Rehabbing the Hospital Revenue Cycle

How an urban, nonprofit, level 1 trauma medical center reaped $33 million by improving its revenue cycle

by Kathy Merrill

Political parties may disagree on what the healthcare bill should include, but both parties agree that dramatically escalating healthcare costs must be addressed. Some healthcare officials believe at least 30% of all healthcare spending produces no benefit to patients.¹ Healthcare providers are challenged to eliminate waste. Lean Six Sigma (LSS) is gaining popularity as an approach to drive out unnecessary costs and expenditures eating up valuable resources.

According to PricewaterhouseCoopers’ (PWC) Health Research Institute, the healthcare industry generates $1.2 trillion in waste annually.² Of the seven leading causes of healthcare waste, the institute found claims processing was the biggest financial black hole, tied with over testing (Figure 1):

Figure 1 / Healthcare’s wasted dollars

<table>
<thead>
<tr>
<th>Issue</th>
<th>Waste (billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital-acquired infections</td>
<td>$3B</td>
</tr>
<tr>
<td>Unnecessary emergency room visits</td>
<td>$14B</td>
</tr>
<tr>
<td>Medical errors</td>
<td>$17B</td>
</tr>
<tr>
<td>Hospital readmissions</td>
<td>$25B</td>
</tr>
<tr>
<td>Ineffective use of technology</td>
<td>$88B</td>
</tr>
<tr>
<td>Ignoring doctor’s orders</td>
<td>$100B</td>
</tr>
<tr>
<td>Claims processing</td>
<td>$210B</td>
</tr>
<tr>
<td>Over testing</td>
<td>$210B</td>
</tr>
</tbody>
</table>
Maintaining an effective revenue cycle is the cornerstone of an organization’s financial health. Many organizations haven’t considered improving the bottom line by picking this low-hanging fruit.

The revenue cycle, depicted in Figure 2, is a continuous process that begins with the first patient encounter and doesn’t end until payment is received. It includes the following steps:

1. Patient encounter where information is obtained, including reason for visit and insurance information.

2. Patient visit occurs and services are provided.

3. Documentation in the medical record supports the services provided and describes the diagnosis of the patient.

4. Physician documentation is translated into code. Information is entered into the claim form and submitted to payor for payment.

5. Payor reviews claim form and makes decision: either issues payment, rejects claim if additional information is needed or denies claim if deemed unbillable.

6. Healthcare provider reworks denied and rejected claims.

7. The cycle repeats.

Citing various surveys and studies, the American Health Information Management Association (AHIMA) estimates that hospitals don’t collect between four to 12% of money owed to them because of coding errors, charge description master errors and poor documentation in medical records. On top of that, the AHIMA said 25 to 30% of all healthcare claims are denied or rejected, and half of those claims will never be recovered. Revenue cycle inefficiency and waste include:

- Imprecise clinical data describing diagnosis and treatment, and insufficient documentation to support medical necessity.
- Inaccurate translation of clinical data into codes for billable claims.
• Incorrect patient demographic information collected at registration.
• Physician delays in submitting charts.
• Lack of skilled resources to code charts.
• Complexity of payor contracts.

Figure 2 / Patient and revenue cycle process

Billing in healthcare has evolved since the days of paper processing. The complexity of payor contracts can be managed by sophisticated revenue cycle billing programming if available. Human intervention is necessary to manage the outliers and areas that the software cannot
handle. Management and personnel have not oriented themselves to work with the huge amount of data generated as patients flow through the system like products moving through a manufacturing operation. LSS brings this insight to the healthcare organization.

Typical LSS projects in healthcare target departments or functions that are reminiscent of a manufacturing environment. Most projects are limited to departmental processes to improve service use and inventory management. Key stakeholders are administrative personnel, who generally do not feel empowered to make changes to improve performance. Clinicians may participate in improving administrative processes, but their experience supporting these functions on a day-to-day basis is minimal.

Hospital in the red

Kathy Merrill of Agilency was enlisted to improve revenue cycle performance at an inner city, nonprofit, level-1 trauma teaching medical center in Michigan with 443 beds and 2,500 employees that treat 20,000 inpatients and 76,000 emergency cases annually with outpatient services growing exponentially. In the CFO’s words, Merrill’s job was to “figure out why the hospital was not getting paid.” The hospital, which requested to remain anonymous, was in the red and initially wanted to plug its budget deficit by getting the county to approve a $35 million millage tax. Merrill turned to the LSS approach to improve revenue capture.

A director of a billing function commented, “How can an auto engineer [Merrill] know more about the hospital billing process than those of us who have been in the industry forever?” The answer is that the auto industry has been reducing its cost structure and using change management methods for more than 40 years. Healthcare is just starting.

Billing barriers

Cross-functional teams involving staff from all functions that interact with the revenue cycle participated in workshops that identified and prioritized barriers in the billing process. Barriers are anything that gets in the way of the employees doing their work, which can include:
• **Emotional barriers**: broken or inefficient equipment (printers, computers, lighting and desks).

