

Leveraging Data Analytics to Improve the Revenue Cycle



As organizations become more technically savvy, they are beginning to employ data analytics to drive change. More specifically, they are integrating the use of data and analytics into their revenue cycle workflows to significantly affect processes and productivity, as well as top- and bottom-line revenue. Although some forward-thinking organizations have made great strides in this area, others continue to struggle with how to best leverage analytics to drive automation and gain actionable, data-driven insights. This HFMA Educational Report, sponsored by Change Healthcare, explains the value of data analytics as a means to effect positive and long-term change.

How Data Analytics Benefit the Revenue Cycle

In today's evolving healthcare climate, hospitals and health systems are challenged to provide higher-quality care while operating on leaner budgets. Namely, the shift away from fee-for-service to fee-for-value aims to make higher-quality, lower-cost care more accessible to patients. New reimbursement models, in addition to growing consumerism and competition, further emphasize the need to recover and maximize every dollar. Big data and applied analytics can help organizations address these challenges, offering insights into the revenue cycle that otherwise would be difficult to attain at such a granular level.

Unlike some aspects of health care, the revenue cycle is comprised of highly quantifiable elements and is typically facilitated by modern IT infrastructure systems. This makes it easier to collect revenue cycle data, track metrics, and apply analytics. Hospitals and health systems that establish strong data collection and analytics programs have the potential to measure, compare, and learn from nearly every element in the revenue cycle.

"Data tells a story and can be used to change behavior or establish policies and procedures," says Margaret Schuler, vice president of revenue cycle at OhioHealth, headquartered in Columbus, Ohio. "With \$3 billion in annual revenue, collecting, tracking, and analyzing data are critical to our culture and to managing revenue cycle operations."

Organizations that use data analytics also have more opportunities for continuous process improvement through diagnostic reporting, root cause analysis, key performance indicator (KPI) tracking, and trend projections. "Data gives

hospitals the ability to look at processes over time and identify breakdowns, including systemic issues that affect specific revenue cycle processes," says Schuler. "From pre- to post-visit, analytics are able to shine a light on various functions and components, including workflows, as well as individual and department performance."

Data analytics also reveals opportunities for efficiency, such as replacing manual workflows with automated solutions or streamlining processes that free staff to concentrate on accounts that would benefit more from human intervention. "Whether it's a dollar related to a late charge, a coding issue, or a work step during account follow-up, analytics allow us to drill down into the components of the revenue cycle and expose gaps," says Ryan Thompson, vice president of revenue cycle for Christus Health in Dallas.

Data also enables more informed decisions about cost management and cash flow. "The administrative costs of the revenue cycle are significant, and there is tremendous pressure to reduce these costs," says Thompson. "When you're reactive, it tends to increase costs as it can cause non-value-added work efforts or rework. Being reactive also increases risk for losing reimbursement due to a wrong action and/or poor customer satisfaction. With actionable data, you're able to make more proactive decisions and save costs, as well as time."

Frequently Asked Questions about Data Analytics

Not all organizations are familiar with or comfortable using data analytics in the revenue cycle. The following are some key questions that often emerge as organizations start down this path.

When and where should we apply analytics?

Historically, healthcare providers have used reporting to identify potential problems on the back end of service, looking at denials, under- or over-payments, and under- or over-coding issues. Yet, because of the revenue cycle's quantifiable nature, providers can apply analytics at nearly every point throughout the cycle, including at pre-service, at the point of care, while coding, and at pre-billing and billing, as well as to segment self-pay collections or other patient payment groups.

“As an ancillary provider, we often don’t have patients’ current billing and insurance information, which creates a challenge for collecting reimbursement from the right payer without increasing operating costs due to unnecessary statements and other costs,” says Ana Rosa D’Amato, director of revenue cycle at Sheridan Healthcare in Sunrise, Fla. “By applying analytical processes, such as coverage discovery, we have significantly improved our ability to pinpoint the right funding source.”

What types of analytics are most insightful?

Although the use of analytics in health care is not new, the propagation of electronic health records (EHRs) and the resulting accumulation of patient information are pushing hospitals and health systems to expand their analytics efforts.

Some organizations develop their own reporting to track and measure specific KPIs across the revenue cycle. Others engage third-party solutions and services that automate data analysis and reporting to optimize productivity, patient and billing workflows, coding accuracy, and revenues. Either approach allows for the use of robust KPIs, such as the 25 HFMA MAP KeysSM that offer industry-standard definitions for metrics that relate to patient access, pre-billing, claims, account resolution, and financial management.

