Getting It All

USING AN
INTEGRATED
INFORMATICS
SYSTEM TO HELP
IMPROVE THE
COLLECTION
OF HOSPITAL
CONTRACT
DOLLARS

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ospitals sign contracts with managed care plans, setting up an expectation for payment. Without proper monitoring, the payments may not always meet the contracted agreement, leaving money uncollected. In today's economy, the healthcare dollar is especially precious. Hospitals that strive to provide quality care using up-to-date knowledge and technologies must be intentional about collecting according to the terms for which they have carefully planned and budgeted.

Deaconess Health System, a six-hospital health system in southern Indiana, launched a lean Six Sigma project to improve contractual reimbursements—collecting more than \$500,000 in the first seven months. The project provided an excellent template that paved the way for additional revenue cycle improvements. Since the close of the contract variance project, Deaconess has successfully applied the same methods to achieve favorable outcomes in specific departments including behavioral health and outpatient infusion-chemotherapy.

Deaconess background

Deaconess Health System provides healthcare services in the Indiana, Illinois and Kentucky tri-state area. The system includes six hospitals in southern Indiana: Deaconess Hospital, Deaconess Gateway Hospital, the Women's Hospital, Deaconess Cross Pointe, HealthSouth Deaconess Rehabilitation Hospital and the Heart Hospital at Deaconess Gateway. The system also includes several ancillary facilities and partnerships with many other community healthcare providers.

Deaconess began its journey with lean Six Sigma in 2003. With full endorsement from hospital administration, a select group of managers participated in the first Green Belt class, covering the define, measure, analyze, improve and control (DMAIC) approach, change acceleration and General Electric's WorkOut improvement program.

In 2008, the team expanded to seven full-time Black Belts (BB) charged with using lean Six Sigma methods to target cost and quality issues directly related to the system's strategic plan. Individual projects are championed in advance by administration and have addressed inpatient and ambulatory clinic operations, clinical outcomes and revenue cycle opportunities. The program closed 52 projects in the past two years, returning \$8 million to the health system.

Education is key to embedding the concepts into the organization's culture. A new Yellow Belt (YB) curriculum was developed in 2010. Three-day training events have resulted in 125 YBs capable of conducting high-level improvements independently and improving the support available to full-time BBs in ongoing initiatives.

Leaving money on the table

In November 2009, Deaconess Health System came alive with a new electronic medical record (EMR) system. Deaconess wisely decided to integrate ambulatory

care and hospital billing into that system.

One of the benefits of the integrated system has been the availability of contract management software for hospital billing. Each of the largest hospital payer contracts can be entered into the billing software. A difference of \$500 or greater between an actual and an expected payment triggers the creation of a contract variance record which enters a work queue. Appropriate follow-up with the contracted payer can then result in increased revenue for the hospital.

Although the functionality was present, it became clear the expertise within the patient financial services department to work with the contract variance records was limited. Because of the complicated nature of the contracts, patient financial services account representatives often overlooked them. By July 2011, a backlog of 900 accounts having contract variance records had accumulated.

Additionally, because the variance threshold had been set at \$500 after the system was built, all variances \$499 and under remained unidentified. The hospital had left these potential dollars on the table, failing to maximize the reimbursement available.

Why Six Sigma?

After a Six Sigma project is identified, initial scoping must be completed. During this stage, the BB seeks the voice of the customer. Spending time with the employees working on the contract variance accounts provided a view of the current state, a list of key stakeholders and the points of pain in the existing workflow.

Table 1. Team charter

Business case

variances less than \$500 in lower-than-expected payments from contracted insurance companies and

Goal statement

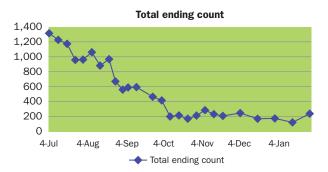
variance will be established incrementally until maximum qualifying for a contra

Problem statement

On April 30, 2011, 1,850 hospital billing accounts were in contract variance work queues, totaling \$4.2 million. From February 2011 to April 2011, 379 more accounts were added to all contract variance work queues than were removed. The current with current demand, preventing the threshold of \$500 to be reduced and additional revenue claimed

avenues of the revenue cycle the electronic billing system and reassignment of full-time

Figure 1. Reducing the backlog



Before a project is opened at Deaconess, the BB must quantify the potential financial return, as well as the potential impact on patient satisfaction, quality performance, or patient safety. Finally, the process owners must be engaged and demonstrate the ability to work with the BB without significant distractions. These criteria are used to calculate a score for the project. After the scoring is complete, the project is placed on the Deaconess project matrix for full approval.

