed
- Postoperative diagnosis[10]

The Medicare Conditions of Participation require that the operative report be written or dictated immediately following surgery and include the techniques used, findings, and tissue removed.[11]

Discharge Summary

The health record must summarize the patient's condition at the beginning of treatment and basic information about tests, examinations, procedures, and results occurring as a result of treatment. The conclusion at termination of care is called a discharge summary.[12]

According to the Joint Commission, a discharge summary providing information to other caregivers and facilitating continuity of care includes the reason for hospitalization; significant findings; procedures performed and care, treatment, and services provided; the patient's condition at discharge; and information provided to the patient and family, as appropriate.[13]

The discharge summary should also include the final (principal) diagnosis and any other diagnoses as well as the principal and other procedures.[14] The Medicare Conditions of Participation require that the medical record have a discharge summary with outcome of hospitalization, disposition of case, and provisions for follow-up care.

Conclusion

Standardizing data content is a key component of an EHR implementation and will help HIM professionals effectively manage health information for quality patient care. HIM professionals and organizations should take the following actions in order to ensure the proper data content within the EHR system:

- If you are involved in EHR selection and implementation in your organization, assess the vendor system's capabilities to capture and maintain key data content.
- Review the data content in the corresponding online document and compare it to existing documentation practices within your facility.
- Stay abreast of data content standards development activities within the industry. Watch for AHIMA Advantage E-alerts and Journal of AHIMA articles on the topic.
- Share this information with the data dictionary project team within your organization. If a project team doesn't exist, discuss the need for such a team and offer to lead the effort.
- If your organization has implemented an EHR system, evaluate how data are currently captured in EHR documents and analyze the technical and procedural changes required to conform to industry standards.

Notes

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