Two Educational Approaches to Ensuring Data Quality

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The health information management (HIM) field is growing and changing at a swift pace, with HIM professionals having to navigate value-based purchasing, quality metrics, health disparity and population health studies, and a never-ending stream of Big Data. As experienced HIM professionals know, the data has been big for a long time—it is the use of the data that is evolving and expanding. Meanwhile, HIM educators throughout the country are struggling to prepare students for this brave new HIM world.

Below are two educational approaches—one from a HIM program, and one from a healthcare facility—that helped HIM professionals recognize the need for data quality and ensure it exists in their current and future workplaces.

Approach #1: Baccalaureate Level Education

The program at Ohio State University (OSU) is much like other baccalaureate level HIM programs in that its leaders selected areas of emphasis that go beyond the base competencies and domains required to maintain the program's accreditation status. Areas of emphasis are typically formulated around the skills most valued by prospective employers and the expertise of the faculty. For OSU, those areas are data analytics, database design, reimbursement, and legal topics.

These topics are tied together with a running theme of data and information governance—since analytics without context and subject matter expertise are of limited value. Similarly, not understanding the ramifications of releasing a report that may inadvertently identify a patient can cause tremendous harm. Submitting claims that do not accurately reflect the services provided to the patient may have legal, financial, and ethical ramifications. A HIM professional must be prepared to address all of these issues in the field.

Practical Curriculum Applications

OSU's curriculum includes a second course in statistics and data analytics. During this course, the students perform a data mining project where they assume the role of a consultant assisting a hospital in benchmarking their financial performance in a particular set of cases. The claims data is a subset of the Medicare Provider and Analysis Review File that has been de-identified. Students apply statistical methods to understand the relationship between patient demographics, clinical coding, and resources used to treat the patient.

The concept of prospective payment becomes much easier to understand when the students see that the payment for a case is a function primarily of the MS-DRG assigned to the case and the predicted resources required to treat the patients, and not the actual length of stay or charge. The impact of case mix and the presence or absence of complications and comorbidities are also demonstrated clearly by analyzing the data. The results of the analysis are then pulled together into a final deliverable that is presented in both written and oral form.

The concepts of database design and implementation are presented in a three course sequence. The first course includes project management, software specifications, and the software design cycle. The second course builds on the first by using those concepts to actually design and build a database to support the credentialing of physicians. The students work in teams and each takes the lead in a portion of the development process. The progress of the team is tracked using project management software and weekly updates are submitted to the instructor. During the third and final course in the sequence, students build a scheduling application based on the credentialing database.

This begins with creating use cases for the application and wire framing or mocking up the application prior to starting development. As with the second course, the students are assigned to teams—each student has an assigned role of database

administrator, technical writer, developer, and project manager. The final product includes the database, application, and complete user documentation.

The additional quantitative courses—healthcare finance, reimbursement, and clinical data management—are designed using a similar philosophy. The students are given an opportunity to apply their knowledge and skills to real life applications that they are likely to encounter in the field. All of the courses stress the importance of data integrity and ensuring that valid conclusions are made from the data. Many employers and clinical education sites compliment OSU students for their ability to think critically and handle data using a variety of software programs.

HIM program leaders at OSU are constantly scanning the healthcare environment to see if there are other components that can be added into its already full curriculum. Some of the topics on the horizon: predictive modeling, de-identification of clinical data sets, detecting copy/paste issues in clinical documentation, leveraging the vast array of publicly available data sets and understanding the intricacies of the Centers for Medicare and Medicaid Services' value-based purchasing program.

Approach #2: Leveraging Existing Health Data Professionals

Among healthcare professionals, AHIMA has recognized that data stewards already exist at the operational levels of healthcare organizations. According to AHIMA's new Curriculum Map guidelines, HIM professionals graduating from an associate's degree program (RHITs) may be tasked with the following job responsibilities and should be capable of carrying them out:

- Applying policies and procedures to ensure health data accuracy
- Collecting and maintaining health data
- Validating the reliability and accuracy of secondary data sources
- Explaining analytics and decision support
- Applying report generation technologies to facilitate decision making

During a recent conference call for AHIMA's new Enterprise Information Management Practice Council, a seasoned HIM professional representing a large healthcare enterprise in the process of building a clinical data repository (CDR) reported that data stewards were the easiest data customers or consumers in that they already have identified the data they need to get from the CDR. They are skilled in the verification of their data sets.

Over the course of the conference call, this HIM professional noted that members of her CDR team had all kinds of credentials—RN, RHIA, IT-certified. The stated EHR strategy, such as data extraction for the CDR, involves placing staff in roles that require math and science skills. In this large enterprise, HIM directors are limited to roles involving physician documentation and ICD-10 coding initiatives.

New Roles for HIM

In taking responsibility for the integrity of information in the EHR and in owning the soundness of information in the master patient index, HIM professionals can move themselves into roles managing and controlling not just the structured data items they have always managed, but also the opportunity to manage the metadata that lives behind the EHR and other database structures in healthcare. Programs that teach HIM students to manage metadata and develop data dictionaries and databases, and teach how to build queries against these databases, will give future HIM workers a leg up in the marketplace.

The experience of successfully managing metadata now appears in many new job role requirements. The next step is training HIM professionals to better understand how high-integrity metadata enhances the ability to search and find data. HIM students that arrive in healthcare organizations with the ability to build and support data and metadata integrity across organizations, and who understand Master Data Management professionals and how they function in other industries' organizations, will have the ability to take their efforts involving improved documentation and better coding and stretch them to other areas of the organization. Keeping in mind that the vast majority of information in healthcare organizations is locked in unstructured documents and content types implies that HIM students graduating from bachelor's-level or master's-level HIM programs need to be educated in how unstructured information can be reviewed, such as through natural language processing. Alternatively, HIM professionals need to be trained to structure such unstructured documents to make them findable by those in their healthcare organizations seeking complete information.

Last, but not least, terms like data governance or information governance need to be introduced into HIM training at all levels. The need to "govern" data and information is very popular in information management literature due to the growing need in healthcare organizations to gain competitive advantage through better information management. There is no question that good information governance, including the creation of standards, allows for confident information sharing.

Just as HIM educational programs have responded to the increasing need for more HIM students to master advanced statistical and analytical skills, so will such programs evolve to support the need for students to understand the management of metadata and unstructured information, as well as foster the growing interest in information governance.

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Article citation:
White, Susan E; Nunn, Sandra L.. "Two Educational Approaches to Ensuring Data Quality"
Journal of AHIMA 85, no.7 (July 2014): 50-51.

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