



2012

Barnes-Jewish Hospital **Patient Safety & Quality**

Report to the Board of Directors

BARNES  JEWISH
Hospital
BJC HealthCare



BARNES JEWISH
CENTER FOR OUTPATIENT HEALTH **BJC HealthCare**

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Opposite: The 12-story Center for Outpatient Health, which opened in March 2012, is certified as a LEED building by the U.S. Green Building Council for its sustainable design.

Felicia Fritts, BSN, CCRN, a nurse on 8200 critical-care unit monitors a patient's heart.

Letter from **Rich Liekweg** and **John Lynch, MD**



*“We resolve to be relentless
when it comes to
the safety of our patients.”*

Dear Barnes-Jewish Hospital Board Members and Leadership,

At Barnes-Jewish Hospital, we strive to be national leaders in medicine, which means keeping our patients safe and delivering only the highest quality services.

Each year, we continue to review, evaluate and improve our processes and efforts throughout the hospital from the previous year. In 2012, in addition to traditional scorecards that we use to report our data, this report ranks us with other academic medical centers through the University HealthSystem Consortium (UHC) on pages 2 and 3. UHC is an alliance of the nation’s leading academic medical centers. By comparing Barnes-Jewish with similar hospitals that represent the best in health care, we are raising the bar and our expectations for the level of care we want to provide to our patients.

This year, we also were asked by the Joint Commission Center for Transforming Healthcare to participate in two of its projects aimed at solving health care’s most critical safety and quality problems: safety culture and preventing falls with injury. We are honored to be a part of solutions that will positively affect patient care and outcomes. Details of these projects are featured on pages 6 and 7.

Together with our physician partners at Washington University School of Medicine, we continue to develop and implement best practices, all with the goal of creating a safer environment and the highest quality experience for our patients. We understand that patient safety and quality extend beyond our clinical teams to encompass everyone at Barnes-Jewish, and, in fact, some of the most effective ideas come out of process improvement exercises that contain multidisciplinary teams. We resolve to be relentless when it comes to the safety of our patients.

Thank you for being our partners in patient safety and quality.

Sincerely,

*Richard J. Liekweg
President
Barnes-Jewish Hospital and
Barnes-Jewish West County Hospital
Group President, BJC HealthCare*

*John P. Lynch, MD
Vice President and Chief Medical Officer
Barnes-Jewish Hospital
Professor of Medicine,
Washington University School of Medicine*

On the cover

Anne Drewry, MD (center), and Lisa Cracchiolo, BA, RRT, AE-C, supervisor, respiratory therapy, round on a patient in 4400 surgical/burn/trauma intensive care unit with Michael Lackland, patient care technician.

Barnes-Jewish Hospital – 2012 Strategic Priorities

GOAL	2014 TARGET	2012 STRATEGIES
Safety	University HealthSystem Consortium (UHC) Quality and Accountability: Top 10	Avoid all preventable harm
		Partner with physicians to reduce mortality
Improve performance on Patient Safety Indicators		
Quality		Improve and implement standardized clinical workflows
		Support continuum-of-care initiatives
Service		Overall Quality of Care & Services: Top Decile
	Internalize ICARE values to drive service excellence behaviors	
People	Employee Engagement: 85	Accelerate improvement of overall patient satisfaction levels
		Develop, retain and recruit the most talented people
		Create culture of diversity & inclusion
Innovation	Adjusted Patient Days: Multi-Year Model Level	Proliferate and mature Lean management model
		Strengthen clinical programs to enhance value to patients
		Transform facilities through Master Facility Plan deployment
		Optimize clinical and business information flow
Finances	Operating Margin: 4% Supply Expense/Net Revenue: 19%	Optimize integration with Barnes-Jewish West County Hospital
		Lower supply expense growth to less than revenue growth
		Ensure efficient, productive use of resources
		Effectively provide, measure and communicate community benefit
		Implement world-class systems and processes

Safety Goal: Be the safest hospital

2014 Target: UHC Overall Quality and Accountability - Top 10

STRATEGY	2012 OBJECTIVE
S1. Avoid all preventable harm	S1.1 Reduce high-risk medication errors with harm to 1.37
	S1.2 Achieve 0.38 for central-line-associated blood-stream infection
	S1.3 Eliminate patient harm events related to blood distribution
S2. Partner with physicians to reduce mortality	S2.1 Achieve Mortality Index of 0.98
S3. Improve performance on Patient Safety Indicators	S3.1 Improve UHC Safety Composite by 15%

Quality Goal: Provide the best care

2014 Target: UHC Overall Quality and Accountability - Top 10

STRATEGY	2012 OBJECTIVE
Q1. Improve and implement standardized clinical workflows	Q1.1 Improve medication-reconciliation accuracy rate to 60%
	Q1.2 Achieve core measures bundle score of 99%
Q2. Support continuum-of-care initiatives	Q2.1 95% of patients of top 35 admitters receive discharge snapshot within 24 hours of discharge
	Q2.2 Reduce readmission rate in 4 key areas to 19.3%
Q3. Improve patient access and flow	Q3.1 Reduce median time from Admit Decision to ED Departure for admitted ED patients to 2 hours
	Q3.2 Improve the average time between discharge order written to when the patient leaves to 3 hours, 11 minutes

University HealthSystem Consortium (UHC)

Barnes-Jewish Hospital joined **University HealthSystem Consortium (UHC)** in 2006. UHC, formed in 1984 and located in Chicago, Ill., is an alliance of 116 academic medical centers and 283 of their affiliated hospitals representing the nation's leading academic medical centers. UHC's vision is to help members attain national leadership in health care by achieving excellence in quality, safety and cost effectiveness.

UHC offers an array of performance improvement tools that assist members in reaching and achieving the highest levels of quality, safety and care. Programs such as UHC's Imperatives for Quality and the UHC/American Association of Critical Care Nurses (AACN) Nurse Residency Program™, both of which Barnes-Jewish participates in, offer opportunities for knowledge sharing and education.



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NURSES

Barnes-Jewish Hospital

The information on the next page presents the measures evaluated in the **2012 UHC Quality and Accountability** ranking. This scorecard provides a comparison of Barnes-Jewish Hospital's performance with that of other academic medical centers. The data was obtained from existing UHC data resources, including the Clinical Data Base (June 2011- May 2012), and Core Measures Data Base (Q2 2011-Q1 2012), as well as HCAHPS data from the Hospital Compare Web site (Q4 2010-Q3 2011).

The goal of the Quality and Accountability ranking is to assess organizational performance across a broad spectrum of high-priority dimensions of patient care. The 2012 scoring and ranking cover the domains of *mortality, effectiveness, safety, equity, patient centeredness* and *efficiency* using measures developed by national organizations or the federal government. Refer to the methodology white paper (available at www.ubc.edu) for specifics regarding the metrics, scoring methods, and data sources used.

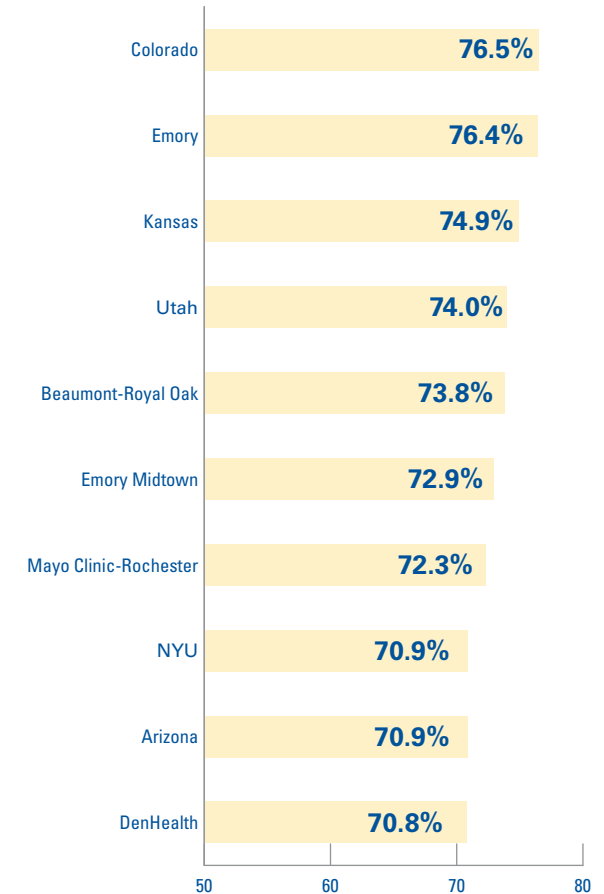


Nursing leadership from neurosciences unit 11400/11500 reviews their MDI board, which stands for managing for daily improvement. From left: Heather Triplett, RN, 11400 lead charge nurse; Vita James, RN, 11500 lead charge nurse; Kalcee Forman, BSN, RN, 11400/11500 clinical nurse manager; and Kayla Timmerman, BSN, RN, 11400/11500 evening lead charge nurse.