• **Process barriers**: lack of clear roles and responsibilities, inefficiencies and waste in the process.

• **Cultural barriers**: employees working without a focus on outcomes, silos, leadership working without responsibility for outcomes and lack of accountability.

After conducting a barrier workshop in which the employees described the barriers preventing them from getting their work done, the teams evaluated root causes of the barriers and developed removal plans with process owners.

One team worked with the facility and physician billing department staff members to identify pending claims in the revenue cycle. Pending claims are bills bogged down because the claim requires editing or insufficient information was submitted. The team defined the baseline process while measuring the backlog of claims at each point in the process. Simply measuring the backlog of claims cleared the pipeline significantly when personnel with pending claims were asked to sort their files and identify why claims were pending. The backlog was observed to be due to heavy workloads as well as a lack of accountability in the culture. The remaining pending claims were evaluated for their root causes. In many cases, the team expanded their scope to include the administrative or clinical operation where the deficient claim originated.

In addition to understanding the volume of pending claims, the team also assessed the age of the claims. There is a saying in healthcare that the older the claim, the less value it has. Typically, claims are paid in 90 to 120 days. Most billing operators begin to reconcile claims when they reach the 150 day mark. Federal programs, such as Medicaid and Medicare, cancel claims at 365 days if they are dormant. It is quite an endeavor to keep claims alive to negotiate payment. It also costs a lot of money.
Better way to obtain payor authorization

The teams worked to reduce or eliminate pended and denied claims in a *kaizen* workshop. *Kaizen* is a Japanese word that means "change for the better."

Denied claims were another issue for the hospital. A denied claim refers to a claim that has been processed and the insurer found unbillable. Denied claims can usually be corrected and appealed for reconsideration. *Kaizen* workshops were held and involved stakeholders from all functions that create documentation for claims. After defining the baseline process and conducting a root cause analysis, one major issue contributing to denials was not receiving prior authorization from the payor for the service or procedure the patient needed. Before a service is provided, the physician must obtain insurance authorization for the hospital. The *kaizen* team documented the process to learn that the responsibility to obtain authorization prior to the service resided on registration department staff members, who collected patient information the day before the scheduled service or procedure. The team recommended that authorization be obtained during the patient boarding process. This was accomplished by simply adding a field for the payor authorization on the boarding form. The incidence of denials because authorization did not occur dropped by 60% in three months.

Opportunities in the emergency department

Emergency departments (ED) have a reputation of being unprofitable. Yet EDs typically account for around 50% of hospital admissions.\(^4\) Missing revenue opportunities in the ED is bad for hospitals and health systems. Not surprisingly, a significant portion of pending and denied claims originated from the ED. A cross-functional team targeted roomed (to keep consistent?) documentation and followed the process of chart completion, coding and billing.

The team identified a number of barriers that prevented revenue capture in the ED, including: lack of training in the coding department, delays in doctors submitting their charts to coding, delays in coders submitting charts to billing, incomplete chart documentation by doctors, and variability in language the doctors and the coders used in charts.
Figure 3 / Billing process cycle time for outpatients

Hardwiring continuous improvement

The billing departments implemented “days out” metrics (Figure 3) to understand the backlog of work on a daily basis. Management was involved to keep clinicians and support staff on task to reduce the age of the claims within the hospital. By involving billers in data collection and monitoring, they took ownership of the process and were empowered to further drive continuous improvement.
A barrier management system integrated continuous improvement into daily activities instead of it being treated as a special task. In addition to providing a structured approach to implement change, it promoted empowerment of teams to drive change and a process and measurement-based approach to performance improvement and accountability. Metrics were reviewed on a weekly basis in huddles. This helped assess progress, drive accountability and change the culture. Billers participated in huddles since they gathered performance data and understood revenue cycle issues that needed to be addressed.

Results: back in the black

The improvement project brought tangible and intangible benefits. It helped all staff better understand the revenue cycle and the level of accuracy and detail required in generating billable claims. The improvements increased biller productivity by 11%, reduced the number of claims held for quality issues by 93% and reduced the amount of unbilled claims by 80%. Overall, the number of claims billed increased by 22%. In the second year after the revenue cycle improvement, the hospital generated an increase of $33 million net revenue.

For more information

Merrill will present further details about this project at the 2013 World Conference on Quality and Improvement in Indianapolis on Tuesday, May 7, at 9:15 a.m. Visit http://wcqi.asq.org/.

About the author

Kathy Merrill is a professional change agent dedicated to driving substantive and sustainable performance improvement during her 30-year career in the automotive, government and healthcare industries. Merrill’s previous clients include General Motors; the U.S. Navy; Torrance, Centura, Oakwood and Hurley Medical Centers; the states of Washington and Oregon; the District of Columbia; Ottawa, Canada; Faurecia; Bosch; Audi; GKN and Amtrak. Merrill is credentialed in lean by General Motors and the W. Edwards Deming Institute. She received her
bachelor’s degree in business administration from the University of Michigan in Ann Arbor and an MBA from Eastern Michigan University in Ypsilanti. She is a member of ASQ.

References: