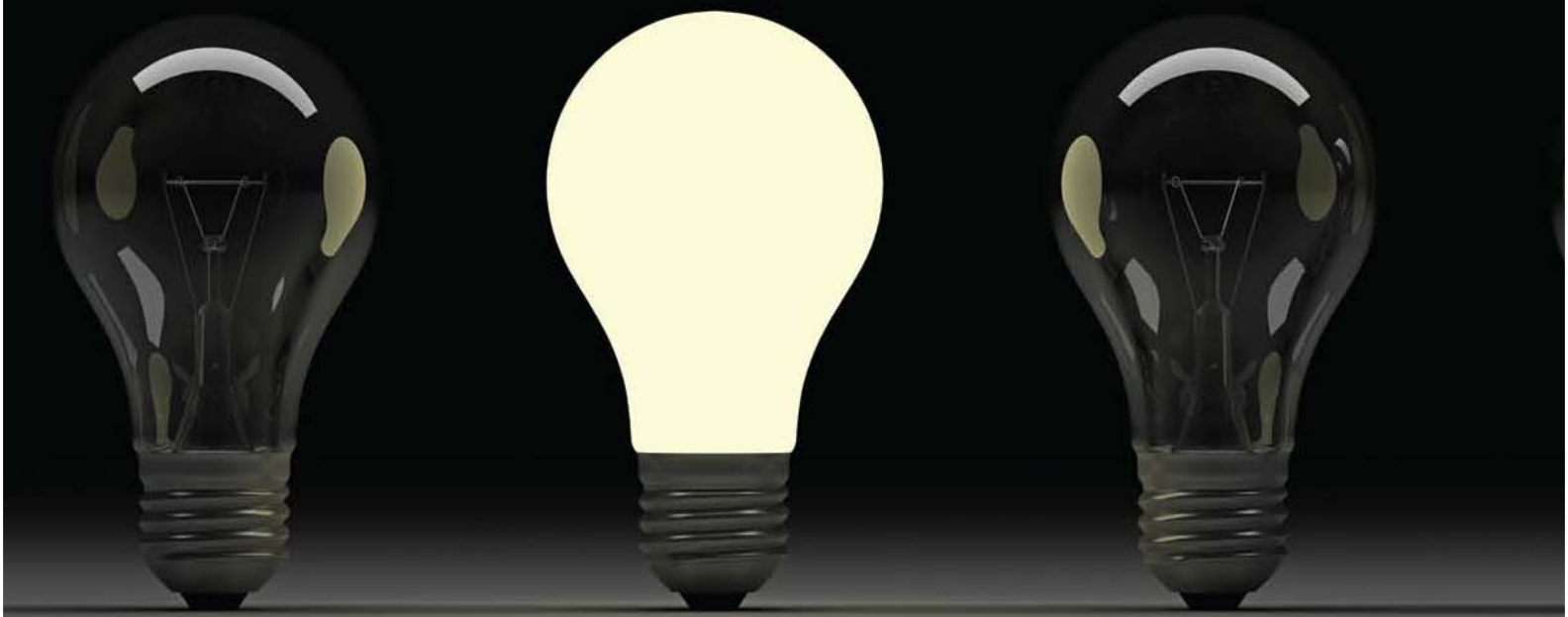
ACHIEVING PROCESS INNOVATION

Washington hospital improves capacity, quality and nets CMS, P4P honors



By Elaine S. Couture, RN, and
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In 2008, Sacred Heart Medical Center & Children's Hospital was named the top performer nationwide in a Centers for Medicare & Medicaid Services (CMS) and Premier Healthcare Alliance pay-for-performance demonstration project, which rewards hospitals for delivering higher quality of care in five clinical areas.

The project, called the Hospital Quality Incentive Demonstration (HQID), ranked Sacred Heart, Spokane, Wash., in the top 10 percent in the country for overall quality in the clinical areas of acute myocardial infarction (AMI), heart failure, pneumonia and hip and knee replacement. It ranked in the top 20 percent for coronary artery bypass grafting surgery (see sidebar on page 26). By focusing on operations from a strategic and organizationwide perspective, Sacred Heart improved its quality and patient and physician satisfaction levels.