All potential projects have a Champion. Usually, an executive at the vice president level will formally submit the project and ask for BB resources. In the case of the contract variance opportunity, the CFO served as the Champion and presented the potential project to her peers at the weekly collaboration between Deaconess administrators and the BB team. Shortly after approval, the DMAIC method was selected, based on the project parameters and the intended outcome. The team followed the DMAIC method with heavy influence from lean in the improvement phase.

Define

The project kick-off included the CFO, the manager of patient financial services, the supervisor of hospital billing, managed care specialists and account representatives. A project charter, shown in Table 1, was approved and the project timeline discussed. Any additional resources or team members were identified and responsibilities for each role reviewed.

The team performed customer-needs mapping to arrive at some preliminary critical to quality (CTQ) elements. Each set of customers represented a specific stakeholder in the revenue cycle. Results are in Table 2 (p. 12).

To establish a baseline, the project team focused on accounts for the period of February through April 2011. The team calculated the contract variance dollars collected during the baseline period at \$342 per day. The total dollars available were not measured.

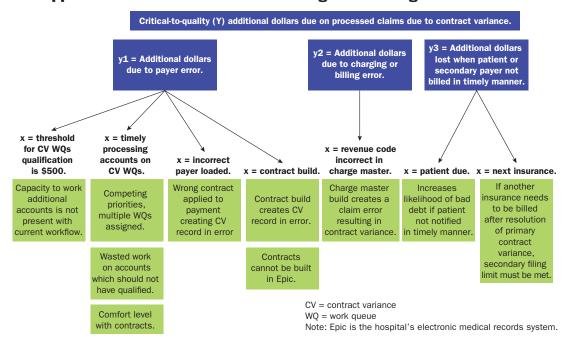


Figure 2. Opportunities identified while reducing the backlog

Baseline measurements also revealed that the current process could not keep up with the volume of contract variance records generated. During the baseline period, work queues holding contract variance accounts received 12% more accounts each month than were removed. With each passing month, the work queues became larger and the accounts older.

Measure and analyze

It was clear the first order of business should be to focus directly on the accounts currently populating the work queues. The project team took a SWAT team approach—taking dedicated staff resources to a central location to work on the 900 accounts in four to eight-hour shifts.

The SWAT team met weekly; however, two managed care specialists were assigned to these accounts on a full-time basis. Team members gained knowledge from each other and were able to reduce the total number of accounts by 600 in three months (see Figure 1).

Because each account added to the total story, the SWAT team collected data from each account as it worked. Figure 2 summarizes the data. The team determined its work would focus on timely processing of accounts. The team would establish an upper specification limit in days, which would direct the employee to take a first action to a contract variance account within seven days.

In doing so, the payer would have recently reviewed the patient account and would be more likely to make an additional payment quickly if indicated. The process to ensure the volume could be handled and the timeliness maintained would be a major focus in the improve stage of the project.

The project team also sought to measure opportunities to reduce waste in the form of accounts populating the work queues, though no opportunities to collect additional contract dollars actually existed. Two sources of waste were defined:

- 1. If the wrong insurance plan had been applied to an account after it was created, the wrong contract would be applied to the payment.
- 2. If the contracts were not maintained, outdated specifications would be applied to the payment.

In both cases, the effort to review the accounts would not lead to additional contract dollars and therefore was wasted.

Improve

Given the complexities of contract management, the team needed to evaluate the nature of the work and the skill set it required. A few people with the right skills could work through a large number of accounts in a short period of time. Assigning contract management specialists to these accounts would connect the skill set with the task. Ensuring the work queues would be addressed as the accounts populated was essential.

A pilot was conducted and evaluated the effectiveness of using two dedicated employees to address the contract variance issues. During the pilot, the two indi-

viduals accomplished 113% of the workload created, ensuring the volume would be addressed in a timely manner. Evaluation of the strength of the improvement found the improvement to be stable (Figure 3).

Deaconess leadership decided to permanently reassign the contract management specialists to patient financial services. Having been a part of the finance department, they were involved with contract maintenance and heavily invested in the revenue cycle. The move would maintain focus on the accounts populating the contract variance work queues, making it possible to incrementally lower the \$500 threshold while keeping up with the volume.

The contract management specialists shared their knowledge and expertise with the account representatives in patient financial services by providing continued training and mentoring. This knowledge empowered the representatives to identify additional accounts. A new workflow provided an avenue to transfer these accounts to the managed care specialists for review and action, even though they did not initially qualify for a contract variance work queue.

Reducing waste

A review of accounts with the wrong payer plan assigned to them revealed that the errors primarily occurred in the assignment of five different plans (see Figure 4).

The team explored options to error-proof the process. The registration system offers a visual cue suggesting potential payer plans based on the patient's place of employment. After studying the troublesome plans, the team was able to strengthen these cues to improve accuracy. Specific visual cues were designed for these five plans. As long as the employer is selected correctly, the system now will offer the correct payer plans from a pre-selected list (see Figure 5).

Table 2. Customer needs mapping

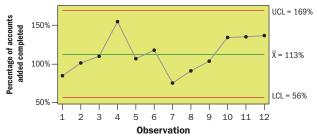
Customers	Voice of the customer	Customer needs	Critical-to-quality elements
Hospital	Unable to take advantage of dollars owed because the contract variance threshold is set too low.	Dollars owed.	Recapture underpayments.
	Slowness in current process results in dollars written off for past filing limit; it is too late to collect.	Timely collection.	Decrease past filing limit dollars
Payment posters	We make high-level judgments, but mostly allow accounts to populate contract variance work queues if in question.	Knowledge of contracts.	Less steps in process to determine adjustment.
Hospital billing (HB) follow-up	Many accounts populate work queues and do not need to be there; there is no action to be taken.	Account only populates one work queue.	Standardized prioritization.
	Accounts hit multiple work queues.	Clear assignment of contract variance work.	Account on contract variance work queue gets to complete status < 30 days.
	Contract variance is lowest priority of all accounts populating HB follow-up work queues.	Simplification of handling accounts with more than one issue; for example, an account has a denial and also a contract variance.	Removed accounts = added accounts weekly.
			Decreased total contract variance accounts on the work queues.
Customer service	If action is not taken by HB follow-up in a timely manner when a patient amount due is created, the patient's bill is delayed, creating patient satisfaction concerns.	Timely processing when patient due amount results.	Patient due balance is determined and communicated in a timely manner.
Finance	A variety of issues affect correct outcome of these accounts, including the ability to understand the contract and calculate it correctly. The poster should not adjust the account unless certain a contract variance does not exist.	Good reports to determine contract performance.	Employee competency to work contract variance.
		Increased knowledge of patient financial services workflow.	Subject matter expert available to patient financial services
Payers	Will not pay additional claims if request is past agreed upon filing limit.	Timely reprocessing.	Timely actions.
		Knowledgeable contract specialists at Deaconess.	Decrease in adjusted claims required.
Patients	Delays in billing contribute to dissatisfaction.	Accurate and timely billing.	Patient amount due is determined in a timely manner.

Figure 3. I-MR chart: Percentage

Stability report

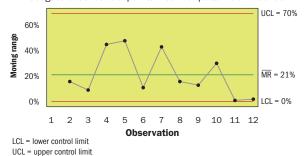
Is the process mean stable?

Investigate out-of-control points. Look for patterns and trends.



Is the process variation stable?

Investigate out-of-control points. Look for patterns and trends.



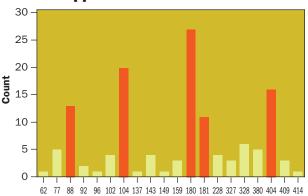
An additional factor surfaced that affected the way the insurance claim was populated and transmitted to the payer. Many payers compensate the hospital based on correct codes applied to the insurance claim. At issue were the use of revenue codes and units of

service. The system would not accommodate the payer preferences for code combinations. Sending identical claims for each payer was not possible because payer requirements differed.

Because standardization was not an option, the team generated a quality function deployment matrix (Figure 6, p. 14) to assess the alternative systemic solutions. In the end, the selected solution also required a change to the system charge master, which accommodated the payer preferences and produced better quality claims.

Isolating contract maintenance issues and accomplishing regular updates to keep contract details current also was important. As the SWAT team worked through the accounts, it surfaced contract maintenance opportunities and updated the details in the system.

Figure 4. Insurance plan codes incorrectly applied



Control

The control plan was simple yet effective. The team sought to measure the increase in contract variance dollars collected and decrease the threshold while monitoring the process capability to keep up with the volume.

Because the work on these accounts may not yield actual dollars for several months, the control plan allows for delayed reporting. Figure 7 (p. 14) shows that dollars identified early in the project began to accumulate four months later and exceeded expectations. It was not until month five that Deaconess realized the dollars from the early work—increasing dollars collected per day by \$3,818. These improvements have been sustained for seven months.

Figure 5. Account selections

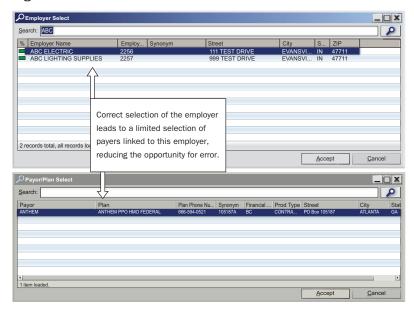
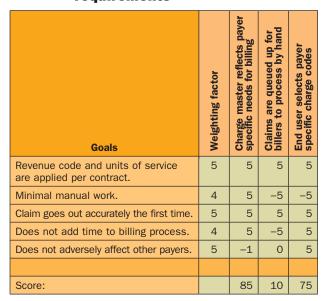


Figure 6. Assessing solutions for sending claims meeting individual payer requirements



Keeping in mind the beginning contract variance threshold was \$500, all variances \$499 and lower were not identified. The ultimate goal was to not only collect on the known variances, but also to reduce the threshold, allowing the team to address money previously untouched. The team measured the stability of the new process to determine the timing of a threshold change. Figure 8 follows the ability of the new process to meet the daily demand.

Over time, 100% of the work is expected to be completed daily. Since the process went into control, 113% of the work has been completed daily. The stability of the new process allowed the health system to reduce the threshold incrementally, pushing additional accounts to the forefront along with the opportunity to collect dollars previously unidentified.

Ongoing commitment to quality

Along with the financial gains from this project to improve the collection of contract dollars, Deaconess Health System likely will encounter new challenges. Eventually, when the threshold for creating a contract variance record is low enough, payers who have become accustomed to some latitude will be asked to fulfill contract terms to the letter, which may affect future contract negotiations. The health system will make use of identified trends in payer discussions.

Contract variance became a pivotal project under

Figure 7. Dollar results began to accumulate after four months

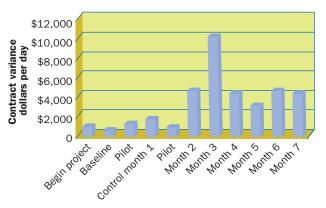
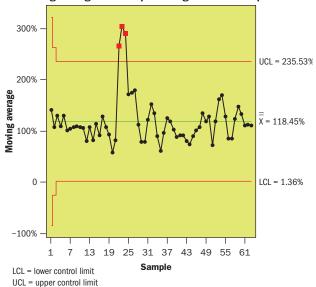


Figure 8. **Keeping up with contract** variance demand

Moving average chart of percentage of work complete



the revenue cycle umbrella. Building on its success, subsequent projects were completed in shorter time frames with significant financial return.

Deaconess Hospital values are based on a commitment to quality. The organization defines quality as the continuous improvement of services to meet the needs and exceed the expectations of customers. Lean Six Sigma enables the system to respond to the challenges and prepare for the future using proven methods. •

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