Pharmacy Automation and Technology

Clinical and Business Intelligence: Why It's Important to Your Pharmacy

Brian Pinto, PharmD, MBA, and Brent I. Fox, PharmD, PhD†*

According to the Healthcare Information Management and Systems Society, “Clinical & Business Intelligence (C&BI) is the use and analysis of data captured in the healthcare setting to directly inform decision-making” (<http://www.himss.org/library/clinical-business-intelligence>). Some say that it is the right information given to the right person at the right time in the right way. No matter how you define it, the fact remains that *timely* access, synthesis, and visualization of clinical data have become key to how health professionals make patient care decisions and improve care delivery.

Some definitions of clinical and business intelligence (CBI) imply an element of luck. Laura Madsen describes business intelligence this way — “the integration of data from disparate source systems to optimize business usage and understanding through a user-friendly interface.”¹ Using that definition, let's take a deeper dive into the meaning and implications of CBI for health care. Today's headlines are dominated by issues and topics in the health care sector. Challenges such as health disparities, cost of care, insurance coverage, quality performance metrics, and public health concerns are abundant. We also grapple with the fact that medical errors are the third leading cause of death in the United States. Industry and government leaders recognize that further changes are needed to manage what has become nearly 20% of the US gross domestic product. How do we know where the problems are, and what is and isn't working? Enter CBI. CBI tools can provide insights into these questions to allow clinicians and leaders to make informed decisions as they pursue care delivery reform.

Identification of key performance indicators helps focus efforts on specific process and outcome measures that are necessary to advance health care organizations. Many hospitals look to regulatory (eg, The Joint Commission) and payer (eg, Centers for Medicare & Medicaid Services [CMS]) measures as a starting place for these indicators. One approach

often adopted is the development of a balanced score card to track a hospital or health system's performance with specific metrics. These score cards can assimilate a variety of operational, fiscal, clinical, and quality metrics using quantifiable measures. This approach allows institutional leadership and staff to better understand how the organization is performing relative to internal and external goals. CBI tools allow organizations to pull these types of data together in a meaningful way to show their progress toward institutional goals. This type of output may also serve as a platform for having a conversation about underlying causes of success or underperformance.

The next natural question is, “Does my organization really need to invest in this?” If your department uses data to make decisions, if others in your organization are using data to make decisions, or if you want to control the narrative about your departmental fiscal and clinical performance, then you need a CBI plan. This doesn't mean you should propose hiring data analysts right away. The tools and resources required to implement a CBI program can be costly. Like any well thought-out business strategy, the value must match the investment.

Let's take a closer look at some of the drivers behind the case for implementing CBI in hospital pharmacy practice. An obvious one is budget constraints. Health care spending has risen steadily for many years in the United States; prescription

*Assistant Director, Department of Pharmacy, The Johns Hopkins Hospital, Baltimore, Maryland; †Associate Professor, Department of Health Outcomes Research and Policy, Harrison School of Pharmacy, Auburn University, Auburn, Alabama

medications are of particular focus. A favorite target for most hospital executives is the medication supply budget. Having access to real-time purchasing and utilization data can be a valuable asset for identifying opportunities for performance improvement and determining the effectiveness of interventions that have been implemented. Some examples of how CBI could be used include impact of formulary decisions, medication use policies, nonformulary utilization, and other high-impact medication areas (eg, oncology).

Another important driver in health care is transparency in quality. The largest payer of hospital bills, CMS, requires hospitals to report on a variety of quality measures. Many of these measures are publicly reported and are increasingly becoming significant factors linked to hospital reimbursement.

Another increasingly important driver for hospital performance is patient satisfaction. Hospital Consumer Assessment of Healthcare Providers and Systems (HCAPS) measures the patients' perspectives of the care they receive. Although this may not seem like a natural priority for hospital pharmacy leaders, several of the questions asked in this consumer survey are directly tied to medication management. Given that HCAPS scores influence hospital fiscal performance and several of the questions asked in the survey deal with medications, pharmacy departments should care a great deal about these metrics. CBI tools may be useful to track performance and determine where improvement is needed so that resources may be strategically deployed.

One final example of potential drivers for CBI is at-risk business models. Many payers, including

CMS, are moving away from the traditional fee-for-service payment model and are either experimenting with or implementing at-risk schemes. In the fee-for-service structure, hospitals and providers are not penalized for inefficiencies and could even be inadvertently incentivized to provide more care than necessary. However, in an at-risk model, the provider may either lose revenue or be penalized for delivering inadequate or substandard care. One such example is penalties related to patients returning to the hospital within 30 days of discharge for certain conditions (eg, heart failure and pneumonia). Knowing which patients are at risk for hospital readmission and monitoring factors that may influence those readmissions is of utmost importance to hospital leadership. Here, CBI tools may assist in monitoring 30-day readmission rates and identifying which conditions influence readmissions for a given institution.

These are only a few examples of where CBI may provide benefit to hospitals in an effort to benchmark, identify areas for improvement, and track a variety of performance metrics. CBI has the potential to positively impact patient care delivery, health outcomes, and business operations. As organizations begin to harness the capabilities of CBI, we will see improvement in patient outcomes and the fiscal health of our nation. We welcome your comments (Brian at bpinto@jhmi.edu and Brent at foxbren@auburn.edu).

REFERENCE

1. Madsen LB. *Healthcare Business Intelligence: A Guide to Empowering Successful Data Reporting and Analytics*. Hoboken, NJ: John Wiley & Sons; 2012. ■