



Case Study

High-Performing Health Care Organization • July 2011

Fairview Southdale Hospital: Efficiency Through Quality and Innovation

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Vital Signs

Hospital: Fairview Southdale Hospital

System: Fairview Health Services

Location: Edina, Minnesota

Type: Private, nonprofit hospital

Beds: 390

Distinction: Recognized as one of 13 “Highest Value Hospitals” by the Leapfrog Group in 2008, based on efficiency scores that took into account quality of care as well as resource utilization. The hospital, which was selected from nearly 1,300 hospitals that had voluntarily submitted data, received a top efficiency score for all four conditions/procedures examined (coronary artery bypass graft, percutaneous coronary interventions, treatment of acute myocardial infarction, and pneumonia care). See [Appendix A](#) for full methodology.

Timeframe: Hospital data from 2007.

Focus: This case study describes the strategies and factors that appear to contribute to high efficiency at Fairview Southdale Hospital. It is based on information obtained from interviews with key hospital personnel, publicly available information, and materials provided by the hospital during late 2010.



SUMMARY

Fairview Southdale Hospital (Southdale) has been recognized as a “Highest Value Hospital” by the Leapfrog Group in four clinical areas for two years in a row. It was the only hospital to receive this distinction in both 2008 and 2009.

The Highest Value designation, defined by high-quality care and low resource use, can be traced to a number of Southdale’s organizational, cultural, and environmental features:

- Southdale is in a region with a strong community-focused medical tradition and a prevalence of large physician groups that foster communication and efficiencies.
- Southdale hires and nurtures administrators and physician champions who are committed to improving the quality of care.
- Administrators provide strong support for clinical and process improvement through a triad leadership structure (with physician, administrator, and operational leaders).
- The hospital enhances its staff capacity by creating nurse training opportunities, using a capacity alert process, sharing staff resources across departments to meet demand, and using hospitalists and intensivists to improve quality and efficiency.

In addition, Southdale engages in specific strategies that contribute to high value, including:

- involvement in the Centers for Medicare and Medicaid Services/Premier Hospital Quality Incentive Demonstration;
- use of a performance dashboard, with targets for productivity, requirements for staff to pursue efficiency projects, and incentives to achieve savings;
- the use of a visual control tool for tracking expected and actual patient discharge dates, which helps nurses reduce length of stay;
- the creation of a cardiac clinic and care management program to reduce readmissions of discharged heart failure patients;
- fast and effective treatment for heart attack patients, including use of wireless technology to transmit patient data from ambulances to the hospital;
- having pharmacists help manage inpatient care to reduce pharmaceutical spending; and
- use of health information technology at the bedside, including an electronic health record (EHR) that alerts clinicians to signs of patient deterioration and offers evidence-based care guidelines.

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Efficiency Case Study Series

Eager to foster higher value in the health care system, providers and payers have worked to promote more rigorous adherence to quality standards and reduced resource use, particularly when higher utilization can be demonstrated to be of little or no added value to patients.

This case study is [part of a series](#) that highlights best practices among hospitals that have excelled at meeting these efficiency criteria. We used the Leapfrog Group's Highest Value Hospital recognition program to identify eligible hospitals. For more information on how hospitals in this series were selected, see [Appendix A](#).

INTERNAL AND EXTERNAL ENVIRONMENT

The Hospital

Fairview Southdale Hospital is a 390-bed, multispecialty medical center located in Edina, Minn. It has a long history of serving the southwest Minneapolis/St. Paul community, has the area's oldest Level III trauma center, and a Joint Commission–certified Heart, Stroke and Vascular Center. The hospital offers a comprehensive set of services, many of which—such as cardiology, oncology, and orthopedics—are organized as service lines. It serves approximately 500,000 patients each year.

The bulk of Southdale's admitting physicians participate in large practices, which include system-owned, affiliated, and independent groups. Most inpatients are cared for by a team of hospitalists. Southdale is engaged in what leaders call "friendly" competition with local Allina Hospitals and Clinics and [Park Nicollet Health Services](#).

Southdale's strategic goals include a focus on efficient use of resources, exceptional clinical care, improved patient and family experiences, strategic growth, and research support. To help improve quality and efficiency, it has deployed health information technology at the bedside, incorporating evidence-based guidelines into patients' electronic health

records. This brings the “best evidence to the nurses’ fingertips,” according to Judith Pechacek, D.N.P., R.N., Southdale’s chief nursing officer, and alerts them to signs of patient deterioration so physicians do not have to be called as often.

The System

Fairview Health Services is a large, integrated health system headquartered in Minneapolis, with over 22,000 employees and 2,500 affiliated physicians. The system includes seven hospitals, more than 40 clinics, urgent care facilities, pharmacies, home care services, hospice, rehabilitation services, laboratory facilities, and mental health facilities. Through a partnership with the University of Minnesota Academic Health Center that has been in effect since 1997, the system also pursues major research initiatives and owns and operates the University of Minnesota Medical Center and the University of Minnesota Amplatz Children’s Hospital.

Being part of a large health system has a number of advantages for Southdale, such as access to University of Minnesota faculty as well as legal and information systems support. It also provides economies of scale and opportunities to standardize certain practices, such as hospital drug formularies, which save time and resources.

We work together, look for efficiencies, talk about the latest breakthroughs.

Stephen Battista, M.D., chief of staff
and quality improvement director,
University of Minnesota Physicians Heart clinic

Fairview Health Services is overhauling its EHR system to achieve interoperability across hospitals and clinics. Using the system’s online MyChart tool, Fairview patients are able to schedule appointments, request prescription refills, access lab results, and send e-mail messages to their care team.

Most of the process improvement techniques described in this case study were developed and implemented at Southdale, and are not employed

system-wide. Similarly, while hospital risk management staff share their findings across Fairview hospitals and hospital CEOs frequently consult with one another, the sharing of best practices across the health system seems more informal at Fairview than in other integrated health systems. This decentralized approach to quality improvement is changing, however.

Recently, the health system established a common quality agenda intended to move member hospitals from the current environment of friendly competition to one focused on shared goals.

Fairview Health Services is transforming the way care is delivered in other ways as well. It recently partnered with a major local health plan to develop an accountable care organization (ACO), with a goal of aligning financial incentives with improved patient care.

The Environment

Minnesota has been a leader in health care innovation—and is ahead of the curve in both public reporting of health care quality and the creation of new delivery models. Southdale undoubtedly benefits from this environment. Southdale physicians who have practiced in other regions say that health care in the Twin Cities tends to focus on community needs, and is less political, fragmented, and financially driven than it is in other parts of the country.