To understand how Sacred Heart achieved its success requires insight into the operational challenges it overcame. In 2003 the organization embarked on an effort to reduce the number of hours the emergency department (ED) was in diversion mode (time spent diverting ambulances to other local hospitals) and to create patient capacity in the hospital. Addressing quality was not our main goal. We believed the quality of care we delivered was good. What was suffering was the organization's bottom line. Sacred Heart was losing millions of dollars each year because it was turning away ambulances on average 80 hours per month. On top of that, 7 percent of ED patients left before receiving treatment due to extended wait times. All of this was because the hospital was unable to efficiently manage its patient volume. The end result was low patient satisfaction, canceled surgical cases, frustrated demand for service and a financial loss for the first time in Sacred Heart's history.

We believe throughput means getting patients admitted, treating their illness and getting them home or to a different level of care. Efficient throughput increases patient and staff satisfaction, supports clinical quality and safety initiatives, decreases or eliminates ED diversions and improves financial performance.

With that in mind, and with the help of EMPATH Consulting, the hospital set out to redesign its processes to improve patient flow using five key strategies:

- **Communicate the vision**. Senior leaders were responsible for creating the strategic vision and communicating it by tying it to the hospital's mission. The goal was to create a collaborative culture throughout the organization that emphasized teamwork.
- **Engage front-line staff**. Management created Process Action Teams (PATs). Their charge was to develop the processes that would lead to efficient patient throughput. PATs consisted of staff and physicians who had the most involvement in and impact on patient flow. Management was not generally included.
- **Enlist change management experts**. The organization partnered with consultants who practiced principles of enterprisewide process redesign including concepts and tools from Michael Hammer, W. Edwards Deming, Lean, Six Sigma, clinical microsystems, Kaizen and others.

- **Benchmark to industry best practices**. The PATs looked at healthcare and other industries' best practices to adopt solutions and create new practices.
- **Implement real-time information technology (IT)**. IT software solutions were designed and implemented to meet the hospital's operational data needs related to patient flow.

We attempted process improvement in the past, but it was always at the department level and never sustainable. Someone from a department would attend a seminar and return with ideas on how to be more efficient, but hospital staff and managers would consistently defeat change initiatives. We believed that implementing an enterprisewide process redesign—rather than limited, department efforts—would help us change the culture and accomplish our goals. The processes focused on the overall needs of patients and physicians' practices rather than the efficiency of a single department.

Faced with the results of out consultants' strategic assessment, and the fact we were losing millions of dollars, it was imperative that something be done and that it needed to be driven by senior management, starting with the CEO. Senior leaders knew that the investment in process redesign would involve substantial commitments of money and staff time. Sacred Heart executives had only one shot to get it right or risk losing staff support, confidence and the financial viability of the hospital.

Sacred Heart decided to focus its process improvement efforts in one major area: all nursing units and departments that interacted with nursing to impact patient flow. (Birthing units were not part of this redesign but were addressed later on.) The organization believed that by developing consistent, reliable processes for managing common and predictable events, much of the chaos of daily operations could be eliminated, allowing staff to focus their attention on unexpected events.

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We also decided to focus our attention on redefining the role of charge nurses and house supervisors. Through the strategic operational assessment, we discovered no one was managing the front line. While these nurses were supervisors, their roles were not well defined, thus they

PROCESS REDESIGN LEADS TO NATIONAL RECOGNITION

An unplanned outcome of the Sacred Heart Medical Center & Children's Hospital process redesign was being named the top performer of the Centers for Medicare & Medicaid Services (CMS) and Premier Healthcare Alliance pay-for-performance demonstration project.

Due to its successes, Sacred Heart received the top bonus payment of more than $385,000 from CMS in 2008 for ranking in the top 10 percent in the country for overall quality in the clinical areas of acute myocardial infarction, heart failure, pneumonia, and hip and knee replacement. It ranked in the top 20 percent for coronary artery bypass grafting surgery. CMS awarded incentive payments of more than $7 million to 112 hospitals in 2008, with more than $24.5 million awarded during the first three years of the project.