“Frequently, business intelligence tools employ rules-based analytics, meaning they collect data as defined by preset criteria and algorithms,” says Christus’s Thompson. “These types of analytics are easier to implement and more traditional. However, emerging machine-based analytics can learn from patterns and adapt to preferences. These kinds of analytics are especially useful as predictive tools, such as when identifying the likelihood of payer coverage or patient payment or recognizing potential denials before claims are submitted. Machine-based analytics help us understand trends over time and allow us to address issues in bulk rather than individually, which is costly.”

Who should see data reports?

Oftentimes, organizations use dashboards, report cards, or scorecards to report metrics to C-suite leadership at the facility and system levels. These provide summaries of the organization’s performance, as well as views of individual departments and other areas. However, hospitals and health systems should also share revenue cycle metrics more broadly to promote continuous process improvement. For example,

an organization may want to share metrics with clinical areas to pinpoint instances when charges were entered late, so departments can respond to specific issues and future charges can be captured sooner.

“Differentiation in reporting is important, but so is transparency with all teams,” says Sheridan’s D’Amato. “Our processes leverage specific senior management reports to provide operational and revenue insights, as well as more actionable team member reports. This approach ensures that all layers of our organization are aware of process findings and outcomes while promoting a culture of accountability.”

How can we combine and manage large amounts of data?

With so much information feeding into hospitals, bringing data together and managing it can be a tall order, particularly when it is in different formats, incorporates varying levels of specificity, or comes from disparate legacy systems. When you add the many third-party applications and specialty products used to make the revenue cycle more efficient—plus the dashboards and reports they generate—organizations are then challenged to *aggregate* all the information and to deliver the *right* data to the appropriate individuals and departments.

Organizations need to make sure they are comparing apples to apples before putting analytics to work. “As large health systems acquire new hospitals and practices, they often will have disparate health information systems,” says OhioHealth’s Schuler. “It’s critical for these organizations to normalize data so they know they’re comparing and analyzing the same information.”

After data is normalized, it is also important for information to be collected at the same level of specificity. For example, a smaller hospital, newly acquired by a large health system, may not include enough detail in its denial write-off codes for the parent organization. “It’s imperative to align these coding processes so data elements can be accurately analyzed,” says Schuler. “If you’re not capturing the same level of detail, you’re going to have problems analyzing it.”

Another essential but sometimes complicated step is integrating business intelligence tools into a manageable system so these tools are able to “talk” to each other. According to Christus’s Thompson, “Using integrated data collectively rather than in their individual silos, organizations can

produce more meaningful, robust information that together point to correlations that might otherwise go undetected.”

Last, but certainly not least, the human element is still an essential component of revenue cycle data analytics. “Finding critical thinkers who can analyze the numbers, convert data to meaningful information, and deliver it to the appropriate people remains essential to achieving results,” says Thompson.

Crucial Focus Areas

As organizations begin applying analytics to the various aspects of the revenue cycle, there are certain areas that should take priority over others. The following sections look closer at these different points, clarifying why they are so important and how data analytics can be valuable.

Enhancing the Patient Financial Experience

Most patients receiving hospital care are already under stress. They are likely ill or have been injured, and one of the last things they want to worry about is money. Unfortunately, providers must engage patients in financial discussions during this time. Using analytics, organizations can support more compassionate interactions, set patient expectations for payment, and make the financial experience less stressful for all parties. Organizations may even be able to help with financing or insurance coverage enrollment. Here are several ways organizations can use data to elevate the patient financial experience:

- **Verify coverage and estimate patient responsibility.** With rising deductibles, co-pays, and co-insurance costs, patients have been taking on more financial responsibility. In response, most healthcare organizations now use technology to verify coverage, and many have begun to use it to estimate charges and patient responsibility at or *before* the time of service. These technologies typically employ data analytics to drive improved charge estimation, elevating the effectiveness of patient financial discussions. Using these tools, organizations can aggregate and analyze information about eligibility, deductibles, patient responsibility, and payer contract pricing for procedures, conditions, and other aspects of care, allowing organizations to discuss with patients approximately how much

they will owe. “We share this information with patients up front, so we can educate them and avoid any surprises,” says OhioHealth’s Schuler. “Using the same technology and data, hospital staff can also quickly give price estimates to prospective patients who are ‘shopping’ for services.”

- **Identifying pre-existing, third-party funding sources.** Modern coverage identification solutions should be more than batch eligibility tools, which can violate Centers for Medicare & Medicaid Services (CMS) and other anti-phishing regulations. By accessing extensive networks of data assets and learning algorithms, capturing insurance coverage can become a targeted exercise specifically tailored to each patient and episode of care. In addition to comprehensively identifying government and commercial payer coverage, solutions must also safeguard providers from erroneous identifications by leveraging analytical and risk-modeling tools that suppress non-applicable coverage—coverage that either does not belong to the target patient or does not cover the service in question.

“At Sheridan Healthcare, we use analytic and process automation that draws upon multiple sources of data to identify coverage for our patients who present as uninsured or self-pay,” says D’Amato. “With a complete patient profile and coverage information, we are able to address the needs of each patient. Fewer patient accounts are sent to collections, and our payer revenue has increased significantly.”
- **Shepherd patients through coverage enrollment, charity care, or other financial need programs.** Using presumptive analytics, charitable organizations like OhioHealth and Christus Health can accurately assess patients’ financial circumstances and determine which patients are eligible for Medicaid benefits, qualify for charity care programs, should receive discounts, or should be offered payment plans based on their needs. “At Christus Health, we segment uninsured, self-pay patients to identify those who have absolutely no coverage and find opportunities to help them either receive charity care or enroll in plans covered under the Affordable Care Act,” says Thompson.
- **Boost patient collections.** Many healthcare organizations improve their patient payment collections by requiring prepayment or arranging payment plans prior to or at the point of service. The result is a reduction in patient

liabilities. Schuler says, “This, of course, helps with collections, but it is also for the patient’s financial health.”

Hospitals and health systems also can employ analytics to shift their resources and staff to focus on resolving aging accounts. “We use analytics to lower the number of patient statements we send and the number of patient accounts that go to collections,” says D’Amato. “We’re also able to pursue only the accounts where analytics and patient outreach didn’t identify coverage.”

- **Increase patient satisfaction.** By using data, organizations are better able to set expectations and address patients’ concerns and needs in a timely fashion, both of which help bolster patient satisfaction. Analytics can be used post-service to increase satisfaction as well. “For instance, emerging voice recognition software is now being used by some customer service call centers and during patient surveys,” says Thompson. “When key words, phrases, or escalation in tone are detected, it enables staff or supervisors to intervene in real time or shortly after the interaction—which is key for attaining higher satisfaction levels.”
- **Foster greater consistency.** With data analytics, organizations can standardize their communications to ensure patients receive consistent messages, no matter where they enter the organization. HFMA has done considerable work in this area, including developing best practices that bring consistency, clarity, and transparency to patient financial communications. Along with these best practices, HFMA provides a framework for adopter recognition and compliance measurement. (For more information, go to <http://www.hfma.org/Communications>.)

Preventing and responding to denials

Denials are costly to healthcare organizations, not just because final denials translate to revenue loss, but because the entire process prior to the final decision is costly—it takes substantial administrative time and resources to trudge through the appeals effort. Traditional denial mitigation strategies have been reactive; however, organizations can use analytical prescreening processes to identify potential denials and mitigate issues before a claim is submitted.

Monitoring denials trends is another way organizations can employ analytics. “If denial rates are up, we use data to drill down and determine root causes and then develop action plans around particular problems to get KPIs back on track,”

says OhioHealth’s Schuler. “We try to figure out whether an uptick is due to missteps with coding, missing documentation, or other factors.”

One effective denials management strategy is to map claim adjustment reason codes (CARCs) into data analytics systems. “If a denial comes back with the CARC CO197 for ‘no authorization,’ for instance, you should be able to capture that information so it can be reported and shared with authorization teams and clinical areas,” says Schuler. “You can then examine your workflow and build processes around addressing and reducing these types of denials. So, you don’t have to appeal similar accounts later. If you do not map remittance advice codes, you won’t be able to pinpoint the specific issue related to those denials and change your behavior to prevent them in the future.”

OhioHealth has had great success in managing denials. The national average for final denial write-offs is 3 to 5 percent, according to HFMA’s *Revenue Cycle Forum*. At 0.10 percent of gross patient revenue, OhioHealth’s final denial rate is extremely low. “We achieved those results because we track our denials and use analytics,” says Schuler. “In 2010, we launched a process improvement initiative to reduce our final denial write-off rate. Without a comparable KPI target, we chose to set a stretch goal to cut denials in half. In less than three years, we reduced the rate to 0.10 percent.”

