Big Data Requires Information Governance

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By Ann Meehan, RHIA

The term "Big Data" is everywhere, but what is it and what do health information management (HIM) professionals need to know about it? Understanding Big Data in healthcare, ensuring its accuracy, and harnessing it for patient care and business decisions are critical to a successful transition to the various payment reform and patient care models that are surfacing. HIM professionals are a key part of this process. A formalized information management governance program addresses all requirements for managing data, which ultimately becomes information. AHIMA defines information governance as "an organization-wide framework for managing information throughout its lifecycle and supporting the organization's strategy, operations, regulatory, legal, risk, and environmental requirements."[1] In order to ensure information is trustworthy, the data being generated, captured, and used must be trustworthy as well. Information is data in context.

Big Data Basics

IBM states "Big Data is being generated by everything around us at all times. Every digital process and social media exchange produces it. Systems, sensors, and mobile devices transmit it. Big Data is arriving from multiple sources at an alarming velocity, volume, and variety." IBM goes on to say Big Data has actually changed the way people work together in their organizations. "It is creating a culture in which business and IT leaders must join forces to realize value from all data," IBM states. "Insights from Big Data can enable all employees to make better decisions—deepening customer engagement, optimizing operations, preventing threats and fraud, and capitalizing on new sources of revenue."[2]

In order to fully understand the constructs of data, a few key terms should be discussed: volume, velocity, variety, veracity, and value.[3]

Volume: The growing volume of data is due to ever-expanding electronic systems and devices. Over the past several years, healthcare organizations have implemented electronic health records (EHRs) using various technologies. Within months of an implementation, the organization may have learned that another version is required, necessitating an upgrade. Other healthcare organizations realize that the system implemented is not meeting their needs and make the decision to convert to other solutions. Then there are the individual business units implementing niche clinical systems to address specific patient care needs, such as radiation oncology. Add to this the ever-evolving plethora of mobile devices in the form of tablets, cell phones, and other technologies that collect and produce data, and allow that data to move around. Finally, there are wearable devices in the form of trackers, sensors, and monitors that screen physical activity, vital signs, blood sugar levels, and movement within an individual's home.

Velocity: While the various sources of data allow providers to capture an exciting array of patient and healthcare data, there are also many concerns. In addition to the fact that data is growing so quickly and is difficult to get our arms around, it is also very mobile. Data can be moved from one place to another in a millisecond. Healthcare organizations must ensure that data is harnessed, that it is standardized and accurate, and that it is used appropriately. Additionally, it is critical to ensure that it is protected for the well-being of the patient and the healthcare business. Safeguards are required to ensure the data coming in and data going out are managed appropriately.

Variety: Previously, most data was structured, all in defined tables and fixed fields. That's no longer the case. Data is being created in a variety of ways, meaning that it is unstructured. Techopedia indicates that "unstructured data represents any data that does not have a recognizable structure. It is unorganized and raw and can be non-textual or textual. For example, e-mail is a fine illustration of unstructured textual data. It includes time, date, recipient and sender details and subject, etc., but an e-mail body remains unstructured."[4] With that comes many challenges for healthcare professionals to accept data and convert it into useable formats for processing, analytics, and information for decision-making.

Veracity: With the exponential growth of data-generating devices, HIM professionals must question the veracity of their data. How can you know that the data you create or receive is trustworthy? How can you ensure that you are using good data for making informed decisions about patients and our businesses? Do healthcare professionals have the infrastructure in place to ensure that all data is identified, defined, mapped, managed, and audited throughout its entire lifecycle?

Value: The volume, velocity, variety, and veracity of data should cause HIM professionals to question the value of this data. What is the answer? Each healthcare organization must take the steps necessary to answer that question. Data is not going to go away; in fact, it is growing daily. An information governance program will ensure that healthcare organizations are managing all aspects of data consistently and appropriately.

Information Governance and Big Data

A formalized information management governance program addresses all requirements for managing data through the Information Governance Adoption Model (IGAM™) competencies, including Strategic Alignment, Data Governance, Enterprise Information Management, IT Governance, and Analytics.

Strategic alignment ensures that all decisions and practices around data and information are aligned with the organization's strategic goals and objectives. This is critical in that data and ultimately information is used to make decisions that influence and support the organization's goals.

Data governance addresses specific requirements for managing all aspects of data. It includes roles and responsibilities for data ownership including leadership and data stewards; master data and metadata management; standardized, organization-wide policies and procedures; and quality monitoring around all things data. Data governance provides the needed infrastructure to ensure that data is consistent across the organization and can be used for organizational analytics in support of quality care, population health, payment reform, budgeting, and other critical business decisions.

Under the overarching information governance program, data governance activities work collaboratively with those of enterprise information management, IT governance, and analytics to ensure that data is consistent across the enterprise and can be used for organizational analytics in support of quality patient care, patient engagement, population health, payment reform, business pro formas, budgeting, and other critical business decisions. Additionally vital to the management of data is the IT infrastructure to support its capture and use, not to mention interoperability with exchange partners.

In this age of Big Data, having this infrastructure is necessary for the success of every healthcare organization. Data is growing every day. Without strong data governance, information governance is not possible and the resulting information is questionable. Now is the time to establish the programs needed to ensure that data and information are constant and reliable.

Notes

[1] AHIMA. "Information Governance Principles for Healthcare (IGPHC).™" 2014.

[2] IBM. "Big Data."

[3] Marr, Bernard. "Why Only One of the 5 Vs of Big Data Really Matters." IBM Big Data & Analytics Hub. March 19, 2015.

[4] Technopedia. "Definition – What Does Unstructured Data Mean?"

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