In 2007, Sacred Heart received more than $256,000 from CMS, the fifth highest amount awarded to any hospital.

The HQID is the first national project of its kind, designed to determine if economic incentives to hospitals are effective at improving the quality of inpatient care. Thirty evidence-based clinical quality measures are collected from more than 250 hospitals nationwide that participate voluntarily. Improvements in quality of care saved an estimated 2,500 acute myocardial infarction patients in the United States the first three years of the project, according to CMS analysis of mortality rates at hospitals participating in the project.

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spent much of their time serving as nursing backups or holed up in their offices writing out schedules.

With senior-level executives on board and the scope of the project defined we were now ready for redesigning every single process with an emphasis on eliminating delays in patient movement, diagnosis and treatment. Process redesign was all encompassing, involved operational innovation and ranged from the simplest processes such as planned meals and breaks to complex processes such as patient discharge planning.

PATs were created to redesign processes. They were made up of front-line workers representing all key jobs and were guided by experienced consultants.

Development began by outlining existing processes, defined as the "As Is" processes, and then creating new processes, which we termed "To Be" flows. To Be flows eventually were broken down into designed sub-processes that continued to be reviewed by PATs until they were "flushed out" to a level where a critical part of the process could be tested.

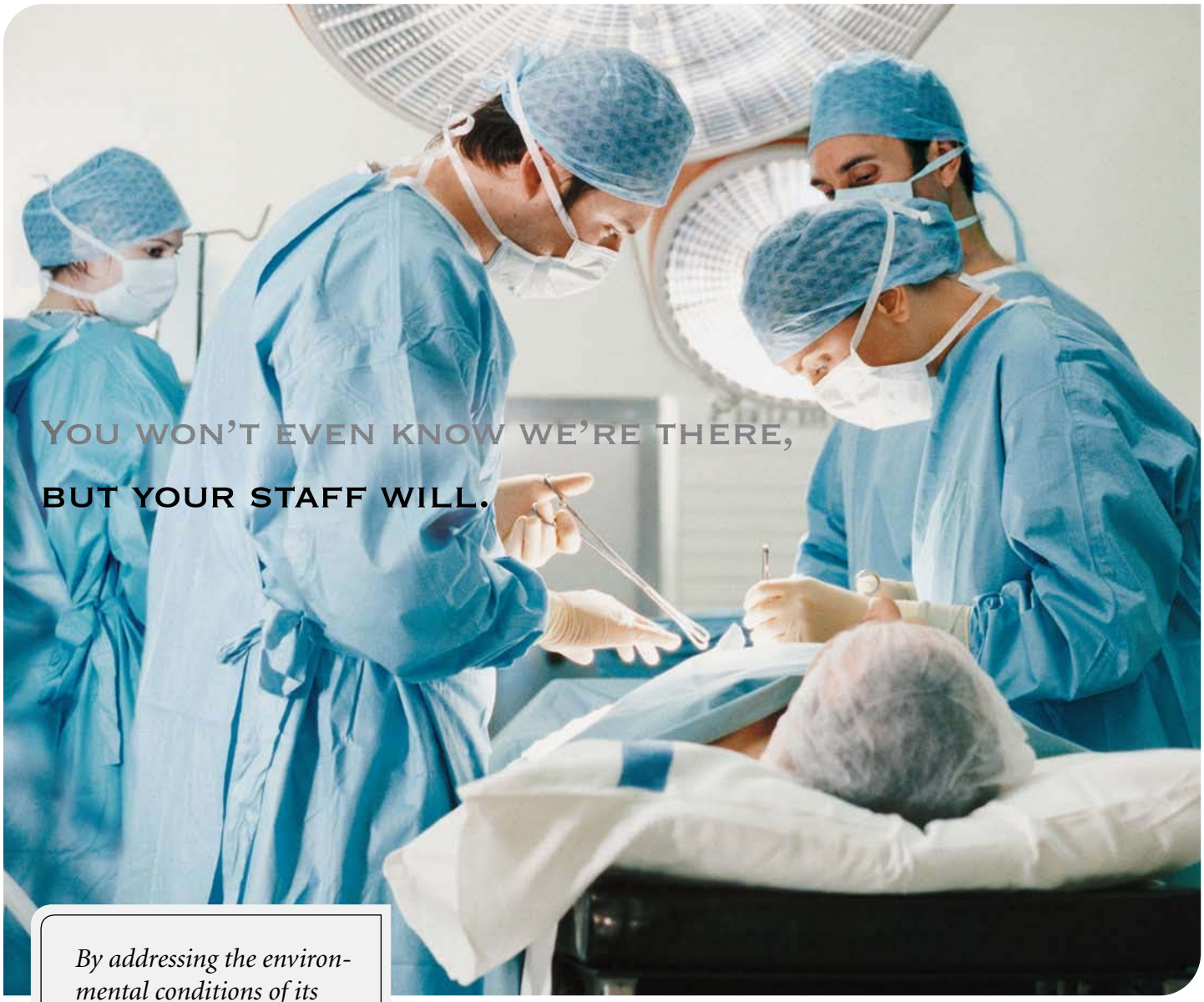
During the development process, detailed presentations were shared with steering committees made up of representative managers, directors and vice presidents to get management feedback and support to move forward.