Physicians in the Twin Cities tend to practice in large groups instead of the small and solo practices that predominate in many regions of the country. Most specialists in the area have organized as one or two large group practices, which means fewer referrals and improved coordination of care. According to Stephen Battista, M.D., chief of staff and quality improvement director for his cardiology group, the University of Minnesota Physicians Heart Clinic, “we work together, look for efficiencies, talk about the latest breakthroughs.” Large physician groups can also be structured to reduce perverse incentives. For example, one of the large cardiology groups affiliated with Southdale divides all revenue equally between its 20 partners, reducing the incentive for physicians to order expensive tests or procedures since the increased income would be quite diluted.

Large physician groups can enable efficient communication, decision-making, and high-quality care. For example, the cardiology group has found that implementing new clinical protocols among its physicians is a relatively easy process. When making changes to the compensation structure, health system administrators only have to reach out to few large practices rather than contacting numerous small and solo practices.

ORGANIZATIONAL/CULTURAL FACTORS THAT MAY CONTRIBUTE TO EFFICIENCY

Leading with Quality

Over the past decade, Southdale's presidents have focused on improving health care quality and nurturing physician leaders. They have encouraged physicians to take an interest in their outcomes data by institutionalizing reporting structures and analyzing the hospital's performance.

In 2003, Southdale joined the CMS Hospital Quality Incentive Demonstration, which allowed hospitals that performed well on certain process-of-care measures to qualify for additional Medicare reimbursement. At Fairview, this work led to creation of a system to ensure compliance with these care processes. Southdale's participation in this demonstration also helped it formalize and expand its quality improvement strategy and infrastructure. In the first year of the demonstration, Southdale performed among the top 10 percent of participating hospitals in most measures.

Southdale invests time and resources into quality improvement activities, such as standardizing processes and reducing variation in care, with a primary goal of improving patient outcomes. Efficiencies often follow from these activities, including decreases in the average length of stay and reductions in preventable readmissions. But improving patient outcomes sometimes translates into higher costs in the short term. For example, the hospital cancelled its wound care outpatient clinic dedicated to healing patients with slow or nonhealing wounds because it was losing money on the service, but reinstated it when the result was a void in the community for such care. It has also

supported a chronic care management clinic and tele-assurance program for cardiovascular patients (described below), which help keep patients out of the hospital and thereby reduce revenues. In some cases, however, the costs of care for heart failure admissions and readmissions exceed revenues, so the clinic and tele-assurance activities are financially advantageous to the hospital.

Southdale's efforts appear to have led to significant improvements in quality. It is one of the few hospitals to have a 30-day mortality rate for heart failure patients that is statistically better than the U.S. national rate, according to the CMS Web site, Hospital Compare. The inpatient mortality rate among heart attack patients has decreased from 10 percent in 1999 to 2.5 percent in 2008. The hospital is now shifting its priorities to focus on improving patients' satisfaction, which its Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores indicate need improvement.

If you keep looking at the data, and you have a competitive spirit, you keep getting better.

Stephen Battista, M.D., chief of staff and quality improvement director

Physician Champions

Physicians take an active, leadership role in Southdale's quality improvement activities. The process for developing physician champions is deliberate yet somewhat informal. Southdale's vice president of medical affairs identifies, nurtures, and selects certain physicians to lead quality improvement committees; others emerge naturally. Battista is a physician champion at Southdale. Before arriving at Southdale 18 years ago, Battista had been active in clinical trials and performance measurement in other cities. At Southdale he established a process to collect outcomes data and provide feedback to clinicians. "If you keep looking at the data, and you have a competitive spirit, you keep getting better," he says. Battista also educated clinicians on evidence-based practices to

improve acute myocardial infarction (AMI) care through a series of presentations to nurse coordinators, hospitalists, emergency department physicians, and key internal medical groups. Although some physicians were initially suspicious of the data and reluctant to change their practice patterns, Battista's focus on the benefits to patients of evidence-based care helped bring everyone on board.

Process Improvement

Southdale has multiple structures in place to facilitate process improvement. When a problem is identified, a rapid process improvement (RPI) team comprising frontline staff and others holds brainstorming sessions until a formal strategy—with goals, tasks, and responsibilities—has been formulated to address it. The RPI is “PDSA [Plan-Do-Study-Act] on steroids” says Mary Jo Swanson, D.N.P., M.P.H., R.N., vice president of operations. The intensity of the sessions helps keep the team focused on creating a workable plan for achieving results. One interviewee contrasted Southdale's approach with the process she experienced at other hospitals, “which can go on and on with no real solution.”

Southdale is not committed to any single process improvement tool, but instead chooses from a variety of classic and home-grown quality improvement techniques for each project.

All projects are assigned an executive champion and facilitator. The facilitator is accountable for the team's work, helps move the project along, and ensures the necessary resources can be secured. All hospital directors receive training in project facilitation as part of the hospital's strategy to embed process improvement in the fabric of the organization. For projects that are complex and involve the broader Fairview system, a consultant from Southdale's process improvement department is typically assigned to help facilitate.

Southdale's “Lead Quality Committee,” comprising physician leaders, directors, and managers from all departments, sets the quality improvement agenda and goals for the hospital. The team focuses on

proactive initiatives, such as anticipating new CMS regulations and reporting standards. Each medical staff department has a physician, administrator, and operations leader who is responsible for making improvements to health care processes. All such activities must include goals related to clinical quality, operations and financial improvement, and patient satisfaction.

Managing Staff Capacity and Patient Flow

Southdale pays close attention to its staffing needs and patient flow. Its staffing and productivity committee, made up of representatives from finance, performance improvement, and various operational units, oversees the hiring process. Before a department head can create a new position or fill a vacant position, he or she must explain to the committee why the position needs to be filled and defend what the department is doing to improve productivity.

In some cases, Southdale opts to spend more on staffing in order to reduce costs overall. For example, it created a decentralized pharmacy service that deploys more pharmacy staff per unit. Enabling pharmacists to be more involved in patient care and creating clinical pharmacy programs produced savings from better management of drug costs.

Building Nursing Resources

The national nursing shortage, the need to fulfill nurse-to-patient ratios specified in its nurse union agreement, and the departure of many critical care nurses to get higher degrees led to two significant inefficiencies at Southdale: 1) the heavy use of costly overtime and temporary nursing staff to fill gaps; and 2) the temporary closure of units, particularly the critical care unit (CCU) and intensive care unit (ICU).

In response, the hospital developed a multi-pronged approach to expand its supply of nursing staff, particularly in the CCU and ICU. It purchased special lift equipment to help move heavier patients to keep seasoned nurses on the job longer, and initiated a “100 nurses in 100 days” recruitment campaign that gave its nurses a \$100 bonus if they referred a nurse friend who was eventually hired. The hospital also expanded

its on-campus nurse training program, using simulations for clinical and specialty care, coaching, mentoring, case studies, and teamwork building to train and increase its pool of nurses.