Identifying and managing under-diagnosed revenue leakages

Although traditional reactive and proactive denial-management technologies can reduce some revenue loss, they are not typically capable of stopping all leakage. Modern revenue cycle technology stacks must look beyond denials and be aware of and protect against non-traditional revenue losses. Learning, analytical, and well-informed revenue cycle technology must be capable of advising providers of unknown threats and loss while facilitating uniform evaluation of all points for potential loss.

By leveraging such tools, hospitals and health systems can segment and trap claims that might be missing documentation and/or were under-coded. “Since the ICD-10 changeover, there’s a greater level of specificity required, which results in potential opportunities for under-coding or missing documentation,” says Christus’s Thompson. “By segmenting, we can review groups of accounts to determine if there are any

opportunities to recover revenue. Through analytics, this process is built into our workflow.”

Likewise, analytics can be used to assess segmented accounts for underpaid charges on claims. Through the deployment of analytic engines capable of modeling payer/provider contracts, organizations can engage in a comprehensive review of all claims and payments to operationally protect themselves against systematic underpayments. “We model all of our payer contracts in our patient accounting system and search for claims that might be underpaid,” says OhioHealth’s Schuler. “Analytics enable us to then have a dialogue with the respective payer to recover appropriate payment.”

Raising staff productivity

Analytics can also help organizations elevate staff efficiency by highlighting ineffective or non-value-added touches or broken processes within a workflow. This creates opportunities to provide targeted training or process optimization.

“If a particular department is experiencing errors, for instance, a hospital can evaluate workflow and decide why these errors are occurring and mitigate future events proactively,” says Christus’s Thompson. “These are typical errors that result in claims delays—sometimes by one or two months. If you’re able to stop these errors when they’re occurring or fix them before claims are submitted, you’ll receive revenue much sooner and keep accounts from aging longer than necessary.”

Analytic and reporting tool sets can also aid providers in setting and monitoring productivity standards. At OhioHealth, coding, registration, and business office staff receive scorecards. The business office associates, for example, are scored on three quality indicators: number of aging accounts receivable over 90 days; number of accounts successfully worked; and a total quality score. These scorecards allow associates to see how they are performing and also identify opportunities for more training or other resources to help them be even more successful.

Steps for getting started

Developing a robust, analytics-based culture may seem daunting. Whether an organization is just getting started or rebooting an existing initiative, there are some key steps for leveraging analytics and improving the revenue cycle.

Understand the current state and define goals

“Through analytics, we’re able to monitor past and current metrics and set goals for where we want to be,” says Christus’s Thompson. “As such, an essential first step is to gather as much information about your revenue cycle as possible, including metrics or any KPIs you’re already tracking, so you can form a complete picture. Next, determine if there is any information you’re missing that you’d like to see. Then, compare metrics from previous quarters and years to uncover any pain points. Lastly, identify applicable industry benchmarks to help determine how your organization’s performance compares with others.”

Orient toward insights that are actionable and support your goals

With all the data and analytic tools available, there are numerous options for KPIs and reporting metrics. Providers should understand the difference between reporting information and reporting insightful key performance metrics that build awareness and accountability. “We focus on the metrics that drive success in the revenue cycle and lead to a positive patient experience,” explains Sheridan’s D’Amato. “With analytics, we have insight that leads to measurable increases in revenue, lower A/R days, and fewer accounts in collections.”

Health care is a competitive industry, even more so now with its shift to consumerism. However, if providers that are new to analytics set benchmarks based on what other hospitals with well-established programs have been doing for years, they will likely be setting themselves up for failure. Organizations should instead begin by establishing benchmarks and stretch targets based on where they are and where they’d like to be over a designated time span.

Keep your eyes on all metrics—trending concerns as well as tried-and-true KPIs

Whether you are tracking six metrics or 26 metrics, it is important to keep all of them in sight and not get distracted by one or two; you need several to paint a complete picture of the revenue cycle. For example, if you are performing well in days-to-cash in accounts receivable but are not pursuing underpayments or appealing denials, your revenue cycle will not be balanced. Similarly, if you are preventing claims denials but your self-pay targets are underperforming, you will not see the degree of revenue you would like.

OUR SPONSOR SPEAKS

THE ADVANTAGES OF COVERAGE IDENTIFICATION ANALYTICS

David Figueredo, coverage analytics leader at Change Healthcare, discusses how leveraging analytics to identify the right coverage for patients is critical for financial health and delivering a positive patient experience.

How does adding coverage identification analytics to revenue cycle processes benefit healthcare organizations?

Organizations that integrate coverage identification analytics into their revenue cycle processes can get the most out of the data. Hospitals and health systems that apply analytics to self-pay patient accounts prior to sending statements, pursuing collections, and writing off bad debt can approach these tasks with greater clarity. The data helps organizations pinpoint individuals with incomplete or missing coverage and transition them to other coverage options when possible. Non-profit organizations can also use the data to identify patients who

qualify for charity care, allowing them to optimize their program and avoid bad debt.

With patient-level insight, providers have information on the right coverage and appropriate programs for patients. This also enables them to send targeted patient statements, create more effective call campaigns, and collect more revenue.

Managing the revenue cycle is difficult, but few factors negatively influence financial outcomes more than information gaps in the revenue cycle. Through the application of patient-centric analytics, providers of all sizes can significantly lower bad debt rates while improving patient perceptions of the accounts receivable process.

Source: Change Healthcare

"Organizations have to track the core KPIs like A/R days, bad debt, and point-of-service cash collections, but it is also essential to know where your cash is at all times," says Schuler. "At the end of the day, we monitor a number of metrics, but cash is the most critical. So much so, we share a daily cash scorecard with leadership so they know where our cash is every day, segmented by payer group."

Evaluate what is being collected and measured to ensure ongoing relevancy

"Although collecting and analyzing data is imperative, you don't want to generate data just for the sake of generating it," says Schuler. "Make sure you're measuring and collecting relevant information that is aligned with current KPIs and supports continuous process improvement. Moving forward, this will be extremely important in the new world of volume-to-value. With limited resources, you will want to make sure that the information you are collecting is meaningful and can help you move the needle on performance."

Dedicate resources, including talent and technology

Collecting data alone is not enough. Hospitals must employ the right people and software to effectively manage and analyze information. "Using technology, we can leverage data on a more granular level," says Christus's Thompson. "Prior to implementing our current solutions, we were able to monitor just two to three high layers of metrics that significantly affected the bottom line. Now, however, we can monitor all avenues of the revenue cycle, which makes a big difference in being able to effect operational improvements."

Healthcare organizations also need a designated team to pull the information together. "Operational leaders will want to make sure they have dedicated staff who are not only skilled at generating reports and evaluating them appropriately but who have the time to do so as well," says OhioHealth's Schuler. "If you are constantly pulling people away from operations to do this work, you won't be successful."

Know your audience

“When first starting to report analytics and other metrics, it is essential to understand what information is relevant to different individuals, departments, and segments within the organization,” says Thompson. “You have to get the right information to the right people so they can impact results.” For instance, in a large, multifaceted health system, the CFO should receive a complete overview of the entire organization, as well as layers within individual facilities. However, a CEO of one of the health system’s hospitals would want to see metrics specific to his or her facility; he or she does not need information from the provider practices or other facilities.

Being able to appropriately message information into user-friendly dashboards or scorecards, so it is both relevant and digestible, is also crucial to efficiently deliver meaningful information to the right individuals.

The Answers are in the Data

With the ever-changing complexities in the healthcare industry, data analytics can ensure hospitals and health systems realize every dollar, as quickly as possible, while sustaining higher levels of patient satisfaction and employee engagement. In all, these benefits help healthcare organizations not only endure, but also thrive in today’s competitive and challenging marketplace.



Change Healthcare is a leading provider of software and analytics, network solutions, and technology-enabled services that optimize communications, payments, and actionable insights designed to enable smarter healthcare. By leveraging its Intelligent Healthcare Network™, which includes the single largest financial and administrative network in the United States healthcare system, payers, providers, and pharmacies are able to increase revenue, improve efficiency, reduce costs, increase cash flow, and more to effectively manage complex workflows. Learn more at www.changehealthcare.com.



About HFMA Educational Reports

HFMA is the nation’s leading membership organization for more than 40,000 healthcare financial management professionals employed by hospitals, integrated delivery systems, and other organizations. HFMA’s purpose is to define, realize, and advance the financial management of health care. HFMA educational reports are funded through sponsorships with leading solution providers. For more information, call 1.800.252.HFMA, ext. 330.

This published piece is provided solely for informational purposes. HFMA does not endorse the published material or warrant or guarantee its accuracy. The statements and opinions by participants are those of the participants and not those of HFMA. References to commercial manufacturers, vendors, products, or services that may appear do not constitute endorsements by HFMA.