Leveraging Business Intelligence for Revenue Improvement

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healthcare financial management association

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The workflow processes that influence the financial performance of a hospital are diverse, ranging from scheduling and registration to coding, billing, and collections. And so are the many stakeholders' roles and responsibilities. Effective performance management requires a keen understanding of revenue's relation to the activities of payers, clinicians, and pre-care and post-care employees.

With such sophisticated operations, many hospitals today recognize that revenue management must become a seamless activity that is supported by comprehensive business intelligence. As providers move toward a holistic approach to revenue management processes, they must address key questions about how to bring together wide-ranging performance data to enhance efficiency, improve revenue capture, and achieve sufficient margins to carry out their missions.

Just some of the questions that today's hospital chief revenue officers need to ask:

- What key information should providers and payers share with one another for effective revenue management?
- What is needed to help patients understand the clinical and the financial aspects of their care so they can have a positive experience with the organization?
- What is needed to track and manage efficiency, including patient throughput and workflow?
- What kinds of information help physicians partner with hospitals on clinical and business issues?
- How can these information elements be consolidated into a tool senior managers can use for tracking, corrective action, and strategy?

This HFMA educational report, sponsored by McKesson Corporation, discusses various factors leading to the need for improved use of business intelligence and offers advice from hospital leaders on ways they are using performance data to optimize revenue management at their own organizations.

Today's Challenges

It can easily be argued that traditional revenue cycle management just isn't working for many hospitals. Generally, challenges are seen in several areas.

High cost, inefficiency. Significant amounts of time and resources are devoted to improving processes associated with registration, insurance eligibility verification, authorization for medical procedures and specialty care, clinical coding, and filing claims for payment. Yet all too often these efforts are incredibly inefficient and ineffective:

- More than $1 billion is lost to hospitals every year because of the need to reprocess accounts receivable.[1]
- About $20 billion is lost every year because of inaccurate and incomplete codes and charges.[2]
- Billing offices take more than 10 days, on average, to send out hospital bills.[3]
- Hospitals fail to collect as much as 80 percent of self-pay net revenue.[4]

Difficulty meeting consumer needs for pricing information and payment capabilities. Revenue cycle management increasingly must accommodate patients who are covered by consumer-directed health plans, such as high-deductible health plans and their associated health savings accounts (HSAs).

The number of patients covered by HSAs and high-deductible plans is growing. One million out of a total of 2.5 million health reimbursement accounts in 2005 were HSAs.[5] Six percent of employees in private industry had an HSA in 2006,[6] and 32 percent were projected to add an HSA to their benefit programs in the next 12 months, according to the Foundation for Agency Management Excellence.[7] Nearly 3.2 million patients were covered by high-deductible health plans in 2006, an increase of more than 600 percent in less than two years.[8]

As a result of the rising popularity of HSAs, patients are becoming more engaged in their healthcare decisions: shopping among healthcare providers for the best value for services and making careful cost- and quality-based decisions. Also, patients are often directly responsible for making payments to hospitals for their care.

"You have to develop a process to be able to handle the overall needs that are somewhat standard, and then you have to be able to adjust to handle the unique situation," says Michelle A. Carrothers, director of debt management and revenue cycle, OSF Healthcare System, Peoria, Ill. "This is not like manufacturing, where you're building a widget and the widget is built the same way every time. In health care, we offer a service. Our patients have unique clinical and financial situations to which we must respond."

Unfortunately, most revenue cycle management systems are not set up so patients can go online to check for prices, services, and quality measures or to handle preregistration, let alone bill paying.

"Traditionally, hospitals have not been as transparent about pricing and payment options for a patient's clinical needs as they could be," notes Lynn L. Musselwhite, FHFMA, assistant vice president for patient financial services, Mountain States Health Alliance, Johnson City, Tenn. "Providers these days are realizing it's as important to educate patients about the economic side of health care as it is on the clinical side. We have to marry the two."