In addition, at the recommendation of an RPI team, the hospital focused on developing a CCU/ICU pipeline as a long-term solution. Recent nursing school graduates in the medical and surgical units were offered the opportunity to train to become CCU/ICU nurses, with rotations in the heart center, the CCU, and the ICU. Thirty-one nurses completed this training, representing a 90.4 percent completion rate. The ICU and CCU nursing staff are now able to augment one another when needed, so the ICU is no longer ever “closed.” Staggering shift start and end times within a unit has also helped to stretch patient coverage with limited resources.

Southdale focused on developing internal capacity because staff nurses are more familiar with its processes and can better help improve quality and efficiency. However, it also worked with other Fairview Health Services hospitals to develop a common Request for Proposals (RFP) for agency (temporary) nurses. The RFP leveraged the health system’s purchasing power to secure reasonable rates for agency services. More important, it formalized a protocol giving priority to the hospital with the highest need—so that the hospitals do not compete with each other for agency nurses.

Capacity Alerts

Southdale is experimenting with a capacity alert process to ensure its units are appropriately staffed according to patients’ changing needs. It uses a tracking system to monitor its capacity to accept new patients. The system displays patients by unit and identifies their expected discharge date. When patient demand exceeds available resources, an electronic alert goes out to all charge nurses. The alert identifies the unit in need and outlines the resources necessary to alleviate the shortage (e.g., two nurses needed for evening shift). The alerts are initially coded as yellow, and include a call-in number. Charge nurses with staff they

could spare temporarily are expected to contact the unit that initiated the alert and provide assistance. If the problem is not resolved, it escalates to a red alert, at which point directors and administrators are brought in help resolve the issue. This oversight provides the “teeth” necessary to make sure units are helping each other when they can. Alerts are also reviewed on an ongoing basis to identify trends and determine whether certain times of the day present recurring problems that might require staffing changes.

Nurses report that this process has promoted a sense of shared responsibility, with a community of nurses working toward the common goal of helping patients. Further, the charge nurses understand that helping others increases the likelihood that they will receive help when they need it most.

Use of Hospitalists and Intensivists

Southdale relies on a team of 15 hospitalists to care for approximately 75 percent of its inpatient population. The use of hospitalists began about 12 years ago, which fostered a team-based culture among physician staff. The hospitalists’ constant review of performance and outcomes data has motivated improvement in patient care and is credited with improving quality and efficiency. Further, because hospitalists are located on site, they are available to see patients throughout the day, expediting the discharge process and often resulting in shorter stays. A hospitalist can see patients in the morning and, if their condition improves by the afternoon, approve the patient for discharge. Although Southdale’s hospitalist program seems to improve quality and efficiency, it entails tradeoffs. Feedback from patients suggests many do not have the same bond with hospitalist physicians that they do with their community physician.

Similarly, having intensivists care for patients in the ICUs has enabled the hospital to improve compliance with safety protocols. For example, with one small group of intensivists handling virtually all ventilator and central line insertions, Southdale has dramatically reduced its rate of hospital-acquired infections. Morale among nurses has also improved since intensivists were deployed in the ICUs. And administrators

and specialists have discovered it is much easier to educate and communicate with a small team of hospitalists and intensivists than many different community physicians.

STRATEGIES AND PRACTICES THAT IMPROVE EFFICIENCY

Because Southdale requires its administrators to look for opportunities to cut costs while improving quality, many of its quality improvement initiatives have also resulted in improved efficiency. This approach, combined with a reporting process that keeps hospital leadership apprised of key metrics, helps Southdale maintain efficient operations.

Dashboard and Efficiency Project Requirement to Promote Accountability

Each department monitors its performance with a formal dashboard that shows actual experience, goals, and targets for efficiency-related and quality-related indicators including measures of processes, outcomes, patient satisfaction, use of resources and productivity, length of stay, resource allocation, resources per hospitalist, and strategic growth. Productivity-related metrics and targets—such as work hours per patient, supplies, expenses, and total operating costs—are new additions to the dashboard that enable Southdale to manage expenses based on volume rather than fixed budgets. The hospital is also using productivity software tools to develop more refined measures, including full-time-equivalent hours (FTEs) per patient day, per procedure, and per relative-based value unit.

If a department is not performing at at least 98 percent productivity for two pay periods, it must 1) submit a report to the hospital's staffing and productivity committee explaining the failure; 2) meet with the committee; and 3) meet with the hospital CEO. In addition, the leadership of the hospital and Fairview Health Services review higher-level dashboards with select and composite metrics on a quarterly basis, and any measure that does not meet its target is flagged.

Southdale requires its department directors to pursue projects that reduce cost and improve quality

using process improvement tools and methods. In 2010, each department director was required to pursue at least two projects. In order to meet performance requirements, the projects needed save at least \$30,000. To exceed performance requirements, the target was \$75,000. The entire hospital's goal for savings in 2010 was \$805,000. As of November 2010, the total savings from the program were estimated to be \$842,000.

Project results are reviewed during the directors' annual performance evaluations and "at-risk pay" is contingent on meeting the cost-savings goals. The hospital has found physicians are typically supportive of these projects because the focus of process improvement is ultimately quality and safety. They also understand the savings will be reinvested in other clinical areas.

One recent efficiency project related to finding a safe and less expensive substitute for a particular kind of implant device that was very costly. Physicians began researching other options and meeting with implant device vendors. With pricing information in hand, the physicians developed a protocol whereby implant devices are categorized according to cost and application, with the color red assigned to the most expensive devices. Those colored red can only be used if certain criteria related to medically necessity are met. The new protocol has resulted in a reduction in the use of the most expensive devices, saving approximately \$500,000 for the hospital.

Provided the suggested changes do not compromise patient safety and clinical outcomes, Southdale has found that showing physicians the cost of their actions helps change behaviors. The cardiologists, led by David Laxson, M.D., were able to negotiate volume discounts with device vendors for the cardiac catheterization laboratory. As part of the process, some vendors were asked to remove their products from the lab entirely; a couple of years later, those vendors returned with significantly lower prices.

Another efficiency project grew out of a pathologist's suspicion that the hospital was misusing and wasting its blood product supply by stocking twice

the amount of blood product than was necessary. In a presentation to physicians, she showed the difference between one-day-old blood and 30-day-old blood to make the point that it would be in patients' best interest to keep a more limited, but fresher supply of blood products on hand.

