Designing a Data Collection Process

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Types of Data Collection

In any healthcare organization, data is collected in numerous ways for an ever-increasing number of reasons. Data may be collected by a monitoring device directly connected to the patient, or by providers as they make observations or record treatments. Quality improvement activities often call for data collection where observations of activities, timeliness, or satisfaction indicators are gathered. Data may be abstracted from primary sources and collected for unique reporting requirements, such as specialized registries or claims transactions. With the various types of data collected in many different methods for varied purposes, it is not surprising that data collection may have escaped management in the past.

Why Is It Important?

Data collection should be carefully managed in healthcare organizations. Time spent collecting data can consume huge portions of a provider's day -- taking him or her away from more direct patient care activities. Other employees may spend their entire day collecting data. When you consider the cost of data collection equipment, software, employee time, benefits, and other overhead, the price of data collection can add up quickly. And what are you getting for your money? Is the data collected reliable? Is it comprehensive? Does it provide the necessary detail to answer important clinical and business decisions? For the price your facility is paying, the answers to these questions must be yes.

AHIMA's data quality management model depicts data collection as one of the four primary data functions. The others are application, warehousing, and analysis. All characteristics of data quality management should be applied to data collection processes, including:

- Accuracy
- Accessibility
- Comprehensiveness
- Consistency
- Currency
- Definition
- Granularity
- Precision
- Relevancy
- Timeliness

Design Process

When faced with a new application (or use) of data, the following factors should be considered in constructing the data collection for that application:

Accountability

- Who is responsible for coordinating the ongoing data collection process?
- Who is responsible for monitoring the quality of data collection?
- Are the appropriate people involved in the design of the data collection methodology?
- Is the use of the data clear?
- Who will maintain the data ownership record? How will owners participate in the collection process?
- Who will maintain the written data collection process/procedures?

- Are there other potential applications for this data in related or future areas?
- How much time will it take to collect the data?
- What impact will data collection have on staffing requirements?

Data Definition

- What data is required for the application?
- Who owns each data element?
- Is the data currently collected for another application? Is the data collected at the appropriate level of detail or granularity?
- How are definitions for each element determined? What process will be used to modify definitions?
- Who will maintain the data dictionary?
- How will data dictionary changes be communicated?
- Are the data elements uniquely defined?
- Is the source of each data element clear?
- Are there existing standards for the data elements and their definitions?
- What edits are appropriate for each data element?
- Are there restrictions on using existing data for this application (i.e., availability, time, specificity, reliability, definition)?
- Who has access to the source of this data?
- How reliable is the data source?

Process Design/ Standardizing Collection

- Have the data collected been tested to assure that it will meet the application requirements?
- How can collection of this data be incorporated into existing workflows?
- Is the data collection logically sequenced?
- How available are the data at the point of collection?
- Does a secondary process need to be put in place to ensure collection of the data at a later point?
- What training is required for those collecting the data?
- What is the best data-collecting tool?
- Are those tools available for data collection?
- Can the data be collected so that it is available for analysis without further manipulation?

Quality Monitoring

- What percentage of data completion is required for the application?
- What process will be used to monitor quality?
- Will the data be timely enough for the application?
- What incentives can be applied to ensure data quality?
- Will feedback on data quality be provided? How?

Skills Needed

HIM professionals need the ability to:

- Select appropriate team members
- Identify roles and expertise needed
- Utilize continuous quality improvement techniques
- Maintain and foster diverse work relationships
- Manage relationships (i.e., relating to clinicians and the diverse array of employees and departments within the facility)
- Communicate verbally, in writing, and on an interpersonal level
- Conduct group presentations
- Use influence to achieve positive results
- Facilitate
- Initiate improvement

- Lead by example
- Promote utilization of data collected
- Recognize differences in learning and social styles and provide processes to meet those needs

Examples of Reengineering Data Collection

Upon installation of a new clinical information system, one organization decided to take advantage of the increased availability of data to reengineer and improve the quality of data collection. Initially, discharge information was phoned to the admissions office and entered into the system by clerks, causing delayed data availability and increased errors. Nursing staff members were required to enter each patient's discharge date and time, as well as the type of discharge. In order to have them complete the required discharge information, they were trained on the definitions of discharge status in the Uniform Discharge Data Set and instructed on the consequence of data error on payment and outcome reporting.

In order to reduce the data collection time for evaluation of record completion, the director of health information management worked with the operating room staff to capture the results of their preoperative check of record completeness. By improving the data collection tool and standardizing the definitions between the two applications, they were able to concurrently collect information about completeness of history and physicals, preanesthesia assessments, and consent completion -- eliminating a redundant review of information post discharge.

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Related Practice Briefs

Related practice briefs published in the *Journal of AHIMA* are:

- A Checklist to Assess Data Quality Management Efforts (March 1998)
- Developing Information Capture Tools (March 1997)
- Data Quality Management Model (June 1998)

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