Unraveling the Data Set, an e-HIM Essential

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There is a great deal of talk about healthcare data and its potential uses once providers have implemented an EHR system. Without question, an EHR will collect more data in terms of volume. It will also, through standard clinical terminologies, capture a more granular level of detail. The data set, an e-HIM® essential, will help HIM professionals manage the potential for data overload.

Data Set, Data Standard

A data set is a list of recommended data elements with uniform definitions relevant for a particular use. An Institute of Medicine report describes a data set similarly, with the additional qualifier that data elements are chosen for a specific clinical purpose, such as patient safety.[1] Data elements are found in data sets and data standards. The owner of the data set decides which data elements to include and what the definition of each data element should be. These decisions are based on the purpose for which the data set was formed. The outcome is a standardized data set but not a data standard.

Data standards are about the standardization of data elements.[2] They provide the ability to record a certain data item in accordance with the agreed-upon standard. However, as noted in last month's column, no nationally agreed upon data standards exist.

For example, the Uniform Hospital Discharge Data Set (UHDDS) has been a Department of Health and Human Services policy since January 1, 1975. It was created to specify standard definitions that facilitate collection of uniform and comparable inpatient information from acute care short-term stay hospitals. UHDDS is a standardized data set, but the data elements within it are not data standards. Data element 03, Sex, has a definition of male, female, and no value. In the Medicare Quality Monitoring System, this same data element for the patient's sex has allowable values of M = male, F = female, and U = unknown.

Types of Data Sets

Not everyone requires exactly the same set of data. Data sets may be formed for such activities as research, clinical trials, quality and safety improvement, reimbursement, accreditation, and exchanging clinical information. They may be created internally by healthcare providers, or they may be produced externally by standards development organizations such as Health Level Seven (HL7), government agencies such as the Centers for Medicare and Medicaid Services (CMS), and others.

An internal data set may also be combined with an external data set using decision support systems to yield meaningful performance improvement comparisons. However, performance monitoring and outcomes research may be hindered by a lack of data standards.

Data elements collected as part of the data set may be reused and developed into a secondary data set. For example, UHDDS data elements such as principal and other diagnosis are part of a data set reported to CMS on a healthcare claim used to determine a hospital's payment under the inpatient prospective payment system.

Other data sets for specific settings include the Minimum Data Set (MDS) for long-term care, the Outcomes and Assessment Information Set (OASIS) for adult home care, the Uniform Ambulatory Care Data Set (UACDS) for ambulatory care, and the Health Plan Employer Data and Information Set (HEDIS) for healthcare plans. Nursing has a number of data sets as well. Examples include the Nursing Minimum Data Set (NMDS), Patient Care Data Set (PCDS), and Nursing Management Minimum Data Set (NMMDS).

Another type of data set came about as a result of the HIPAA privacy rule. According to the Department of Health and Human Services, the privacy rule permits the creation and dissemination of a limited data set (that does not include directly identifiable information) for research, public health, and healthcare operations.

The final rule conditions disclosure of the limited data set on a covered entity and the recipient entering into a data use agreement, in which the recipient would agree to limit the use of the data set for the purposes for which it was given and to ensure the security of the data, as well as not to identify the information or use it to contact any individual.

A data set may also be formed to capture the needs relating to healthcare information systems. The Data Elements for Emergency Department Systems (DEEDS) is designed to support the uniform collection of data in a 24-hour, hospital-based emergency department. It provides uniform specifications for data elements that emergency departments may use in their record systems.

Recently, work has begun to identify a set of core data elements necessary for characterizing the national, regional, or local health situation or a specific health problem. The underlying purpose is to have consistent data to enable complete connectivity that facilitates the ability to compile and exchange needed patient information for an authorized organization. Some of these data elements have been defined and grouped into a core data set. One example is the Continuity of Care Record (CCR) data set.

Data Set Use in EHRs

Today, EHR systems should allow for the capture of defined sets of health information, making it easier and less costly to collect and report data. Data sets developed in the paper world are being reevaluated in order to operationalize data measurement elements and translate them into terminology that can be incorporated into EHRs.

Involvement in the management of all this health data will require that HIM professionals possess a solid knowledge of data sets. Obtaining consensus on what data elements should be collected and their definitions in the development of an EHR system with an eye on the HL7 functional model will require HIM professionals to work with those who set standards.

In the end, the use of data sets ensures consistent data collection and reporting. Standardized data sets and data standards will provide information about the effectiveness of interventions and treatments for specific diseases, thereby improving the quality and safety of healthcare, maximizing the effectiveness of health promotion and care, minimizing the burden on those responsible for generating the data, and helping facilitate efficient reuse of data. They will also help to achieve comparability in the health data collected locally, regionally, and nationally for evaluation, quality improvement, and research applications in both rural and urban settings.

Notes

1. Institute of Medicine. “Patient Safety: Achieving a New Standard for Care.” 2004. Available online at www.nap.edu/books/0309090776/html.
2. Ibid.

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