The pathologist also pointed out that the over-utilization of blood products was not only costly, but unsafe. This led to a marked reduction in the amount of blood transfused. She continued to educate physicians for another nine months about evidence-based practices, such as giving a blood "tune up" approximately two weeks before surgery to reduce the need for transfusions and improve outcomes. Her efforts resulted in better patient care, as well as cost savings. In 2009, Southdale avoided \$95,000 in costs for blood components such as red blood cells, white blood cells, plasma, clotting factors, and platelets. In the first seven months of 2010, they avoided \$67,700 in blood component costs. Southdale estimates it saved a total of \$115,000 in 2010. By avoiding unnecessary transfusions, Southdale also saved physician, nurse, and technician time, and avoided the risk of adverse reactions.

The pharmacy department has also had many successful efficiency projects. For one, the department analyzed drug utilization data to identify opportunities to use less-expensive drugs. In another project, it is partnering with a local Medicare plan to become more involved in the discharge process for Medicare patients. In that role, the pharmacists reconcile patient medications and provide critical education about drug indications. Early results of the pilot indicate a 44 percent drop in readmissions. In total, the department's efficiency projects saved approximately \$334,300 in 2009 and more than \$185,000 in the first 10 months of 2010.

Care Management Redesign to Reduce Length of Stay

Four to five years ago, Southdale recognized a need to improve its patient discharge and follow-up process, and reduce the average length of stay. The hospital

began with a RPI session that identified issues, brainstormed solutions, and set goals. A care management oversight committee comprising nursing leadership and physician advisors was created to analyze data on avoidable patient days and ask physicians what changes would help them reduce the average length of stay.

Based on its findings, the committee created the role of a care coordinator, a position filled by a registered nurse who performs utilization review and case management functions. The care coordinator's responsibilities are slightly different in every unit, but the process of preparing for discharge begins early and is intended to ensure a smooth transition between care settings. When the care coordinator identifies a high-risk case, he or she works with a social worker to coordinate the patient's discharge.

The committee also helped design and implement a visual control tool for anticipating and tracking expected patient discharge dates by diagnosis-related group (DRG). The staff that use it also contributed heavily to its design. With the tool, a patient case is flagged as yellow on "Hours of Care" if the patient is close to the predicted discharge date, and red he or she has passed the predicted discharge date (Exhibit 1).

Southdale also closely analyzes "avoidable days," a measure of the patients remaining in the hospital after they are ready to be discharged, often because they lack transportation or an available nursing home bed. Avoidable days also occur when care coordinators have difficulty transferring patients to rehabilitation centers or nursing homes on weekends. In recent years, the hospital has instituted process improvements to address these issues. For example, care coordinators now use an electronic scheduling system to arrange transportation with a vendor, as well as an electronic system that improves communication and coordination among nursing homes and rehabilitation units in the Fairview system. As a result of network-wide discussions, the system's nursing homes and rehabilitation units now admit discharged patients on weekends.

Exhibit 1. The Patient Flow Chart Is Color-Coded to Indicate Whether Discharges Are Proceeding as Scheduled

The screenshot shows a 'Visual Control Board' interface with search filters and a data table. The filters include Hospital (Fairview Southdale), Unit (88), and various DRG and account status options. The data table below is color-coded based on these metrics.

Room	Care Level	Patient Name	Pred DRG	Unit	Account Status	CC	SW	Attending Physician	CM	Hour of Care	DRG Max LOS Hrs	Utilization Management	DRG Specific Criteria	Location	Letters	Review Status	Chart	InQ Status
880001	2		392	88	IP		✓			207.1	67.2		0/0	On Unit		ACT Match	1	
880101	2		301	88	IP		✓			276.8	74.4		0/1	On Unit		ACT Match	1	
880202	1		743	88	IP					51.3	50.4	6/9/2009	0/0	On Unit		Meets IP		
880302	2		690	88	IP		✓			144.6	86.4		0/0	On Unit	1st Letter Given 6/10/2009	Meets IP	2	
880401	2		755	88	IP		✓			273.9	100.8		0/0	On Unit		Meets IP	1	
880502	1		293	88	IP					35.6	74.4		0/1/2	On Unit	2nd Letter Given 6/10/2009	SI Not Met		
880701	1		195	88	IP					20.6	84.0		2/1/0	On Unit				
881001	2		842	88	IP					16.5	76.8		0/0	On Unit	OBS Brochure 6/10/2009	Meets IP		
881202	1		182	88	IP					18.4	79.2		0/0	On Unit		SI Not Met		
881301	2		88		Observation					24.8	24.0			On Unit		ACT Match		
881401	2		741	88	IP					46.2	67.2		0/0	On Unit		Meet OBS		
881601	1		392	88	IP		✓			95.2	67.2	READMIT(1)	0/0	On Unit		IS Not Met		
881602	2		392	88	IP					15.2	67.2	READMIT(1)	0/0	On Unit		ACT Match		

Source: Fairview Health Services, 2010.

Core Clinic and Tele-Assurance to Improve Congestive Heart Failure Outcomes

Southdale pays special attention to its patients with congestive heart failure (CHF), as these patients have been a major driver of hospital admissions and costs. One of the hospital's first strategies to improve quality and reduce admissions was the development of a tele-assurance program that is operated by the University of Minnesota Physicians Heart practice at Edina and is funded by the hospital. Patients who have advanced heart failure are offered enrollment in the program at the time of hospital discharge. As part of the program, patients are expected to call in to an automated system daily and answer six questions related to their current condition and weight. Answers that indicate a potential

problem are forwarded electronically to a nurse practitioner for follow-up, which may include referral to the patient's primary care provider.

To better manage CHF patients and keep them out of the hospital, Southdale and the University of Minnesota Physicians Heart practice at Edina have also partnered to create the C.O.R.E. (Cardiomyopathy Optimization Rehabilitation Education) Clinic at the Minnesota Heart Clinic. In this comprehensive, state-of-the-art program, nurse practitioners guide patients through a series of phases that provide in-depth assessment, treatment, education, and support for cardiac medical management.

The results of Southdale's CHF initiatives are encouraging. The average 30-day readmission rate for

all Southdale CHF patients is around 15 percent. For patients in the C.O.R.E. Clinic, the rate is 6 percent. And for patients using the C.O.R.E. Clinic and the tele-assurance program, the rate is 1 percent. Southdale's average length of stay for CHF patients, however, has risen. Physician leaders believe this is because only the most advanced heart failure patients are now being admitted to the hospital.