Lagging customer service. Revenue cycle information-gathering is not exactly consumer-oriented. Patients in many hospitals move from scheduler to registrar to financial counselor, answering the same questions over and over again. Nor are such processes as accurate as they could be, as patients fumble to find their insurance cards and struggle to decipher their benefits and determine their outstanding deductible amounts.

"It's time for patients to behave like consumers as they do elsewhere and expect convenience and courtesy as well as the best care and the best price," Musselwhite says.

Poor quality tracking. If traditional revenue cycle management systems are ill-suited to the demands of today, they are hardly prepared for a future that includes such new payment programs as pay for performance. At least 30 million Americans are already enrolled in private, pay-for-performance health plans that pay providers on the basis of such factors as outcomes, patient satisfaction, and quality indicators. And as of October of this year, Medicare will stop paying at a higher rate for treatment of eight conditions when they are deemed acquired during the hospital stay.[9]

Yet many revenue cycle management systems are not sufficiently ready to link payment with outcomes or record and track detailed information about quality of care and indicators of illness that are present when a patient is admitted.

Financial instability. Maintaining the status quo in revenue cycle management isn't financially feasible. Already, 20 percent to 30 percent of hospitals have negative total margins.[10] By some estimates, if the proportion of bad debt to revenue increases by 10 percent a year, the average aggregate hospital margin may be zero within the next five years.[11]

"In the past, hospitals did not have to be as efficient as they do now because the economics weren't as severe. Hospitals could afford to throw people at problems. With the economics today, hospitals have to be more efficient and effective," notes Musselwhite.

As hospitals confront these challenges, some believe a new approach toward revenue cycle management founded in improved data use is needed. Particular areas where optimizing business intelligence poses particular opportunity for improvement include sharing of performance information with payers, supplying pricing and financial responsibility information to patients, measuring revenue cycle efficiency, meeting physician information needs, and consolidating performance information for the leadership team.

Payer-Focused Metrics and Data Sharing

Payers and providers need to be upfront and open with one another about health care's rules of engagement: the requirements and benefits and terms of the health insurance contract that govern payment for services to patients. All too often gaps in information get in the way.

"There seems to be a black box between what hospitals submit and expect to receive for payment and what is actually paid on claims," notes Bruce Adler, a partner with Tatum, LLC, a consulting company based in Atlanta. "Even with the use of eligibility and claim status products, there is still not a full degree of confidence in the clarity of data that providers get back on the payer side. And the concurrent review process that most facilities and payers go through is still very manual, usually involving a case worker or nurse reviewer on the provider side having to make multiple phone calls to the clinical case workers on the payer side. More needs to be done to concurrently use data for both treatment and to satisfy the payer reporting and review requirements."

Regular communication between a provider and its payers is a starting point. The Florida Hospital Organization, which operates four hospitals on seven campuses across the Sunshine State, holds quarterly joint operating committee meetings to discuss key revenue cycle metrics with representatives from

each of its commercial payers as well as individuals from each hospital's patient financial services units, case and utilization managers, and any clinical departments that may be having problems with payment. The committee reviews accounts receivable aging statistics to determine if claims are being paid in a timely manner and denial rates to learn whether claims are being paid at all.

"We look at both initial denial rates and also what's ultimately written off after we exhaust all of our appeals processes because with the increase in self-pay responsibility, the yield that we get from our managed care payers is becoming increasingly dependent on whether the patient pays," explains Jeff Hurst, the organization's vice president of revenue management. "If we are seeing a higher than average debt write-off rate for a payer's subscribers, we will want to have a conversation about the carrier's rating and yield when contract renewals come up because we are not getting what we expected to get."

Florida Hospital Organization is moving beyond simple denial and write-off metrics to focus on process timeliness information as well. "There was a time when we chiefly looked at what payers denied up front and what ultimately was written off," says Hurst. "But that didn't really factor in whether our claims were being submitted in a timely manner or whether a payer was issuing denials in a timely manner or how quickly we were getting appeals out the door. On top of the financial metrics, we're transitioning now to more of a process efficiency perspective. So the process is two-fold: Are we doing things well? And are we doing them efficiently?"

In a similar vein, the electronic data interchange group at OSF Healthcare System works directly with each of its facilities in Illinois and Michigan to capture the maximum data items required by payers, notes Carrothers. OSF uses an external resource to verify claim status, eligibility, copay amounts, and deductibles for major payers.

Estimating Patient Financial Responsibility

To increase the chances patients will have a positive experience, hospitals should create realistic expectations, says Adler. Providers need to give patients the basics: when they will have to be at the hospital, what will happen clinically, and what they will have to pay.

"I use the analogy of bringing a car into a body shop after an accident: You get an estimate, you know what insurance will cover and what it won't, and you make an informed decision about where you will take the car to get it fixed," Adler says. "Why should it be different with our own bodies? When we need a medical service, we should know what is going to be done and how much we will be financially responsible for prior to service delivery."

Florida Hospital Organization has done a considerable amount of programming over the past year to improve accuracy of patients' financial estimates for the services they will receive as well as their out-of-pocket costs. The four-hospital system drills down 12-month data by payer, physician, diagnosis code, and individual physician to generate a patient responsibility estimator that gives preregistration and registration staffs a valuable tool for communicating to patients their anticipated financial responsibilities. The system then audits adjudications and payments to determine how closely the estimate actually meets the total charges on an account or the out-of-pocket expenditures.

As much as possible, conversations about a patient's financial responsibility should come before entering the hospital. While doing so isn't easy, many providers, such as Mountain States Health Alliance, are taking important steps to reach this goal.

"Years ago, patients would be scheduled for surgery and we didn't have much interaction with them until they were put in the hospital. Now we want our patients to be educated about their experience earlier in the process," Musselwhite says.

Mountain States Health Alliance has established Web-enabled portals for patients that publish the hospitals' quality data, credit and collection policies, financial assessment forms, and contact information. An interactive portal allows patients to preregister electronically so paperwork will be ready when they arrive and the wait time in admitting will be minimal. The portal guides patients through an eight-step process that takes about 10 minutes to complete. Patients provide information about the clinical case, patient and guarantor demographics, and primary and secondary insurance coverage. Also, patients are advised about what they need to bring to the hospital—all of their active insurance cards and a picture ID as well as copayment or deductible amounts. In addition, the patient is informed about the paperwork expected to be completed on

Tips for Optimizing Use of Performance Data

Choose metrics with care. The most useful business intelligence is focused on performance indicators that are "actionable," meaning that action can be taken if the organization goes off target. Consensus on which measures to use and how they should be used is critical to success. Measures should take into consideration the entire organization, based on both internal and external factors, and should relate to the overall strategic plan of the organization. Be warned though: Strategic performance indicators should be brought down to earth so that those involved in the organization can influence the results. Otherwise, the data will be viewed as just another executive report.

Aim to personalize. No matter how attractive a screen may look, if it doesn't contain data pertaining to the user (or the user's department and its overall performance), it's useless. The fact is, everyone has different information needs at different times of the day. The most valuable performance tracking systems allow for personalization and are interactive and flexible, providing users with a highly tailored view of the exact information needed at a precise moment—from an at-a-glance overview of the day's financial or operational scenario to bigger-picture trending, forecasting, and automated alerts. Users should have the ability to drill down into the information before making critical decisions.

Set appropriate alerts. An alert system raises awareness among staff members concerning urgent situations, helping them resolve issues quickly and proactively. Depending on the system, alerts can range from a potentially negative trend requiring attention to an opportunity to fix a pending disaster.

Ideally, processes should be set up to notify the appropriate person of deviations from his or her work goals or the organization's plan. By knowing ahead of time that a part of the organization is trending off course, users gain a critical time advantage for modifying direction and improving overall business decisions.