PATs shared their expectations of the new process with managers and staff prior to testing. During testing, PAT members were mentors to participating areas to coach, educate staff and gather data about what worked and what did not work. Using this information, PATs modified the process and then planned for implementation. A week prior to implementation, managers were briefed on the process and staff was directed to a

BREAKTHROUGH OPERATIONAL INNOVATION

To gain and sustain true breakthrough innovation requires a total redesign of operations, not simply improving upon existing processes. You have to rethink critical dimensions of the work involved. Breakthrough operational innovation moves a company to a significantly higher level of performance. Once there, the organization can focus its efforts on additional changes—refinements of innovation—that will keep it ahead of the pack. Below are the steps in breakthrough operational innovation:

1. Cultivate a culture that promotes innovation
2. Communicate senior leadership vision for process innovation
3. Form teams of front-line staff
4. Create new processes by first understanding existing ones
5. Design new processes by first identifying key performance indicators
6. Undertake job-aid training tools
7. Communicate expectations to managers and staff
8. Perform testing that temporarily implements a newly designed process in a limited area of the organization
9. Identify issues and solutions
10. Improve process design as needed
11. Develop training modules accessed on line
12. Educate staff on new processes
13. Communicate expectations for process outcomes
14. Use Process Action Teams to mentor staff during implementation
15. Identify issues and solutions
16. Resolve issues through process modification
17. Ensure that process owners observe/coach to process
18. Reward and recognize accomplishments
19. Measure/monitor critical aspects in real time
20. Manage process trends



By addressing the environmental conditions of its facility, Bronson Methodist Hospital lowered nurse turnover by 10.2 % and has been recognized as one of the Nation's Best Places to Work.

Designing the 21st Century Hospital; RWJF, 2004; Zimring, C. Georgia Institute of Technology; Ulrich R. Texas A&M University, 2004

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Web-based training module. Once implementation began, mentors positioned themselves on units to support, coach, problem solve and gather feedback for additional improvements to the process.

Even before the process redesign was complete, our ED diversions dropped precipitously within six months.

Throughout these steps, which were happening simultaneously for five to six processes at a time, PATs were visited and supported by their vice president sponsor. Implementation often occurred weekly or biweekly. It was important to break up this enterprisewide, large-scale process redesign implementation into a series of limited releases (modules) to create momentum and dispel skepticism and anxiety among staff. In the end, more than 200 processes were redesigned.

We adopted enterprisewide re-engineering methodologies used in other industries such as manufacturing and applied them to healthcare. When process improvement tools are used in healthcare settings they are typically implemented in one department of the hospital. Sacred Heart implemented enterprisewide process solutions across multiple departments throughout the hospital including the ED, ICU, radiology, OR, inpatient units, pharmacy, housekeeping, registration and transport.