Speeding Up Heart Attack Treatment

Fast and effective treatment for acute myocardial infarction (AMI) is one of the key components of the Institute for Health Improvement's (IHI) 100,000 Lives Campaign. It has also been identified as an important area for improvement by the Joint Commission and the Centers for Medicare and Medicaid Services (CMS). Battista has worked closely with the hospital to improve AMI care by reviewing each AMI case on a monthly and quarterly basis, monitoring compliance with AMI guidelines, and developing process improvements. The team established a process whereby emergency department physicians are empowered to alert the cardiac catheterization laboratory directly about new AMI cases. The cardiologist meets the patient in the laboratory within 20 to 30 minutes of being notified, and reviews the clinical data and emergency department physician's diagnosis there. The cardiologist can immediately begin an angioplasty or veto the procedure if he or she feels it is inappropriate, though this happens rarely. This process eliminates delays to necessary care.¹

The wireless technology the hospital purchased in 2005 to transmit electrocardiograms from the ambulance to the hospital has also sped AMI care.

¹ In some hospitals, when an AMI patient is diagnosed, the emergency department physician calls a general cardiologist, who either comes to the emergency department to examine the patient, or requests a fax of the patient's electrocardiogram. If the cardiologist concurs with the emergency department physician's diagnosis, he or she alerts the catheterization laboratory to prepare for an emergency angioplasty. See: <http://www.ihl.org/IHI/Topics/Reliability/ReliabilityGeneral/ImprovementStories/WhenEveryMinuteCountsImprovingHeartAttackCare.htm>. Saving Minutes When Every Minute Counts: Improving Heart Attack Care, 2005.

Getting early information means that the hospital can initiate its ST-Elevation Myocardial Infarction (STEMI)² program prior to the patient's arrival at the hospital. This innovation has helped the hospital reduce its average door-to-balloon time—the time from arrival at the hospital to percutaneous transluminal coronary angioplasty (PTCA)—by 20 minutes. Southdale's average door-to-balloon is 50 minutes, 40 minutes faster than the 90-minute standard encouraged by the IHI and CMS. The hospital faxes the paramedics the door-to-balloon times the following day to reinforce the benefit of their joint efforts.

Looking Forward: Developing an Accountable Care Organization

Reflecting a commitment to improving efficiency at the broader system level, Fairview Health Services has begun an initiative to create an accountable care organization (ACO). Designed to reform care delivery, improve the patient and provider experience, and restructure the payment model to reward quality and efficient use of resources, the initiative enables the health system to share the savings that accrue from making care more efficient for enrollees of Medica Health Plan, a major nonprofit health plan in Minnesota that covers approximately 15 percent of Fairview's patients.

Medica invested \$10 million up front to support the ACO's shared savings model and enable a redesign of care. The latter is spearheaded by David Moen, M.D., an emergency department physician who designed a new primary care clinic prototype by asking patients, providers, and support staff: "How can we make things better for you?" Physicians complained of having too much administrative work to do—such as updating medical charts and completing prior authorization requests—that took time away from patients and lengthened their already busy day. Based on feedback, Moen developed and piloted a "care model innovation" (CMI) clinic using the medical home approach.

² STEMI is a type of severe heart attack in which the coronary artery is completely blocked off, generally requiring a percutaneous transluminal coronary (or balloon) angioplasty.

Exhibit 2. Shared Savings Model Innovations

Care Delivery	Teamlets identify best practices, reduce unnecessary variation in care by standardizing clinical protocols, improve handoffs, and align incentives between primary and specialty care providers (e.g., discouraging the practice of “convenience births” by obstetricians).
Patient and Provider Experience	Innovations include greater patient care responsibilities for nurse practitioners, the use of disease-specific online patient communities, 24/7 Skype-like virtual care available to patients to answer questions; use of the patient portal MyChart; and the introduction of secure electronic messaging with physicians.
Payment Model	Shared savings model rewards affiliated physicians and other system providers for improving quality and reducing costs.

Source: Fairview Health Services, 2010.

In the model, each patient is assigned to a “teamlet,” which typically comprises a scheduler, a nurse practitioner or physician, a registered nurse, and a medical assistant or licensed practical nurse. Certain tasks that were once the physicians’ responsibility are reassigned to midlevel practitioners and other staff. For example, support staff send faxes and nurses play a greater role in caring for uncomplicated cases. Nurses and support staff also receive training in health coaching and motivational interviewing techniques to improve communication with patients. Teamlet members are co-located and meet frequently to coordinate all aspects of a patient’s care. In addition to improving patient satisfaction, the new model has allowed physicians to increase their patient panel size from 1,000 to 1,300 patients.

An innovation based on patient feedback is a new patient portal, known as the MyChart personal health record, which allows patients to schedule appointments, request prescription refills, view medical history, and communicate with their care team electronically. Other innovations emerging from the shared savings initiative are outlined in Exhibit 2.

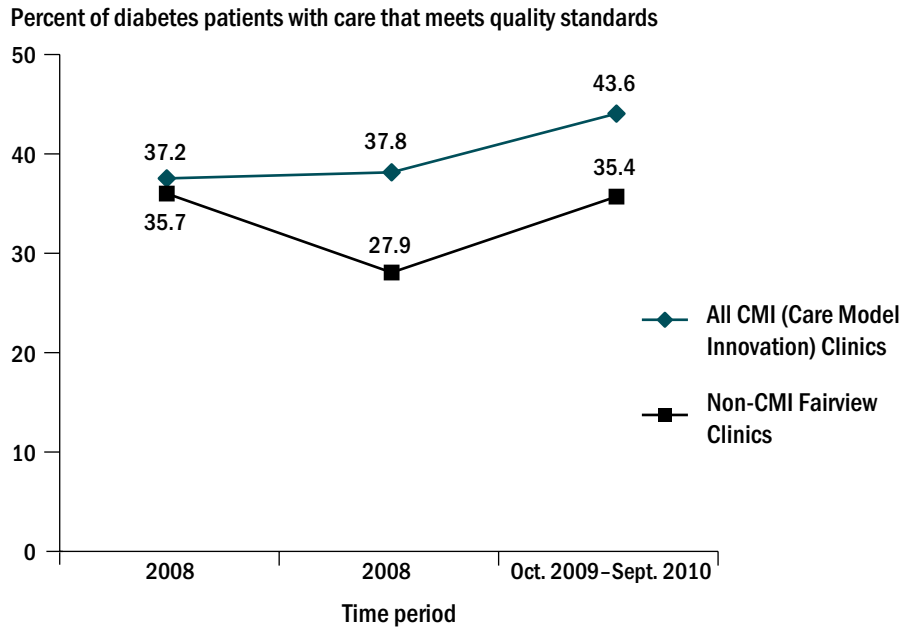
The concept behind the shared savings model is that rewarding providers with a portion of the savings from overall cost reductions encourages them to pursue efficiencies in care delivery. Under Fairview’s arrangement, Medica continues to make fee-for-service payments, which are supplemented by a bonus for meeting targets related to quality, cost, and patient experience. The overall goal of the program is to reduce costs by 20 percent; however, Fairview Health Services will share in the savings so long as costs fall

below market levels. Cost is measured by comparing the total cost of the service (including clinic, hospital, pharmacy, and laboratory services) to the average market cost, adjusting for risk. The relationship is structured so that Fairview receives more than half of any savings achieved. At this time, the system is still figuring out the best way to distribute savings back to the providers involved in patient care. Calculating bonus payments to independent community physicians who are not part of Fairview Health Services but who are serving patients in the pilot program presents a particular challenge.