However, alerts can be a double-edged sword: They can caution the user about a critical situation or create a "sky-is-falling" environment that eventually diminishes the alert's value by filling up the user's inbox with waves of alerts. Therefore, use care in avoiding overuse.

Support data use at all levels. First-generation performance reporting systems were largely designed for the executive team. And while the C-level certainly needs a daily top-line read on the organization's key performance indicators, it's critically important that the information also be delivered to those who are literally dealing with the transactions on a daily basis—and who can affect change. Be sure performance reporting is readily available to all levels of users needing access to critical business intelligence, not just senior managers.

Source: Jacobs, J., "Performance Dashboards: Is Yours Working for You?" *Managing the Margin,* Healthcare Financial Management Association, March 2008.

site, such as consent to treatment, financial agreement, and patient rights and responsibilities forms.

Recognizing that many patients are not electronically savvy, Mountain States Health Alliance reaches out to patients the old-fashioned way: by direct customer contact. Musselwhite explains that the organization has formed a close alliance between the scheduling and preregistration departments so that the moment a patient is scheduled for treatment, the employees in patient financial services can start addressing the financial side of the encounter.

"We start calling patients and asking them whether they know where to go and whether they understand the process. By the time we finish the dialogue, we have already verified their insurance, so they don't have to worry about it. We have many patients tell us, 'I can't thank you enough. I've been worried to death about this,'" Musselwhite says.

Measuring Revenue Cycle Efficiency

In many ways, the ultimate tracking mechanism of revenue cycle management efficiency is how quickly hospitals get paid.

"The goal in revenue cycle operations is to be paid quickly and correctly," Carrothers says. "This means you are gathering the right data in the system the first time around and there is no rework required. Doing so is a strong indication that you are making the process efficient and accurate."

As OSF gears up to launch a new business information system, it is deciding which key performance indicators will help identify improvements needed in the revenue cycle. The hospital system is looking at key performance indicators related to accounts receivable and days cash on hand. OSF is also looking at payer performance and patient access, including qualifying screenings for financial and other assistance programs.

As measures of operational efficiency, Florida Hospital Organization evaluates length of stay (LOS) metrics, particularly geometric mean LOS, which shows if a hospital is getting patients out the door in a timely manner. Avoidable delays indicate that something has gone wrong and caused a patient to stay an extra day or two. Denials suggest that a hospital is providing services that aren't medically necessary.

To this standard list, Florida Hospital Organization has added present-on-admission (POA) indicators to find opportunities to improve the quality of care. Hurst explains that the healthcare system tracks POA indicators on a quarterly or monthly basis by campus to determine whether a patient develops a condition after admission that extends LOS and reflects a breakdown in efficiency and effectiveness.

While providing an overall look at hospital operations, after-the-fact measures do not help managers take action to improve efficiency in real time. In fact, hospitals are not taking advantage of formal tracking boards as much as they could, Adler says. Building off tracking boards that hospitals use in the emergency department to follow patients from time of arrival to time of discharge, hospitals can apply similar methodology and technology throughout patient flow, particularly in outpatient areas, to monitor the flow of patients from arrival to registration, treatment, and actual checkout and identify bottlenecks so internal resources can be flexed to meet immediate demands, Adler recommends.

Mountain States Health Alliance has identified key steps in patient management, such as scheduling, insurance verification, patient contact and instruction, service delivery, and discharge. At each of those points, the health system measures time to delivery from the patient's perspective, and it disseminates the key metrics to front-end team members who can promptly make a difference in direct patient care.

"At my desktop, I can see the waiting times in admitting and the patients who are waiting to be registered at every facility in the healthcare system," Musselwhite says. "If I sign on to the computer system and find there is a long wait time at one of the facilities, I can page a supervisor and begin to ask the question: 'What are we doing? Do you need staffing from somewhere else?' That's a powerful tool for me, because I can't be everywhere every day."

Supporting Physicians' Improved Data Use

What physicians really want is better clinical information in a timely manner, so hospitals need to continue to provide an efficient means for clinical results reporting, Adler says.

Hurst notes, for example, that Florida Hospital Organization presents data on LOS and avoidable delays to leaders of the medical staffs of its hospitals as a means to gauge the effectiveness and efficiency of clinical processes and specific issues involving physicians. The healthcare system also is educating

physicians about POA indicators and MS-DRGs [Medicare severity-based diagnosis related groups] and how physicians can improve the coding of accounts.

As hospitals move to an electronic medical record, they will improve physicians' ability to monitor patient status, particularly when physicians have patients in multiple venues. A computerized provider order-entry system will create efficiencies in charge capture for hospitals and at the same time make it easier for physicians to begin charge processing.

"To instill greater utilization of this technology and get buy-in from physicians, hospitals need to be able to provide data that supports physicians' own billing for their professional services components," Adler says.

By opening Web-based portals to physician practices it owns, Mountain States Health Alliance has helped physicians at the point-of-practice encounter. The healthcare system shares some of the same technology concepts it employs on a broad-based revenue cycle perspective to physicians who may consider adopting them on a small scale, such as point-of-patient access and scheduling tools as well as account resolution.

"Some physician groups don't have much of that technology available to them, so they are trying to manage the revenue cycle with people. That's good to a point, from a customer service perspective. But when it comes to handling volumes of patients and dealing with the complexity of the payer arena today, physicians need automation," Musselwhite says.

Consolidating Information for the Leadership Team

Probably the most important tool for senior management is a business intelligence reporting repository for all accounts across all facilities that can slice and dice data in many different ways and is able to deliver this information fast enough that executives can respond quickly, Musselwhite says.

"Senior executives need a big-picture perspective to pick up key indicators of quality from clinicians as well as all the fundamental financial components they need to be engaged in operationally every day, or they will have problems," she says. "It's a phenomenal thing to have key metrics at your fingertips every day and, if you see them go awry, to find what your pockets of opportunity are."

Florida Hospital Organization has a decision-support system that takes key information from clinical and financial systems and presents it in a user-friendly format, almost like a click and drill tool. If the healthcare system is behind budget on charges, Hurst can drill down to determine not only the cost center but the price file with missing charges, for example.

"It gives us real-time information and also daily updated information through the batch process, so the executive team can track the key metrics that are important for the financial and clinical health of the organization daily," Hurst says, citing as examples case mix, LOS, inpatient and outpatient charges, emergency department [ED] visits, cash to collection, and labor management. "Because of the drill-down effect, we can look at month or year-to-date actual numbers versus targets and compare performance against the previous year. Also, we can drill down to a specific campus. If ED visits are running behind budget, for example, we can find out if there is a problem on the charge side or in a specific cost center."

That said, the system is a dynamic work in progress from the revenue cycle perspective, Hurst adds. One of the things the organization would like to add is a drill down function for accounts receivable management.

"If I have a problem with my HMO 90 to 120 days aging stats, then I can see if there is a problem with an insurer's HMO or PPO product. Or if I have five accounts over $100,000 that have been hanging around for more than 110 days, I can find out why they aren't getting paid," Hurst says. "So the next big programming initiative is to have drill-down, real-time management decision information because the quicker you can get the information, the better you can manage the situation and prevent other problems."

Most senior leadership teams currently use dashboards that show what has already occurred. The next phase will employ future tracking to obtain real-time data on under- and over-performing areas of the hospital so resources can be redeployed throughout the facility, Adler says.

"The next generation of dashboards will not be looking in the rearview mirror but focusing forward to determine how hospitals can flex to deal with the volumes of patients they are seeing in their lobbies," he says.

A Data-Driven Improvement Strategy

Given the increasing demands and sophistication required of today's revenue cycle operations, hospital leaders are discovering improving data use is key for optimizing revenue, developing efficiencies, and creating processes that better serve patient needs. Organizations that leverage business intelligence to improve processes with payers, physicians, and consumers will be best positioned for success.

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Endnotes

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