As staff was designing processes, computer software programs were created or purchased to support the processes and provide automated dashboards that allowed real-time process management and evaluation. The dashboards measure key performance indicators, provide a universal picture of operational status and allow process owners to focus on top priorities and enhanced teamwork.

In all, 61 process modules were introduced, taking 52 weeks to complete, and the results were better than we could have imagined. Even before the process redesign was complete, our ED diversions dropped precipitously within six months, and by July 2004 our monthly ED diversions fell to 60 from a high of 172 hours in July 2003. By October 2004, we eliminated ED diversions, and in all of 2005 and 2006 there were only a handful of hours. Since then, ED diversions have varied each month, with an occassional monthly high of 20 diversion hours and one or two months where it has reached above 50 hours. But this is mainly due to true capacity issues because Sacred Heart's ED now averages more than 2,500 patients per bed per year.

We have been able to greatly reduce ED diversions (even eliminating them for many months), while increasing our patient volumes. We have sustained ED patient counts of more than 5,000 per month since July 2006 and have surpassed 6,000 per month on several occasions. Prior to the process improvement redesign Sacred Heart's patient visits were fewer than 4,000 per month on average. In addition, the percentage of ED admissions has stayed fairly constant at about 20 percent since the redesign, but the average length of stay at the hospital has declined to 4.87 days from 5.2 days.

Other sustainable indicators realized in the first three years include:

- An increase in the average daily census to 410 from 364
- A 34 percent increase in net patient revenue
- OR first case on-time starts to 83 percent from 35 percent
- OR volume increase by 20 percent
- A $7.75 million gain in one year (2005), resulting from keeping the ED operational with only 24 hours of ED diversion
- A total net income gain of $22 million in 2005 compared to a $3 million deficit in 2004
- An increase in net patient revenue per adjusted admission to $12,909 in 2007 from $11,312 in 2004

These and other successes can be linked to process redesign and the revamping of job descriptions, particularly those of managers and charge nurses. The charge nurse previously served as a backup for clinical care when another nurse went on break. Now the charge nurse operationally supervises the floor by managing the resources of the unit and the processes important to patient throughput. It may seem as though patients would be receiving less nursing care,

but by managing operations, charge nurses help to expedite the treatment process by getting patients from one place to another in the hospital. This results in physicians seeing patients sooner and providing treatment more quickly, which leads to patients healing faster. You can't accomplish this unless you are paying attention to operations.

The charge nurse's role is to monitor the unit's activity level hourly and input that information into the Hospital Activity Status Board (HASB), a software program that measures activity in each unit and calculates a census action plan based on a five-level system. On computer screens hospitalwide, threshold levels are displayed showing where there are nurse staffing needs and where help can be obtained. The HASB is integrated in an information technology system that includes a census activity worksheet and a bed management system. The house supervisor position was redesigned to include troubleshooting potential capacity problems. This nurse carries a small, wireless laptop to view the capacity level of all nursing units wherever he or she may be in the hospital and redirects nurses where they are needed the most. This kind of technology helps the organization create operational transparency to support the newly designed processes, reducing variation between staffing levels and ensuring long-term sustainability.

We believe that if you don't have your processes clearly identified, mapped out for the organization and monitored in real time, you are going to have variability in processes leading to failures in quality of care, patient safety and handoffs. In our ED, for example, treatment plans are written for every process (patient illness). When a stroke patient comes in, a specific process plan is in place to treat him or her, but if that process is not followed each and every time, the ED cannot predict how much time or resources the case will take. And with the inability to predict comes variability in quality of care. By understanding at the sub-process level what is causing those variations you will be able to achieve better results in quality and patient satisfaction.

Sacred Heart's achievements show that staff and leadership can continue to sustain these gains, while continuously making improvements in a very competitive and challenging healthcare environment. We believe Sacred Heart's culture and operational approach to improving quality and commitment to the community will continue to make us even better in the future.

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