Early results of Fairview Health Services’ ACO project are promising. The care model innovation (CMI) clinics have achieved favorable results compared with non-CMI patients on measures of clinical care, patient and provider satisfaction, and per-member costs (Exhibits 3 and 4). Employee satisfaction, as measured against a benchmark, improved from 2009 to 2010.

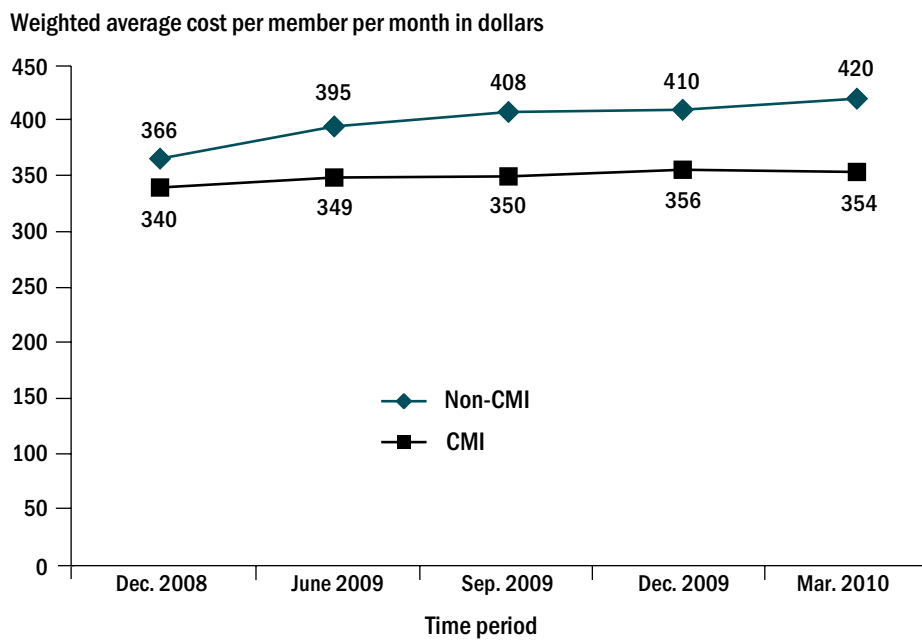
Exhibit 4 compares per-member costs for 18,000 Medica members at non-CMI Fairview clinics with 1,800 patients at CMI clinics. The results are preliminary but promising, showing a widening difference in claims costs. The new model for payment and care delivery is currently being expanded into all Fairview primary care clinics and high-volume specialties like cardiology and obstetrics. The system plans to extend the model to all major payers in 2011, so that 45 percent of its business will be based on this model. In 2012, the system anticipates expanding the shared savings model to a larger share of its business.

Exhibit 3. Percentage of Diabetes Patients Whose Care Meets Quality Standards, Care Model Innovation Clinics Versus Non-Care Model Innovation Clinics



Source: Fairview Health Services, 2010.

Exhibit 4. Paid Claims Per Member Per Month, Care Model Innovation Clinics Versus Non-Care Model Innovation Clinics



Note: Weighted average by member months, includes pharmacy; CMI clinics: Eagan, Hiawatha, Northeast, Rosemont.
Source: Fairview Health Services, 2010.

RESULTS

Southdale’s intense focus on quality over a 10-year period has helped it achieve impressive results in areas such as heart attack care, where it is performing in the top 25 percent of hospitals reporting to CMS. By paying close attention to quality as well as proxies for efficiency such as average length of stay and readmissions, it is the only hospital that has been distinguished as a “Highest Value” hospital by the Leapfrog Group two years in a row.

The hospital’s performance improvement philosophy helps clinical and administrative staff evaluate operations with a focus on improving quality while cutting costs. Certain initiatives, such as the care management redesign and the use of protocols for determining the appropriate choice of implant device, have helped to significantly reduce or avoid costs while simultaneously maintaining or improving quality.

Exhibit 5 shows the decline in average length of stay (LOS) since 2001, which the hospital attributes to myriad process improvement initiatives over the years. LOS declined even as its average case mix index increased over the same period. Southdale

estimates that cost avoidance related to reducing its LOS came to nearly \$11 million in 2010 (Exhibit 6). Cost avoidance related to reducing the number of days for patients who remain in the hospital after it is medically necessary is estimated to have avoided more than 600 inpatient days and saved the hospital more than \$500,000 in 2010.

Through process improvements, Southdale also has managed to keep its readmission rates below the average of hospitals of comparable size and patient demographics. Exhibit 6 shows Southdale’s rates of readmissions for all causes, as well as for readmissions for the same DRG as the original admission, are lower than the “expected” rates according to analysis by Premier.³

With Southdale’s success in process improvement, the hospital is focusing on improving both patient satisfaction as reflected in HCAHPS scores. Southdale hopes to improve patient–provider interactions in particular, and thus is analyzing the

³ Premier, Inc., collects and analyzes patient-level data from more than 600 hospitals, 45 million records, and 310 million hospital visits (<http://www.premierinc.com/quality-safety/tools-services/prs/data/perspective.jsp>).

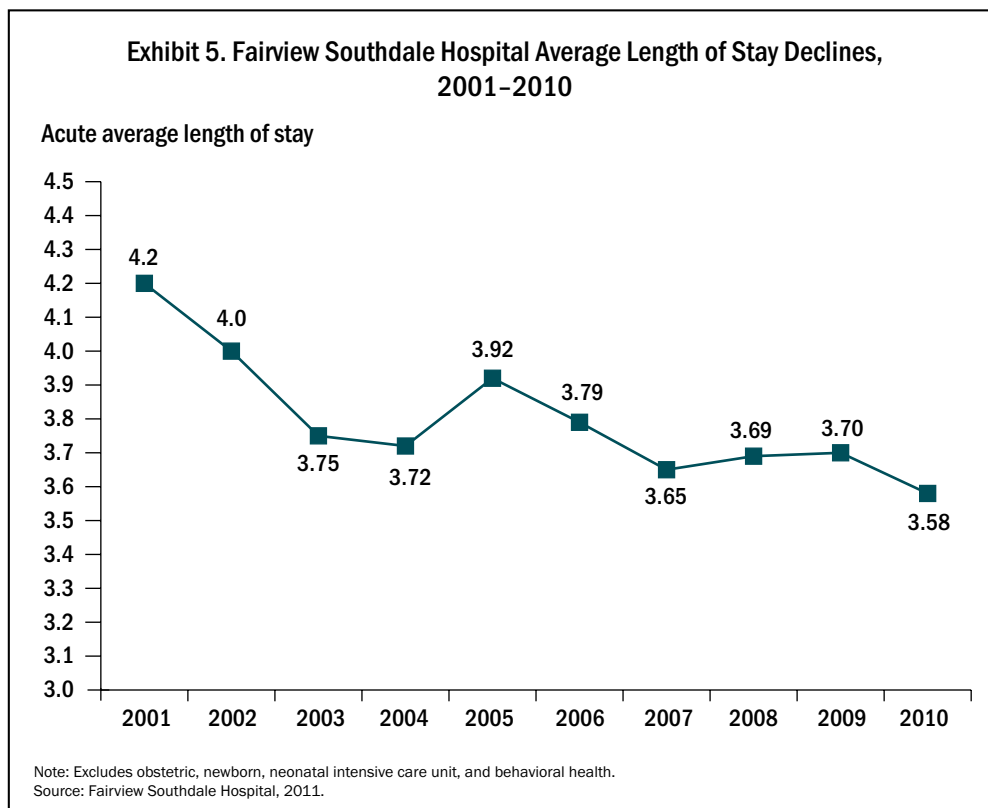


Exhibit 6. Thirty-Day DRG Readmission Rates Lower Than Expected

	ALL APR-DRG's Readmission ^a		SAME APR-DRG's Readmission ^a	
	2009	3rd quarter 2010	2009	3rd quarter 2010
Fairview Southdale Hospital readmission rate	7.10%	7.17%	1.44%	1.27%
Premier expected readmission rate	8.53%	8.46%	1.77%	1.74%

^a APR-DRG: All patient-refined diagnosis-related groups help to classify patients based on severity of illness. Source: Fairview Southdale Hospital, 2011, based on Premier data.

physician's role in creating a superior patient experience. For example, physicians are now instructed to follow the AIDET principles of interacting with patients as a tool for improving communication: A—Acknowledge the patient; I—Introduce yourself; D—Explain the duration of care; E—Explain the details and purpose of clinical interventions; T—Thank the patient for allowing you to care for them.

LESSONS

A number of lessons have emerged from Southdale's experience that may apply to other hospitals seeking to enhance efficiency and value.

Place quality before efficiency.

Southdale leaders believe that efficiency is the result of creating better outcomes and a better experience for patients, physicians, and staff. Its experience also shows that physicians are chiefly motivated by improving patient outcomes, so sharing performance data and illustrating the potential positive impact on patients is the key to recruiting physicians for projects and reinforcing a culture of quality improvement. If the process improvements also save money, the physicians may become even more eager to participate, especially if the savings can be invested in initiatives that further improve patient care.

Develop and nurture physician champions to lead quality improvement.

Quality improvement initiatives need the support of physician champions to succeed. These leaders can be informally recruited—for example by assigning a

physician to a process improvement committee—or they may emerge naturally. Common characteristics of all physician leaders, however, include an entrepreneurial spirit, passion for quality, and an ability to teach and bring along other physicians.

Track patient flow and share staff and resources among departments.

By using patient tracking systems, staggered shifts, and the sharing of staff, Southdale is able to reduce overtime and expensive agency time when the number of hospitalized patients fluctuates. This in turn improves access, quality, and efficiency. Sharing of staff and resources among departments appears to come easily at Southdale, where there is already a culture of helping one another for the sake of the patient. At hospitals where such a culture does not already exist, this culture can be cultivated by helping units understand the benefits of mutual support. To assure reciprocity, hospitals may need to rely on executive oversight to identify and follow-up with units that fail to contribute.

Give staff process improvement tools and establish accountability for using them.

Southdale holds directors accountable for quality, productivity, and costs while simultaneously providing the tools and resources necessary to meet targets. The hospital requires annual cost savings and participation in quality initiatives and ties results to performance evaluations and compensation.

These tools and resources include dashboards with performance data and benchmarks. Staff are also

supported by health information technology including an EHR with built-in alerts to improve quality, and patient tracking software, which is linked to the billing system to provide a sophisticated analysis of productivity.

While Southdale believes in making staff accountable, it does so using carrots rather than sticks. One hospital leader stressed that it is important to “be hard on the process, gentle on people.”

Prioritize goals, but start with low-hanging fruit.

It is not feasible to chase all potential performance initiatives. The key is asking physicians and staff what is important to them. It is also helpful to start with the easily achievable projects to develop the confidence and motivation of staff to pursue more complex initiatives. Southdale found early successes by focusing on pharmacy and supply utilization to identify opportunities for savings while maintaining quality.

Change the payment system.

Mark Dixon, president of the system’s South region, describes Fairview Health Services’ participation in an ACO shared savings model as part of its desire to foster the model in the marketplace. While the Twin Cities community is progressive and does not wait until penalties are established for nonparticipation, other communities may need a stronger push to change payment systems and service delivery. Stakeholders that begin to sense instability with the status quo may become more willing to test new strategies that will create a better product and reduce costs.

Fairview Health Services is currently proceeding with a shared savings model to develop its ACO. However, the system recognizes that the next approach to payment is likely to be the use of global payments, which set a ceiling on the amount that will be paid to treat a condition. Fairview leaders believe that providing all services within a network will encourage providers to analyze both the quality and cost of each type of service or procedure, and choose the best option.

Fairview leaders are convinced that continuing to achieve efficiencies while improving quality is critical to succeed in a rapidly changing health care environment.

FOR FURTHER INFORMATION

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Appendix A. Selection Methodology

The selection of hospitals for inclusion in the case study series on efficiency is based on their designation by the Leapfrog Group as a “Highest Value Hospital.” To be eligible for this recognition, a hospital must have completed and submitted a Leapfrog Hospital Survey to the Leapfrog Group during the 2008 survey cycle.* During this cycle, 1,282 hospitals voluntarily submitted surveys, with a majority participating at the request of local employers and/or regional business coalitions.

Leapfrog’s efficiency scoring methodology takes into consideration both resource use and quality of care for a subset of all hospital patients: those undergoing a coronary artery bypass graft (CABG) or a percutaneous coronary intervention (PCI), or being treated for an acute myocardial infarction (AMI) or pneumonia. The resource use measure for a procedure or condition is a comparison of a hospital’s actual length of stay compared with their risk-adjusted expected length of stay, further adjusted for readmission. If a patient is readmitted for any reason within 14 days of discharge, the resource utilization is considered higher. The quality measures for CABG and PCI are based on a hospital’s case volume, its risk-adjusted mortality rates as reported by national or regional registries or public state reports, and adherence to nationally endorsed process-of-care measures. The quality measures for AMI and pneumonia are those voluntarily reported by hospitals to the Centers for Medicare and Medicaid Services (CMS), known as the core measures. A hospital whose relevant patients have higher-quality care, a shorter than expected length of stay, and are without a readmission within 14 days for any reason are scored as highly efficient.

Leapfrog’s detailed scoring algorithms are available at: http://www.leapfroggroup.org/media/file/Leapfrog_Resource_Utilization_Risk-Adjustment_Model_White_Paper.pdf.

For a hospital to be deemed “Highest Value,” it needed to be in the top performance category for efficiency for at least three of the four procedures and conditions.

The Leapfrog methodology has some limitations. It does not take into account the care provided to patients with other conditions, nor does it examine resource use other than length of stay (adjusted for readmissions). Further, participation is voluntary on the part of hospitals. Therefore, hospitals included in this case study series may not be representative of all hospitals considered efficient using other metrics. However, the Leapfrog Group’s resource use measure has been endorsed by the National Quality Forum and appears to be the only national source for efficiency data.

While designation as a “Highest Value Hospital” by the Leapfrog Group was the primary criterion for selection in this series, the hospitals also had to meet the following criteria: ranked within the top half of hospitals in the U.S. on a composite of Health Quality Alliance process-of-care (core) measures as reported to CMS; full accreditation by the Joint Commission; not an outlier in heart attack and/or heart failure mortality rates; and no major recent violations or sanctions.

Since 2009, the Leapfrog Group has been using a different efficiency measurement to designate “Top Hospitals,” rather than “Highest Value Hospitals.” The main difference is that the new methodology looks at measures of efficiency at the hospital level, rather than at the condition level. Details can be found at the Leapfrog Group Web site, <http://www.leapfroggroup.org/media/file/2010LHRPScoringMethodology.pdf>.

The Commonwealth Fund’s [WhyNotTheBest.org](http://www.whynotthebest.org) Web site does not post these Leapfrog data, though it does include some indicators of efficiency such as readmission rates.

* Leapfrog had not yet completed its analysis of 2009 survey data when we began our hospital selection process.

**Appendix B. Performance Data from WhyNotTheBest.org for
Fairview Southdale Hospital, CY 2009**

	Top 10% of U.S. Hospitals	National Average	Fairview Southdale Hospital
Overall Recommended Care	98.42%	95.65%	97.98%
Overall Heart Attack Care	99.89%	97.5%	99.86%
Aspirin on arrival	100%	98.32%	100%
Patients given aspirin at discharge	100%	98.06%	100%
ACEI or ARB for LVSD ¹	100%	96.02%	98.91%
Adult smoking cessation advice/counseling	100%	99.52%	100%
Beta blocker prescribed at discharge	100%	98.09%	100%
Fibrinolytic therapy received within 30 minutes of hospital arrival	85.37%	76.02%	N/A
Primary PCI received within 90 minutes of hospital arrival	100%	90.67%	98.94%
Legacy: Beta blocker on arrival	N/A	89%	98.94%
Overall Pneumonia Care	98.37%	93%	95.38%
Pneumococcal vaccination	100%	91.91%	95.92%
Blood cultures performed in the emergency department prior to initial antibiotic received in hospital	100%	95.26%	99.01%
Adult smoking cessation advice/counseling	100%	97.9%	100%
Pneumonia patients given initial antibiotic(s) within 6 hours after arrival	100%	95.12%	96.14%
Initial antibiotic selection for community-acquired pneumonia (CAP) in immunocompetent patients	98.08%	91.38%	88.83%
Influenza vaccination	100%	90.53%	93.21%
Legacy: pneumonia patients given initial antibiotic(s) within 4 hours of arrival	N/A	81%	83.09%
Legacy: pneumonia patients given oxygenation assessment	N/A	99%	100%
Overall Heart Failure Care	99.29%	92.34%	97.95%
Discharge instructions	100%	87.53%	96.86%
Evaluation of LVS function	100%	95.99%	98.89%
ACEI or ARB for LVSD	100%	94.55%	96.67%
Adult smoking cessation advice/counseling	100%	99.07%	100%

	Top 10% of U.S. Hospitals	National Average	Fairview Southdale Hospital
Overall Surgical Care	95.58%	95.08%	98.08%
Presurgical antibiotic given at the right time	100%	95.83%	98.99%
Surgical patients who were given the right kind of antibiotic	100%	96.80%	99%
Preventive antibiotics stopped at right time	98.96%	93.73%	96.02%
Cardiac surgery patients with controlled 6 a.m. postoperative blood glucose	98.78%	92.99%	94.09%
Surgery patients with appropriate hair removal	100%	99.22%	100%
Surgery patients with recommended venous thromboembolism prophylaxis ordered	99.26%	93.01%	96.08%
Surgery patients who received appropriate venous thromboembolism prophylaxis within 24 hours prior to surgery to 24 hours after surgery	98.91%	91.39%	94.21%
Surgery patients on a beta blocker prior to arrival who received a beta blocker during the perioperative period	100%	92.47%	98%
Patient Experience (HCAHPS) - Rating 9 or 10			
Percent of patients highly satisfied	78%	67.16%	61%
Doctors always communicated well	87%	80.18%	76%
Nurses always communicated well	83%	75.82%	71%
Patients always received help as soon as they wanted	76%	63.92%	57%
Staff always explained about medicines	68%	60.30%	58%
Pain was always well controlled	76%	69.23%	64%
Patient's room always kept quiet at night	71%	57.98%	49%
Patient's room and bathroom always kept clean	82%	71.13%	65%
Patients given information about recovery at home	88%	81.78%	84%
Patients would definitely recommend this hospital to friends and family	82%	69.31%	68%
Readmission			
Hospital 30-day readmission rates for pneumonia	16.50%	18.34%	19.60%
Hospital 30-day readmission rates for heart failure	22.40%	24.73%	24.80%
Hospital 30-day readmission rates for heart attack	18.40%	19.97%	18.9%
Mortality			
Heart attack 30-day mortality rate	14.10%	16.17%	14.40%
Heart failure 30-day mortality rate	9.40%	11.28%	8.80%
Pneumonia 30-day mortality rate	9.50%	11.68%	9.70%

¹ Angiotensin Converting Enzyme Inhibitor (ACEI) or Angiotensin Receptor Blockers (ARB) for Left Ventricular Systolic Dysfunction (LVSD).
Source: www.whynotthebest.org, accessed June 29, 2011.

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