2012 Quality and Accountability Performance Scorecard

Overall Composite Performance	Rating	Composite Score	Top-Performer Score	Group Median
Overall (Based on Clinical Domain Performance)	★★★	61.9	76.5	64.6
Clinical Domain Performance	Rank (* denotes tie)	Domain Score	Top-Performer Score	Group Median
Mortality (25%)	71*	50.8%	81.3%	54.7%
Includes UHC O/E mortality rate for the following selected product service lines: bone marrow transplant, burns, cardiology, cardiothoracic surgery, cardiac surgery, thoracic surgery, gastroenterology, gynecology, gynecologic oncology, heart/lung transplant, HIV, kidney/pancreas transplant, liver transplant, medical oncology, medicine general, neurology, neurosurgery, obstetrics, orthopedics, otolaryngology, plastic surgery, rheumatology, spinal surgery, surgical oncology, surgery general, trauma, urology, vascular surgery and ventilator support.				
Effectiveness (25%)	89	75.1%	97.5%	81.6%
Includes all-cause readmission rate within 30 days after discharge (excluding chemotherapy, dialysis, obstetric delivery, radiation therapy and rehabilitation and psych (within 1 day) from numerator and OB, neonatology and normal newborn service lines and death at 1st admit from the denominator) and Joint Commission Hospital Core Measures composite scores for AMI, HF, PN, and SCIP (IP OP): percentage of patients who received all of the care they were eligible to receive.				
Safety (25%)	57*	52.5%	77.5%	55.0%
Includes PSI metrics: PSI-6 iatrogenic pneumothorax, PSI-7 central line associated BSI, PSI-9 postoperative hemorrhage and hematoma, PSI-11 postoperative respiratory failure, PSI-12 postoperative pulmonary embolism or deep vein thrombosis.				
Equity (5%)	1*	100.0%	100.0%	100.0%
Includes Joint Commission Hospital Core Measures composite scores for AMI, HF, PN and SCIP, testing for statistically significant differences in outcomes in 3 equity-based dimensions: gender (male vs. female), race (white vs. nonwhite), and socioeconomic status (Medicaid, self-pay, uninsured and charity combined vs. all others).				
Patient Centeredness (10%)	31*	60.9%	76.6%	56.3%
Includes 10 HCAHPS questions on nurse communication, doctor communication, pain management, communication about medications, cleanliness and quietness, responsiveness of staff, discharge information and overall rating of the hospital averaged as a composite.				
Efficiency (10%)	17*	62.5%	75.0%	56.3%
LOS O/E and direct cost O/E for following selected service lines: cardiology, gastroenterology, medical oncology, general medicine, neurology, general surgery, neurosurgery, cardiac surgery and thoracic surgery. Cases within the above service lines with 1 day LOS and an MS-DRG in the following list are excluded: 069, 190, 191, 192, 291, 292, 313, 391, 392, 223, 225, 226, 227, 242, 243, 244, 245, 246, 248, 249, 251, 259, 261 and 262.				

UHC Top Performers Overall Composite Performance



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Best-In-Class Clinical Quality Scorecard

Barnes-Jewish Hospital achieved an overall Best-In-Class score of 1.31 in 2012. A score of 1.08-1.5 indicates we are in the top quartile compared to other hospitals in the United States. The **Clinical Quality Performance Scorecard** outlines performance in patient

care or treatment delivery. Performance improvement teams are assigned to each quality indicator to evaluate processes, systems, clinical practice and health care worker behaviors, make recommendations for improvement and share information on best practices.

■ Maximum
 ■ Target
 ■ Threshold
 ■ Minimum
 ■ Below Minimum

INDICATOR	2012 TARGET	YTD 12/11 - 11/12	YTD vs GOAL
Appropriate Care	95%	93%	
Efficiency	6%	1%	
Mortality		No different than expected	
Patient Safety	15	11	
Value-based Purchasing (VBP) Clinical Process of Care	97%	97%	

2013 Patient Safety Goals

Improve the Accuracy of Patient Identification

- Use two patient identifiers when providing care, treatment and services
- Eliminate transfusion errors related to patient identification

Improve Staff Communication

- Get important test results to the right staff on time

Improve Safety of Using Medications

- Label medications and solutions when removed from original containers
- Follow procedures to reduce likelihood of harm to patients on blood thinners
- Compare patient home medications to those ordered in the hospital to identify discrepancies; provide the patient with a new medication list at discharge

Reduce Health Care-Associated Infections

- Follow hand-hygiene guidelines
- Set goals to improve hand-cleaning rates
- Use proven guidelines to prevent health care-associated infections

Identify Safety Risks Among Patients

- Screen patients for risk of suicide and provide suicide prevention information at discharge

Universal Protocol

- Prevent wrong-site, wrong-procedure and wrong-person surgery

National Patient Safety Goals

An independent, not-for-profit organization, **The Joint Commission** accredits and certifies more than 19,000 health care organizations and programs in the United States. In 2002, The Joint Commission established its National Patient Safety Goals (NPSGs) program and the first set of NPSGs was effective Jan. 1, 2003. The NPSGs were established to help accredited organizations address specific areas of concern in regard to patient safety.

A Patient Safety Advisory Group, an expert panel of widely recognized patient safety experts, nurses, physicians, pharmacists, risk managers and other professionals with hands-on experience addressing patient safety issues in a wide variety of health care settings, works with The Joint Commission staff to identify emerging patient safety issues. The group advises The Joint Commission on how to address these issues in National Patient Safety Goals, Sentinel Event Alerts, standards and survey processes, performance measures, educational materials, and Center for Transforming Healthcare projects. The adjacent chart provides a review of Barnes-Jewish Hospital's NPSG measures comparing 2012 targets to year-to-date metrics.

■ Maximum ■ Target ■ Threshold ■ Minimum ■ Below Minimum

INDICATOR	2012 TARGET	YTD 12/11 - 11/12	YTD VS GOAL
Medication Safety			
Medications reconciled at <i>discharge</i>	90%	48%	Below Minimum
Medication labeling	90%	88%	Threshold
Suicide Risk Assessment Overall			
Percentage on suicide precautions - mental health units	95%	100%	Maximum
Percentage given mental health resources - mental health units only	95%	100%	Maximum
Percentage on suicide precautions - emergency department	95%	100%	Maximum
Percentage given mental health resources - emergency department	95%	100%	Maximum
Improve the Effectiveness of Communication Among Caregivers			
Use two patient identifiers when taking specimens, administering medications, treatments or blood and blood products	95%	100%	Maximum
"Read back" performed for received telephone/verbal orders or critical test results - nursing	95%	100%	Maximum
"Read back" obtained for reported critical test results and values - lab	95%	100%	Maximum
Critical results/values reported by lab within 30 minutes of availability of results	95%	100%	Maximum
Critical results/values reported to licensed person who can act, within 60 minutes of notification of results	95%	98%	Target
Critical test/procedure results reported by radiologist to ordering physician at time of determination/interpretation of test	95%	89%	Below Minimum
Universal Protocol: Eliminate Wrong-Site, Wrong-Patient and Wrong-Procedure Surgery			
Preoperative verification process completed:			
Operating room: checklist completed	95%	100%	Maximum
Procedure areas: checklist and/or area-specific elements documented	95%	99%	Maximum
Surgical or procedure-site marking completed prior to procedure:			
Operating room	95%	100%	Maximum
Procedure areas	95%	98%	Target
Time out (final verification process) conducted prior to the start of procedures:			
Operating room	95%	100%	Maximum
Procedure areas	95%	100%	Maximum
Bedside procedures	95%	99%	Maximum

Joint Commission Center For Transforming Healthcare

The future of health care is being shaped by the **Joint Commission Center for Transforming Healthcare (CTH)**, which aims to solve health care's most critical safety and quality problems. The Center was established in 2009. In 2011, Barnes-Jewish Hospital (BJH) joined as a participant, along with some of the nation's leading hospitals and health systems. The Center addresses safety and quality issues using a systematic approach to analyze breakdowns in care and discover underlying causes to develop solutions.

Creating a just culture within a culture of safety

In 2008, leadership at BJH began to introduce team members to the "just culture" philosophy that enables trust, and empowers staff to speak up about risks to patients, and report errors and near misses. Each year, through just culture training and Lean programs that incorporate change management, the hospital has made progress in creating a safety culture in which staff share the knowledge, attitudes, behaviors and beliefs about the primary importance of the well-being and care of the patients they serve.

In 2012, team members were required to view three DVDs and pass a short quiz about just culture. Additionally, three just culture training classes were offered to reach newly hired management team members.

As a result of the progress the hospital has made with just culture, the CTH chose Barnes-Jewish to participate in a Robust Process Improvement to optimize behaviors and practices resulting in an improved safety culture that reinforces and supports the prevention of patient harm. Barnes-Jewish was one of seven hospitals participating in the safety culture project, which began in October 2011 and has a planned conclusion in spring 2013. BJH oncology units 3200 and 6900 were chosen to participate. After the group agreed on the metric to use, a number of strategies were implemented to support a safety culture including:

- Huddles at shift change to:
 - » Improve communication between team members
 - » Foster teamwork

- » Encourage discussion about near misses and events that should be reported to the Safety Event System (SES)
- » Communicate the number of Safety Event Systems (SES) reported
- Development of baseline data for comparisons of:
 - » Percentage of SES communicated to staff (loop closure)
 - » Quality of SES loop closure
 - » Unit-specific safety culture survey results
- Creation of a unit-specific process improvement project using colorful and creative displays to further engage staff in the culture of safety

Preventing Falls with Injury

In November 2011, the CTH launched its seventh project, which aims to prevent falls in health care facilities resulting in injuries to patients. Falls result in moderate to severe injuries, prolonging hospital stays and requiring patients to undergo additional treatment.

Based on the heightened engagement that was experienced during and after an oncology rapid improvement event at BJH in August 2011, one of the hospital's oncology units (7900) was selected to participate in a collaborative project with the CTH. This Six Sigma project began with a kick-off meeting in November with a plan for completion in February 2013. Seven hospitals across the United States are collaborating with the Center to reduce falls with injury in

The Barnes-Jewish fall team that worked with the Center for Transforming Healthcare included from left Cathie Limbaugh, MSN, RN, Phyllis Gabbart, MSN, RN, Eileen Costantinou, MSN, RN, Kathy Atwater, Laurie Wolf, MS, CPE, Pat Matt, MSN, RN, and Christina Longnecker, JD, BSN, RN.





Joint Commission Center for Transforming Healthcare

health care. The BJH team includes the director of surgical services and psychiatry, a management engineer/six sigma black belt and a senior coordinator/fall-team chairperson.

Every other week, the team has participated in a conference call with the CTH and other participating hospitals. On the opposite weeks, the 7900 small-core team meets as a steering committee to plan and conduct analyses. A two-hour meeting is held once a month with the 7900 multidisciplinary large team. The following methods have been completed:

- **Define:** During the define phase, a charter was developed and the study division (7900) was selected.
- **Measure:** A cause-effect matrix was used in the measurement phase to determine what factors related to falls and falls with injury. Fishbone diagrams were then developed for each of the top eight issues to determine the root cause of the problem. A data plan was developed to investigate each of the root causes.
- **Analyze:** Each of the hospitals agreed on five common issues to collect data in a similar fashion:
 - » Call-light response time
 - » Patient behavior at time of fall (reason for getting out of bed)
 - » Medication management (medications given 24 hours prior to fall compared with patients that did not fall)
 - » Changes in patient condition 24 hours prior to fall
 - » Patient activity at time of fall

- **Improve:** The idea for improvement must be linked to the most critical factors identified during the analysis phase (toileting, unassisted falls and patient's not using call lights). A clinical expert reviews all patients at risk to fall, and mentors staff nurses to partner with patients to heighten the patient's awareness about their increased risk. The goal of this intervention is to empower the patient to seek assistance from staff when moving about in the room, especially during toileting-related activities.

The pilot program involved printing a daily report from the electronic medical record, which includes a real-time display of fall-risk assessment and intervention documentation for each patient. From this report, newly admitted patients at moderate and high risk to fall are identified and fall-prevention interventions reviewed. This summary is communicated to the clinical nurse specialist (CNS), and utilizing oncology expertise, targets patients that have a mobility deficit and a high risk for injury (e.g., bone metastases). Based on this information, the CNS assembles tailored education material and interviews the patient, utilizing a patient-centered approach.

The CNS develops and shares case studies and best practices related to fall and injury prevention with the unit staff at regular intervals.



Kathy Gray, RN, staff nurse on oncology unit 7900, educates James Perry about fall prevention before he leaves the hospital.

Project status and success is shared regularly at unit staff meetings, oncology leadership meetings and the Oncology Joint Unit Practice Committee. The CNS develops and shares case studies and best practices related to fall and injury prevention with the unit staff at regular intervals. Various posters and bulletin boards are maintained for staff, patients and families.

The clinical nurse specialist and unit management ownership of the project is critical to sustain the momentum. A shift in the culture related to fall prevention occurred as a result of this project and is clearly evident by both staff and leadership. This culture change has resulted in a downward trend in the unit's fall and fall with injury rates. Once the project is completed in early 2013, the team will determine best practices to develop a plan to implement the program in high-fall areas and ultimately hospital-wide.

Goldfarb Patient Safety and Quality Fellowship Program

The Barnes-Jewish Hospital Patient Safety and Quality Fellowship Program was established in 2008 by the Goldfarb Foundation. In 2011, The Foundation for Barnes-Jewish Hospital committed to continue the program by supporting five fellows from 2012 through 2016 to conduct research, training and leadership efforts in patient safety and quality areas.

The program continues to provide hands-on experience for junior faculty interested in leading and advancing patient safety and health care quality. The program also contributes significantly to the efforts of Barnes-Jewish Hospital (BJH) and Washington University School of Medicine (WUSM) with opportunities for physicians to focus on process improvements for which they have a passion, while developing leadership skills within a mentoring environment.

Emily Fondahn, MD, Chief Resident, Internal Medicine, Instructor of Medicine

For the past year, Emily Fondahn, MD, has focused on reducing readmissions and improving transitions of care. Her work includes collaborating with the BJC Center for Clinical Excellence and BJH on a project investigating social determinants and nonclinical risk factors that may

predict a patient's risk for readmission. Information from this project will guide strategies to reduce readmissions.

Dr. Fondahn also spends time teaching the internal medicine residents about patient safety and quality, and focusing on methods to improve dissemination of patient safety and quality information to the house staff. In December, she attended the Institute for Healthcare Improvement National Forum on Quality Improvement in Health Care and presented a poster titled "Development of a Plan-Do-Study-Act cycle to improve diabetes care in a resident continuity clinic." The project was implemented in the BJH Primary Care Medicine Clinic. This quality improvement project evaluated how residents interpret the diabetic patient panel information and use that information to improve care. An online form was created for resident physicians to complete, which required them to evaluate data on their diabetic patients (HbA1c, blood pressure control and retinopathy screening); pick one area they needed to improve; and identify a plan for improvements. Dr. Fondahn ran the study in the clinic twice during the year. She currently is working on how to refine the process since the clinic has changed to a resident-team format.

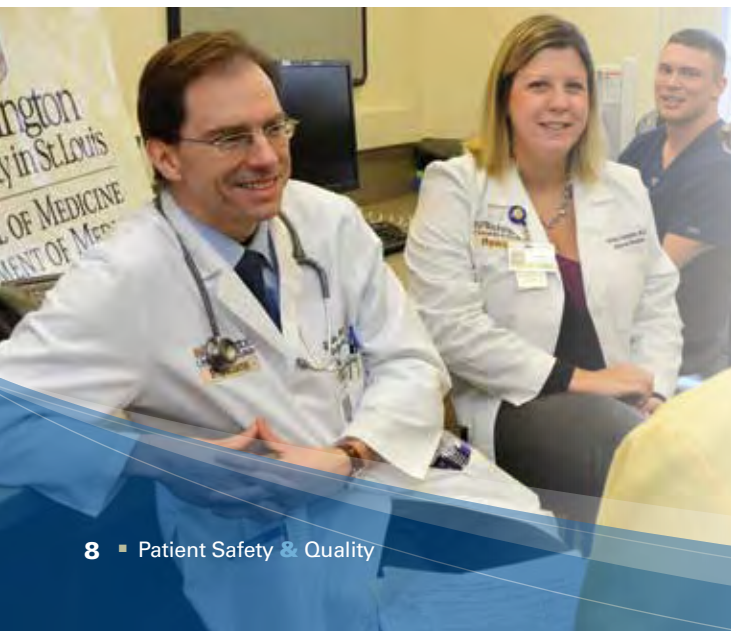
Jonas Marschall, MD, Assistant Professor, Division of Infectious Diseases

Jonas Marschall, MD, MSCI, is an assistant professor in the Division of Infectious Diseases. His interest and focus is in the epidemiology

of bacterial infections in the hospital setting and how these infections can be prevented. A common infection that hospital patients often suffer from is a urinary-tract infection, which frequently is caused by urinary catheters. Dr. Marschall believes that not all catheters are needed; also there are instances where antibiotics are unnecessarily given for what is perceived as a urinary-tract infection. Dr. Marschall's work has focused on reducing the number of unnecessary urinary catheters in use and decreasing the unnecessary use of antibiotics. His research team began by obtaining baseline data on catheter and antibiotic use at the hospital. They currently are creating a prompt within COMPASS, the hospital's electronic medical record, which will provide a list of appropriate symptoms and conditions for ordering a catheter or administering an antibiotic. The prompt will help physicians more accurately evaluate whether a catheter and antibiotic is truly necessary. By spring 2013, the program will be implemented.

Dr. Marschall also serves on the Executive Sentinel Event Review Team to evaluate errors or near-misses and discuss how to prevent them, and is part of the patient safety council of physicians at BJH and WUSM. He also prepared a "request for proposal" that will offer grants to nurture patient safety research at WUSM. Other projects include how to identify an infection in a patient with a urinary catheter, understanding differences in urinary-tract infections based on antimicrobial resistance, and the role of antimicrobial prophylaxis to prevent these infections.

Goldfarb Fellows Jonas Marschall, MD, (left) and Emily Fondahn, MD, (center) meet with Sarah Sidwell, BSN, RN-CMSRN, lead charge nurse on medicine unit 10200, and Daniel King, BSN, RN, interim lead charge nurse.



Great Catch Awards

*The **Great Catch Awards** recognize Barnes-Jewish Hospital team members who intervene to prevent harm, or potential harm, to patients. Annual awards are given in three categories: courageous catch, critical catch and overall best catch. The annual Great Catch Award recipients are chosen from the year's monthly winners.*

Andrew Giudicy, catering associate, was the recipient of the Courageous Catch Award. Giudicy was delivering a dinner tray and found a patient unresponsive. He immediately went for help. A nurse's assessment revealed that the patient was extremely hypoglycemic with a blood glucose level of eight. Andrew's quick thinking allowed for intervention, which saved the patient's life.

Robyn McKee, MRI technician, received the Critical Catch Award. As McKee was about to put a patient on a table for an MRI, she noticed, upon questioning, that the patient had pacer wires in place even though the pacemaker had been removed. This had been approved by the cardiac resident physician, but McKee recognized that pacemaker wires made it unsafe to perform an MRI scan. She informed the cardiac attending physician who immediately agreed. Due to McKee's close attention to the patient screening sheet and questioning the patient, she prevented any harm to the patient.

The Overall Best Catch Award was presented to Lindsey Simmons, RN, staff nurse on medicine unit 11200. Simmons found a patient had normal saline running at 250 milliliters per hour. She thought this amount sounded like a lot, so orders were checked. The orders stated the saline should be running at 75 milliliters per hour. The patient had been transferred to the floor more than five hours earlier with the rate at 250 but the order had been changed to 75 shortly after the transfer. The rate was reduced keeping the patient from volume overload.

Simmons then checked the patient's heparin drip, which had been initiated on another floor early in the morning at 18 units per kilogram per hour. She found that no blood had been drawn to check the heparin level. It had been more than 12 hours since being checked. Blood was drawn and the patient was put on a safe schedule.



- Courageous Catch 2012 - Andrew Giudicy
- Critical Catch 2012 - Robyn McKee
- Best Catch 2012 - Lindsey Simmons , RN



Great Catch Award winners were honored at the annual recognition ceremony. From left: Andrew Giudicy, Lindsay Simmons, RN, Robyn McKee and Vice President John Beatty.

Team Award for Quality Improvement

The *Team Award for Quality Improvement* recognizes outstanding accomplishments of teams working to improve quality and excellence at Barnes-Jewish Hospital (BJH). This program offers teams opportunities to apply for the award and showcase their improvement efforts. Awards are given in the **business results**, **clinical quality** and **service excellence** categories.

Business Results

SWAT: Special Weapons and Tactics to Combat Recovery Audit Contractors (RACs)

Among the cost controls contained in the Affordable Care Act is a mandate that doctors and hospitals correctly assess the level of care for Medicare patients within 24 hours of admission to the hospital. The volume of patients and diversity of illnesses treated presented seemingly insurmountable issues for the case management staff. The solution was to attack the problem with a comprehensive approach: a small team of chart review specialists to review all of the traditional Medicare patients being admitted to the hospital. By the end of February 2012, the SWAT Team had achieved an error rate of 2.75 percent. Remarkably, this error rate is better than any of the smaller, less complex, community hospitals in the BJC HealthCare system.

Neuroscience Discharge Team

Due to increased patient volumes, the 11400 neurology nursing unit has experienced a 14 percent increase in

occupancy. To support the hospital's 2012 strategic priority for decreasing the length of time for patient discharge, the team implemented several changes:

- Residents were trained to write “on hold” discharge orders one day in advance of the expected date of discharge. Those orders were released during rounds the next morning, if appropriate.
- Communication during the daily huddle was standardized utilizing the MD (physician) handoff tool.
- The census board was revised to include expected date of discharge, discharge destination and notes from case management, social work, therapies and consults/testing.

Previously, only 16 percent of patients were discharged by 2 p.m. Now, an average of 27 percent of the unit's patients are discharged by 2 p.m. In addition, length-of-stay for stroke patients decreased from 4.4 days to 4.3 days—a 2 percent reduction in the face of a 14 percent volume increase.

Operating Room Just-in-Time Pack Project

Perioperative services is responsible for managing a supply budget of more than \$100 million and preparing OR packs for nearly 40,000 operations annually at BJH.

By working with its primary supplier, Cardinal Supply, the team achieved a streamlined process for delivering and stocking carts that eliminated the need for substantial re-packaging.

As a result, the team:

- Reduced the number of steps required to create packs from 23 to 13
- Is saving about 1,200 hours of labor annually
- Has removed about 51,000 pounds of waste from the waste stream
- Has reduced permanent annual costs by about \$73,000

This achievement was recognized as a “top gun” project by Cardinal Supply—one of 13 selected among Cardinal's international enterprise. The process also has been adopted by other hospitals in the BJC HealthCare system.

Star Billing Team

The goal of this team was to reduce the number of late charges submitted from perioperative services to patient financial services. An MDI (managing for daily improvement) board was established within the perioperative billing area and the billing team now meets there at 8 a.m. every day to discuss daily production and any issues involving daily perioperative charges. At the end of March 2011, the percentage of transmitted late charge lines was at 6.7 percent, representing a value of more than \$2.5 million. By the end of July 2012, late charges were below 2 percent for 10 of the previous 12 months.



The Just-in-Time Pack Project team included (from left) Mike Channel, Denise Busse, Colleen Becker, Jason Gagne, Tyler Coates, Andrew Pierce and Bob Guardado.

Clinical Quality

Assessing the Usefulness of Repeat Testing in the Clinical Chemistry Laboratory

The goal of this team was to eliminate unnecessary repeat testing in the BJH chemistry laboratory without sacrificing the quality of lab results. The team also wanted to improve turnaround time and reduce re-agent waste. By implementing new protocols, revising laboratory procedures and upgrading software, the team achieved the following results:

- No cases of abnormal results
- Test volumes reduced from more than 25,000 to approximately 5,000
- Turnaround time improvement of at least six minutes for all chemistry profiles
- A reduction in unacceptable turnaround time by 67 percent
- Staff utilize their time more effectively to provide expertise in lieu of unnecessary repeat testing

8900 MICU Offers a New Turn on Pressure Ulcers

The goal of this project was to decrease or eliminate unit-acquired pressure ulcers in the 8900 medical intensive care unit (MICU). Following a review of current practices, the following interventions were implemented:

- A turn team was created to turn patients every two hours
- Staff were educated on the variety of bed surfaces available and their benefits for individual patients
- Staff members were educated on non-traditional areas of the body where ulcers could occur

Implementing these and other changes allowed the unit to achieve zero unit-acquired ulcers between September 2011 and July 2012.

Inpatient Oncology Fall Prevention

The project objective was to reduce patient falls and falls with injury on three oncology divisions. The team learned that assessments of a patient's gait and mental status were not being conducted in a consistent manner, so it developed tools to standardize the process. Part of the team developed processes to ensure that proper interventions were selected and implemented by the nursing team, while another subgroup established processes required after a patient fall. Now, all staff members can review the department's MDI (managing for daily improvement) board to see what action items are in place for prevention.

The work of this team resulted in a 26 percent decrease in total fall rate and a 38 percent decrease in falls with injury rate over a nine-month period. Based upon this heightened focus on falls, oncology unit 7900 agreed to participate in a collaborative project with the Joint Commission Center for Transforming Healthcare.

MD Handoff: Collaboration between Washington University and Barnes-Jewish Hospital

The goal of this project was to improve the continuity of patient care through better communication and handoffs. The team developed a computerized tool to facilitate hand-offs and to convey rounding information to other services, such as dietary, rehabilitation, pharmacy, case management and nursing.

The team created an MD-handoff tab for physicians that pulls current clinical information from COMPASS, the hospital's electronic medical record system, and provides a brief background of the patient, and also features "to do" and "cross coverage" lists for house staff covering for the team.

An MD-handoff rounding report consolidates current clinical information to provide a quick extraction of data for a team of patients. Prior to creation of this new tool, nurses reported a visible plan of care for the patient only 7 percent of the time.



TEAM AWARD FOR QUALITY IMPROVEMENT

Now, 100 percent of the teams that have adopted this tool are identifying a plan of care for each patient. This tool is now being utilized by 84 services in the hospital.

Service Excellence

Orthopedics Multidisciplinary Communications Process

The 7300/7400 orthopedics unit wanted to improve the patient experience by enhancing communication, teamwork and team-based electronic task management. They generated substantial improvements in patient satisfaction by implementing:

- Multidisciplinary rounding at the bedside to emphasize a patient-centered approach
- A process for handing over "plan of care" information consistently at the right place and time
- Multidisciplinary team huddles utilizing an electronic dashboard that displays critical team tasks for every patient
- Patient engagement in their care by utilizing a white board in their rooms

The changes were implemented in June 2011 and helped drive PRC patient satisfaction scores from a rate of 10.2 in 2010 to 73.8 in 2011.

Infection Prevention

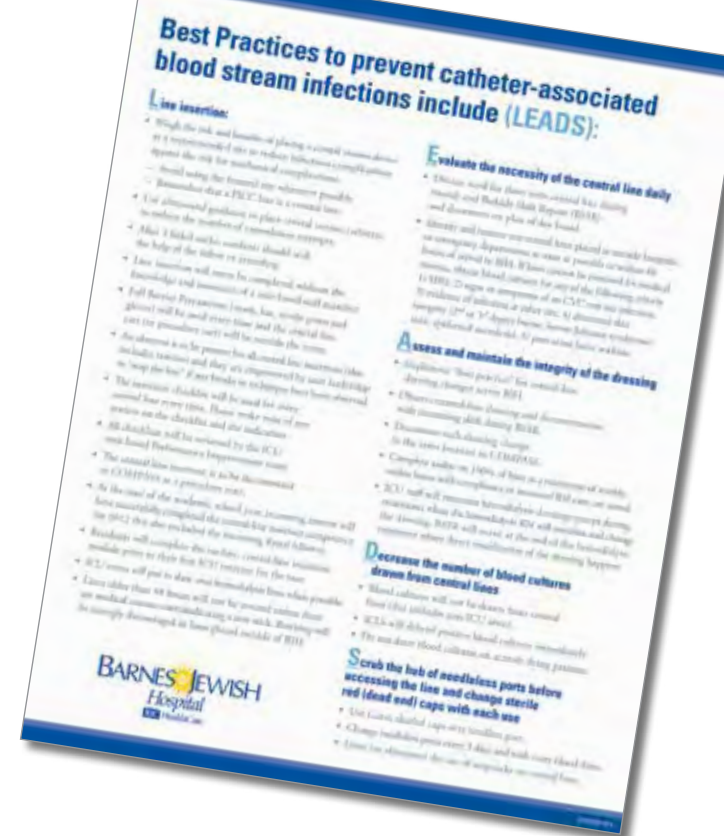
The goal of **infection prevention** is to minimize infection risk to our patients by educating patients, staff and family members. Infection prevention specialists work closely with physicians and nurses to implement practices that have been shown to prevent infections. In 2012, Barnes-Jewish Hospital epidemiology and infection prevention focused its attention in the following areas.

Central Line-Associated Bloodstream Infections (CLABSI)

Central lines such as a PICC or Hohn continue to be essential to medical care today. However, a major complication of these catheters is bacteremia (an infection in the blood stream). In 2010, Barnes-Jewish Hospital infection prevention partnered with critical care through a LEADS campaign to reduce these infections. This partnership continues to ensure that basic, proven infection-prevention practices are implemented and maintained. In 2012, the critical-care nursing committee participated in an

all-day Rapid Improvement Event to expand the LEADS program through 2012 and 2013. Physician support helped standardize the practice across all intensive care units. A trial utilizing the Biopatch (a chlorhexidine-impregnated patch that fits around the catheter insertion site) was completed. Since it did not reduce CLABSI rates, the trial was suspended.

Additional work targeting CLABSI rates was completed in oncology services with a pilot program involving Curoc (an alcohol-impregnated cap) on unit 6900. This cap



eliminates the need to scrub the hub of injection ports prior to use. At the same time, unit 5900 focused on scrubbing the hub with an alcohol pad. During the trial period, 6900 saw a 30 percent reduction in their CLABSI rate. This trial will be expanded to all oncology services and the intensive care units for a one-year period. The infection prevention department continues to apply basic infection-prevention practices and trial newer technologies in its continued effort to decrease the risk of CLABSI in patients.

International Visitors

As an international leader in infection prevention, the Barnes-Jewish infection prevention department and the department of infectious diseases at Washington University continues to host and educate visitors from around the

8900 ICU staff nurses (from left) Bethany Crawford, BSN, RN, CCRN; Livia Erschen, BSN, RN; and Gail Tolcou, BSN, RN, CCRN; demonstrate proper hand-hygiene and isolation techniques. This is one of the contributing factors to 89ICU's successful rate of no unit-based *Clostridium-difficile* infections, commonly referred to as *C. diff*, since August 2010.



The infection prevention team hosted a number of international visitors including Ms. Sin Hui from Singapore. Pictured with her are (back row, from left): Carol Sykora, Tony Russo, Pamala Kremer, Mandy Bodily, Sharon Beatty, Kathy McMullen, Loie Ruhl, and (front row, from left): Marti Craighead, Casey Landholt, Sin Hui, Jennie Mayfield and Helen Wood.

world. This year's visitors included Ms. Sing Hui from Singapore, and Drs. Ratima Issarachaikul and Orapin Lertvannavit from Thailand. Dr. Nordiah Jalil from Malaysia visited for a year. She shadowed the team in both departments to learn the hospital's processes for prevention and treatment of infectious diseases.

Performance Improvement Initiatives

The infection prevention department was involved in a number of projects this year to decrease the risk of hospital-acquired infections. As a member of the University HealthSystem Consortium, Barnes-Jewish infection prevention joined two Partnership for Patients initiatives: the central-line-associated blood-stream infection project has been implemented in all of the hospital's intensive care units; and the neurology intensive care unit (10400 ICU) is participating in the catheter-associated urinary tract project.

In addition, unit 5900 (bone marrow transplant) has been working to decrease *Clostridium difficile* rates in oncology services. Barnes-Jewish infection prevention and unit 5900 are working with BJC HealthCare on this initiative. The housekeeping department has partnered with infection

prevention and nursing to identify areas within patient rooms that may need additional sanitation above and beyond standard housekeeping tasks.

Regulatory

This year, infection prevention began surveillance of catheter-associated urinary tract prevention in all of the hospital's intensive care units. Colon surgical-site surveillance was also new in 2012.

Anesthesia

Infection prevention's partnership with anesthesiology in 2012 made considerable progress. The department began participating in Anesthesia Academy, which every employee in infection prevention attends annually, anesthesia resident orientation and anesthesia new employee orientation. Education is focused on infection prevention requirements that are part of the general operating room observation process. The team offers various educational venues including real-time and hands-on presentations, which provide the opportunity to ask clarifying questions and share recommendations for infection prevention.

Team awards and recognition

Barnes-Jewish Hospital continues to be a leader in infection prevention. Jennie Mayfield, Barnes-Jewish clinical epidemiologist, was elected president-elect for the Association of Professionals in Infection Control (APIC). Mayfield has served as treasurer of APIC for four years. Infection prevention team members represented the hospital with four poster presentations at APIC's annual conference and during Infection Diseases week in October, in which several infection prevention organizations come together to advance science and improve care. The Barnes-Jewish infection prevention team also holds a number of offices within local chapters of APIC.



APIC

Spreading knowledge.
Preventing infection.®

Lean Transformation Journeys

Barnes-Jewish Hospital's history with Lean and Six Sigma continuous improvement methodologies, which are used to determine how improvements can be implemented and sustained, began in 2006. Since then, the hospital's process improvement efforts have expanded vertically and horizontally to reach every corner of hospital operations including clinical, office, and patient and family environments, as well as a myriad of projects from the patient guide and navigator program to billing and physician hand-off. Resources to support these process improvements include a director of operational excellence and a team of 10 full-time employees. In addition, the operational excellence department has increased its reach by training Lean "experts" throughout the hospital who facilitate improvement projects within their departments as needed.

The combination of the two methodologies has proven effective for Barnes-Jewish Hospital (BJH). Lean requires staff engagement to solve problems by eliminating waste. Six Sigma is a systematic, fact-based, data-driven, problem-solving process that is comprised of the following phases: Define-Measure-Analyze-Improve-Control. Rapid Improvement Events (RIEs) are team activities used at the hospital to design, test and implement changes very quickly. The key to effective improvement is to identify the specific root causes of a problem in order to ensure interventions are effective and sustainable.

"Being visual with our communication

has really helped hold everyone

accountable without being punitive..."

Safety, communication improve with ComBo boards

With more than 500 team members in the medicine service line, Teresa Halloran, PhD, RN, patient care director, medicine, has been working on streamlining communications with her team members.

One tool the medicine team is using to communicate is called a "ComBo" (Collaborative and Overall Management in Business Operations) board. Developed in-house at BJH, this tool was implemented on every medicine unit in 2012. The ComBo board is a large, touch-screen monitor that displays the unit's census board and vital information for each patient's progress. As a visual management tool, it is used for discharge planning—making many paper/pen record-keeping processes obsolete.

"Staffing assignments are stored on the board, as well as information on patient arrivals," says Halloran who ensured ComBo boards were on each of her five inpatient medicine units. "It also has sections for social work and case management to make sure we all are on the same page as the patient moves toward discharge."

In addition to the standard metrics used house-wide, the medicine team met in early 2012 to determine the necessary metrics it would need to improve patient safety and team communication.

"We rebuilt the medicine version to include things like pressure ulcers, fall risk, daily bath and weight," says Beth Cotton, nurse manager on medicine unit 10100/10200. "We



Kalcee Forman, BSN, RN, clinical nurse manager, on neurosciences unit 11400/11500 (standing, center) updates Heather Triplett, RN, lead charge nurse, using the unit's ComBo board. Shawn Schlemer, RN, staff nurse (seated), orients a Forest Park Community College nursing student.

also included a voice-of-the-patient comment field for staff to add personal notes about the patient such as needing help with transportation or paying for their medications. We find a lot of value in having that conversation with each patient."

The team on 10100/10200 also uses the ComBo board as a rounding tool. After the physicians and nursing leadership round on each patient, the entire team gathers around the ComBo board to do a brief on each patient's plan and share information.

"After we brief at the ComBo board, each nurse goes back to the patient's room to write the plan on the whiteboard," Cotton says. "This process helps us keep the patients involved in their care."

In addition to nurses updating the board, ancillary services such as physical therapy and case management also update their portion of the board so the entire multidisciplinary care team is apprised of each patient's plan of care.

“Being visual with our communication has really helped hold everyone accountable without being punitive,” says Cotton. “Our culture has changed for the better with more accountability and communication through these formal conversations. It was always happening before the ComBo board, too, but now we have an official process to follow.”

OR Just-in-Time Pack Project

Perioperative services is responsible for managing a supply budget of more than \$100 million annually and preparing operating room (OR) packs for nearly 40,000 operations conducted annually at BHJ.

By working with its primary supplier, Cardinal Supply, the team achieved a streamlined process for delivering and stocking carts that eliminated the need for substantial re-packaging. As a result, the team has:

- reduced the number of steps required to create packs from 23 to 13

- realized savings of 1,200 hours of labor annually
- removed about 51,000 pounds of waste from the waste stream
- reduced annual costs permanently by about \$73,000

The team continued to focus on just-in-time pack delivery, meaning they only ordered what was needed for the next day's scheduled surgeries. This had been the practice for some time, but instead of placing two separate orders daily—one for the next day's orders and one to replenish stock for add-ons and weekends—they consolidated the orders and placed only one. They also were able to place the order three-and-a-half hours earlier, allowing Cardinal more time to fill them. In addition, the case-cart personnel pulled the packs directly from the blue carts that were organized by service rather than pulling them from the case carts.

“By coordinating efforts with the operating-room scheduling team, we are saving time, effort and the amount of packaging used to ship and deliver our packs,” says Bob Guardado, materials management manager.

“Our team members can focus on the accuracy of supplies in the store room and OR room OMNI cells instead of breaking down boxes and opening packaging,” Guardado says. “It has really improved morale because team members know they are working on something that could potentially save a patient's life.”

This achievement was recognized as a “top gun” project by Cardinal Supply—one of 13 selected among Cardinal's international enterprise. The process also has been adopted by other hospitals within the BJC HealthCare system.

Mujahid Qalbani, senior materials handler, and Tyler Coates, lead inventory coordinator, in the OR supply, unload the remaining packs in the carts from Cardinal Supply after the day's case carts have been filled. The additional packs are back-up stock for add-on and emergent cases throughout the day or weekend.



Patient Experience

Barnes-Jewish Hospital (BJH) and its physician partners at Washington University School of Medicine (WUSM) have long focused on being national leaders in medicine. For 20 consecutive years, BJH and WUSM have ranked among the best hospitals in America by *U.S. News & World Report*, including a top ranking in the “2012-13 Best Hospitals” issue. To date, Barnes-Jewish is the only hospital in St. Louis and the state of Missouri to be recognized as one of America’s best hospitals by *U.S. News & World Report*.

As a 1,150-bed hospital, the size of the BJH campus can be intimidating—from parking, finding the way to an appointment, getting lunch in the cafeteria, to being admitted and discharged. All of these affect what is called the patient experience, and along with being national leaders in medicine, Barnes-Jewish is committed to being national leaders in the patient experience.

To help focus the patient experience vision, new values to the organization were introduced:

ICARE, which stands for integrity,

compassion,

accountability, respect

and excellence. These

values were not the

creation of the senior

leadership team alone, but were

developed from input received through focus groups of team members, patients and family members beginning in late 2009. Teaching and training of the ICARE values to support a service excellence culture began in mid-2011 and has continued to ensure that every BJH employee has participated. In 2012, evaluation of ICARE values was introduced into each employee’s annual review discussion.



The patient experience team, consisting of a director and four full-time employees, is charged with helping to identify ways to provide the best possible service to patients, visitors and each other. This includes training employees in the ICARE values and ensuring those values are evident in the care provided daily.

Managing for Daily Improvement

The patient experience team is helping units and departments throughout the hospital drive true culture change. Simply introducing new values doesn’t necessarily lead to improved patient experience. Accountability and sustainability are key to the plan.

Many units throughout the hospital are using a visual management tool called an MDI board, which stands for managing for daily improvement. On neurosciences unit 11400/11500, the team is tracking only metrics that matter to patient safety and quality, including patient falls, patient satisfaction key drivers and standard work for nursing staff.

Each metric is tracked daily and posted in the break room for all team members to see.

“I do a daily Gemba walk to ensure standard work is being followed,” says Kalcee Foreman, BSN, RN, clinical nurse manager on the unit. She checks for things like proper use of the patient whiteboards, bedside shift report and proper patient handoffs. She then marks whether or not the team was successful for the day on the MDI board. Staff can visually see it at all times, and they huddle together to discuss the metrics once a week.



Lead charge nurse Sarah Sidwell, BSN, RN-CMSRN, on unit 10100, reviews patient information with Jill Gasperin, BSN, RN, staff nurse, before rounding.

“I can address issues and concerns in the moment, and give feedback immediately,” Foreman says. “Not only do I focus on nurses but dietary or housekeeping employees as well, and can recognize those employees as appropriate.”

Foreman says the biggest change this year has been with leadership rounding. She chooses two patients to round on each day. One day Foreman rounded on a patient who came to BJH from a small town three hours away.

“The patient explained that she had received excellent nursing care, but wasn’t happy with her stay overall,” Foreman says. “I was able to get our patient family coordinator and patient liaison involved to address the woman’s concerns before she left. She would not have left in the same mindset if I had received her phone call two weeks after she was discharged.” This proactive rounding helps resolve issues immediately and improves the overall patient experience.

Employee Engagement

BJC HealthCare and Barnes-Jewish Hospital (BJH) leadership teams recognize that the most crucial part of being a national leader in medicine is based on the skills, professionalism and attitude of its employees. In 2007, the hospital implemented an annual employee engagement survey to gauge the level of commitment of employees to their individual roles within the hospital, and to evaluate their overall view of the mission, vision and leadership of Barnes-Jewish.

Each year following the survey, department leaders share their team's results with employees. As a group, each department develops an action plan focusing on improvement and change if necessary. Initially, the participation rate was 69 percent. Each year, participation has increased, and in 2012, it was at an all-time high at 91 percent.

"This is a rare accomplishment for an organization of our size," says Rich Liekweg, president. "While we are very encouraged by our positive results, we also have opportunities for improvement."

BJH's highest scores were in the areas of **service excellence, diversity, employee engagement** and **integrity**. The hospital also saw statistically significant increases in leadership and service excellence. Employee engagement, teamwork, development and opportunity, and proactive employee relations each increased by one point.

Top: Compassion fatigue facilitators include (from left) Marty Clarke, cancer psychiatry consultations service; Kathleen Walton, social worker; Julie Berger, chaplain; Brent Brazzell, human resources; Patricia Potter, director of research and patient care services; and Cathy Powers, clinical nurse specialist.



Stem Cell Transplantation and Leukemia Center



Definitions Of Survey Categories

Development and training: Adequate training, development opportunities, recruiting and retaining talent

Diversity: support for diversity and inclusion

Employee engagement: connection, contribution, credibility

Immediate manager: clear, effective communication

Integrity: high ethical standards, safety ensured

Leadership: encouraging style, effective communication, clear vision

Operating efficiency: tools and resources, timely decisions, effective work practices

Service excellence: responsive to patient needs, high regard by patients

Teamwork/working relationships: cooperation, competence and respect

Total rewards: pay, benefits, managing performance

Work/life balance: flexible schedule, sufficient staff

Proactive Employee Relations (PERs): the relationship between employees and their leaders, the way employees are treated and how employees view BJC as a place to work

Patient Safety Index (new category): patient safety, sufficient staffing, recognition



Above: Members of the housekeeping team include Vincent Alford and Felicia Farmer.

Left: Nurses from the bone marrow and stem-cell transplantation unit include (from left) XX, Barbara Rice, RN, Geary Gardner, BSN, RN, CCRN, Sabine, Fyfe, OCN, BSN, RN, and Marie Thornton, RN.

Barnes-Jewish Hospital Center for Diversity and Cultural Competence

The Center for Diversity and Cultural Competence at Barnes-Jewish Hospital continues to focus on work-force diversity, cultural competency and health literacy as essential components of the overall strategy to meet patient safety and quality metrics and deliver the best possible patient experience. Some of the specific successes of 2012 included:

- A proposal to The Foundation for Barnes-Jewish Hospital for funding for a hospital-wide health literacy initiative, which was approved
- Partnering with the hospital's lean consultants to help with process mapping to identify opportunities to be more patient centered
- Working with cultural competence trainers and liaisons across the hospital to train team members on topics related to cultural competency and health literacy, and the addition of a live dispatch service to make it easier for staff to obtain an interpreter, resulting in 53,289 assisted encounters in 104 languages with patients who speak limited English or are deaf
- More than 2,500 team members received training on improving communication by focusing on health literacy, effectively working with interpreters and negotiating world-view differences
- Working with a researcher from the patient care services team to evaluate the center's interventions and share with others through publications
- Partnering with the OB/GYN clinic for a pilot project to become a model clinic that integrates health literacy principles into all aspects of clinic operations including:
 - » Working with a multidisciplinary team that includes a nurse, nurse practitioner, physician, registrar, secretary, social workers, clinic leadership and staff from the Center for Diversity and Cultural Competence
 - » Developing a policy for written materials to ensure clear and understandable written communication such as forms, patient education materials, etc. that everyone has to follow including researchers at the clinic
 - » 18 staff members completed a 49-item self-assessment evaluating spoken and written communication, patient self-management and empowerment, and supportive systems at the clinic
 - » Clinic staff receiving training regarding health literacy issues with a primary focus on improving processes to ensure clear communication
 - » Voice-of-the-customer survey interviewing 50 patients about their experiences with communication in the OB/GYN clinic

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Vietnamese interpreter Hanh Paradise, one of the hospital's 30 interpreters, explains follow-up care to a patient prior to discharge.

...the addition of a live dispatch service makes it easier for staff to obtain an interpreter, resulting in 53,289 assisted encounters in 104 languages with patients who speak limited English or are deaf.

Improving Medication Safety

Barnes-Jewish Hospital's commitment to process improvement extends to every area of the hospital, and medication safety is at the top of the list. Each year, the pharmacy team dedicates multiple resources and calls on staff throughout the hospital to identify processes that increase medication safety for all patients.

Insulin and Hypoglycemic Agents

- In 2012, the team implemented a hypoglycemia alert program using a risk-prediction algorithm on all 18 acute-care nursing units. The foundation of the program is education and training. Lead charge nurses, who have been trained extensively, are paged with a hypoglycemia risk alert when a patient reaches a certain blood-glucose level and the algorithm threshold is triggered. After reviewing the patient's home and hospital insulin use, the nurse assesses the patient's insulin therapy and recommends therapeutic changes to decrease the patient's hypoglycemic risk.
- The team also created a modified non-ICU hyperkalemia order set, which includes automatic orders for monitoring potassium and glucose post-hyperkalemia treatment involving insulin use.
- *When patients are in the hospital, they don't have the same diet as they do when they're at home, usually eating less. To prevent a patient's blood sugar from getting too low, communication was sent recommending physicians consider a 20 percent reduction in home daily insulin dose upon admission, discontinue oral diabetic agents for most patients, and review blood glucose levels daily to adjust basal insulin dosing as needed.*
- Additional safe insulin management training for all inpatient nurses began in June 2012.

Anticoagulants

- In 2012, the team revised the anticoagulation section of the 2012 Barnes-Jewish Hospital Toolbook with updated dabigatran information, and vitamin K information to include the newest guidelines for warfarin reversal. Sections were also created for rivaroxaban, therapeutic enoxaparin and warfarin.
- The team is in the process of modifying therapeutic enoxaparin order sets and pharmacy expert system (PES) alerts to include dosing information for special patient populations.
- The team is also developing enhanced PES alerts and orders sets for prophylactic use of enoxaparin to optimize safe and effective dosing in patients with extreme ranges in body weight.

Opiate Medications

- Implemented the Pasero Opioid Sedation Scale (POSS) assessment for opiate medication administration in non-ICU inpatient nursing units.

Medication Reconciliation

- Updated the report prescribers (interns, residents and nurse practitioners) use to reconcile a patient's medication when transferring to another area of the hospital or at discharge. The new report lists current medications at the top and home medications at the bottom with additional selections, improving clarity and eliminating redundancy.

Valerie Garber, supervisor of the mobile pharmacy program, which was implemented in 2012, orders patient Joy Jones' prescription.



In COMPASS

- COMPASS, the electronic medical record system implemented at Barnes-Jewish Hospital in 2009, continues to be enhanced. Some of the specific projects in 2012 included:
 - » When a nurse marks "not done" in Medical Record Administration for an order with duration in doses, the message says "CAUTION: Marking the task as 'not done' will result in the patient not receiving the ordered number of doses. Please reschedule to a different time INSTEAD of marking as 'not done' to ensure the patient receives the correct number of doses."
 - » When the nurse scans an opiate medication, the task form that opens will display pain scores and all other opiate administration for the last 24 hours.

Outpatient Services

With the opening of the 12-story **Center for Outpatient Health**, 2012 was an exciting time for outpatient services. The Center for Outpatient Health houses the new Barnes-Jewish Hospital clinics including:

- *Primary Care Medicine*
- *Obstetrics and Gynecology*
- *Surgical and Wound Care*
- *Psychiatry*
- *Specialty Care*
- *Dermatology*
- *Neurology*

The new clinics have been well received, with almost all clinics experiencing an increase in patient visits.

Hyperbaric Program

Plans to add a hyperbaric program in the Surgical Wound Care Clinic were finalized in 2012. The program will feature two HBOT chambers to treat surgical wounds. Barnes-Jewish Hospital's physician partners at Washington University School of Medicine are developing a training program, which will accommodate physicians from across the country.

Other outpatient services initiatives were under way throughout the year including:

Gastrointestinal Endoscopy

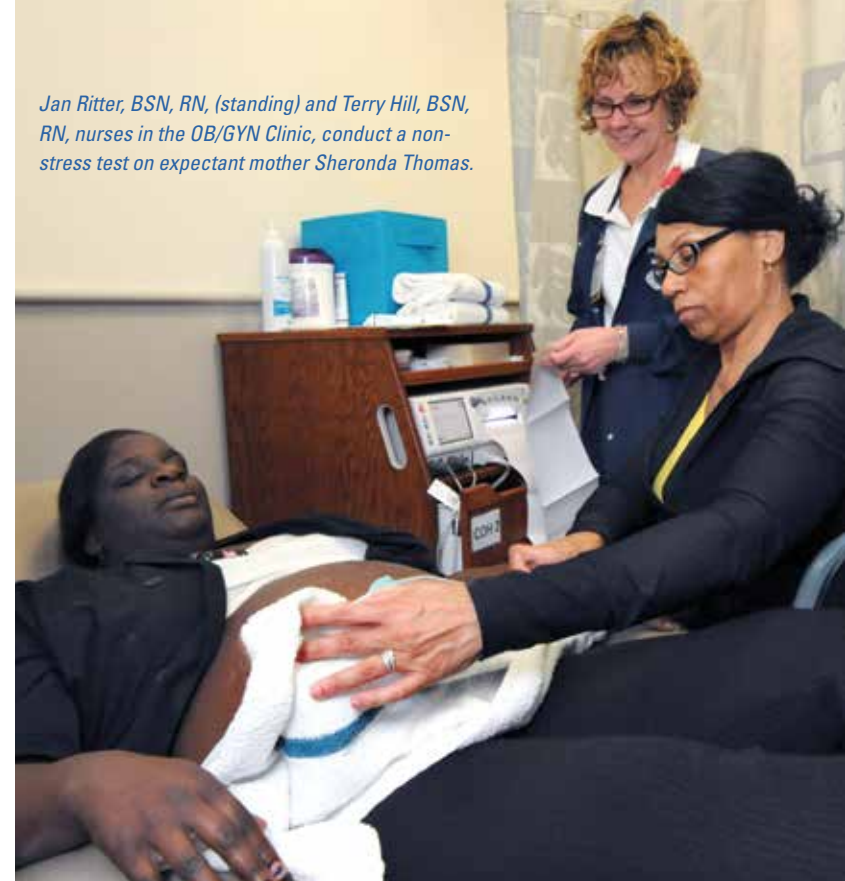
The endoscopy department implemented several patient safety and quality measures in 2012. The department's Unit Practice Committee (UPC) created a reference binder for every procedure room, which includes frequently needed information regarding medications, equipment and technical details. Staff were surveyed to determine the information they needed at their fingertips to capture in the reference book. In addition to serving as a guide for nurses during procedures, the book has also helped saved time.

In January 2012, the department moved one of its clerical schedulers into the role of family liaison after attending a Lean outbrief and learning of another area that had success with this position. The liaison uses data on procedure times to inform patients' families about the approximate length of procedures. If the case runs longer than expected, the liaison communicates this to the family. The addition of the family liaison has enhanced the patient/family experience, providing them with an accurate and realistic time expectation for the procedure with updates if necessary.

Another initiative led by the department's UPC was the development of a perforation algorithm and two perforation kits with supply lists, standardized order sheets and all needed supplies. This has allowed nurses working in the post-procedural area to quickly identify any patient who may have an internal perforation, and facilitates a quick and effective response.

Stacy Parks, LPN, documents her patient's visit in the clinic in the Center for Outpatient Health.

Jan Ritter, BSN, RN, (standing) and Terry Hill, BSN, RN, nurses in the OB/GYN Clinic, conduct a non-stress test on expectant mother Sheronda Thomas.



Pain Management Center

The Pain Management Center located at the Center for Advanced Medicine is planning their new home. Currently located in two locations on campus, the center will consolidate to one larger facility to care for patients and to accommodate an expansion of faculty. The center offers a multidisciplinary approach in the control of pain from a number of perspectives, including physical therapy and cognitive behavioral therapies. Each patient has an individualized treatment plan designed to help decrease pain symptoms and provide the tools needed to better manage living with pain. Occupancy of the new center is planned for early summer 2013 with additional procedure rooms and newer ultrasound technology. The center anticipates treating more than 10,000 patients in 2013.

Barnes-Jewish Extended Care

Barnes-Jewish Extended Care (BJEC) is tucked away in a quiet corner of Clayton, centrally located in St. Louis. BJEC offers both long-term care services as well as a rehabilitation unit dedicated to the more critical needs of orthopedic, post-surgical, stroke recovery and other patients requiring continuing medical treatment after hospitalization. This continuum of care is backed by the reputation and resources of Barnes-Jewish Hospital (BJH) and Washington University physicians.

BJEC cares for an average of 96 residents each day. Admissions are accepted from all area hospitals but 90 percent of admissions come from BJH. BJEC and BJH work together through the Stay Healthy Outpatient Program (SHOP) to decrease readmissions to the hospital. Increased hours by the BJEC medical director through the SHOP program have shown a 27 percent decrease in readmissions to the hospital within the last year.

BJEC instituted Managing for Daily Improvement (MDI) boards to engage staff in daily improvement initiatives. Daily auditing of the medical administration record has helped decrease medication errors by 57 percent. Collaboration between the rehabilitation therapy department and nursing, through fall investigations and huddles, has resulted in decreasing falls by 18 percent. BJEC remains a no-restraint facility.

The activity therapy department developed a program to decrease urinary tract infections in residents by offering fluids during group activities to increase the amount of hydration. Although fluids are provided at meal and snack times, as well as during medication administration, there are

many opportunities during the remainder of the day when fluids may be offered. The year-long study showed a 93 percent reduction in urinary tract infections.

In 2012, rehabilitation therapy instituted a home-evaluation program. Therapist and residents visit the resident's home before discharge to determine accessibility and safety needs. Evaluations include:

- Measurement of door widths
- Ability to get to the mail box
- Bed and chair heights
- Furniture placement and kitchen accessibility

The therapists identify safety hazards that need to be corrected prior to discharge and work with residents for increased strength, and with families for home modifications. Therapists also address the resident's cognitive abilities regarding medication delivery systems in use at home. Of the 60 residents per day that qualify for Medicare, the average length of stay is 21 days with 76 percent re-integrating into previous living situations. The rehabilitation therapy department is fortunate to have a certified lymphedema therapist allowing limb wrapping, and therapy and massage to be performed in the home for residents needing this service. The therapist use a variety of thermal and electrical modalities to manage pain, decreasing the use of pain medication and the potential for falls, and bowel and bladder side effects.

BJEC also partnered with operational excellence engineers at BJH to conduct a 5S event—a workplace organization

Resident Joseph Fair attends speech therapy with Allison De Miranda, MS, CCC, SLP.



Jennifer Konold, physical therapist, helps resident Marla Jones walk using the parallel bars.

method consisting of sorting, straightening, shining, standardizing, sustaining—on one of the nursing units with a sustainment score of 3.5 out of 5. A Rapid Improvement Event (RIE) also was performed on the medication management process. Improvements were realized in standardized communication with physicians, accuracy of transcription of orders from physician order sheet to medical administration record, clarification of orders, receipt of new medications from pharmacy, and screening for flu and pneumonia vaccines. Auditing and sustainment activities continue on this project.

BJEC was selected by its pharmacy partner Interlock/Omnicare to be a test site for OMNICare medication dispensing system. This dispensing system allows immediate access, after pharmacy review, to first dose medications thus eliminating the six-to-eight-hour wait time with the previous process.



Environmental Safety

Emergency Management

Barnes Jewish Hospital's emergency management team, which includes leaders and staff from clinical and non-clinical departments, safely evacuated more than 200 patients as a result of three separate emergency events between July and September 2012.

- A water-main break at the corner of Kingshighway and Barnes-Jewish Hospital Plaza flooded the 17-floor Queeny Tower's subbasement, cutting off electricity to the building on a 100-degree day, necessitating the evacuation of 104 patients to other locations on the medical center campus.
- ICU evacuations in August during a catastrophic failure of a component of the ventilation system, which created smoke.
- Queeny Tower heart and vascular unit 2100 was evacuated during an internal flood in September.

Follow-up action items included:

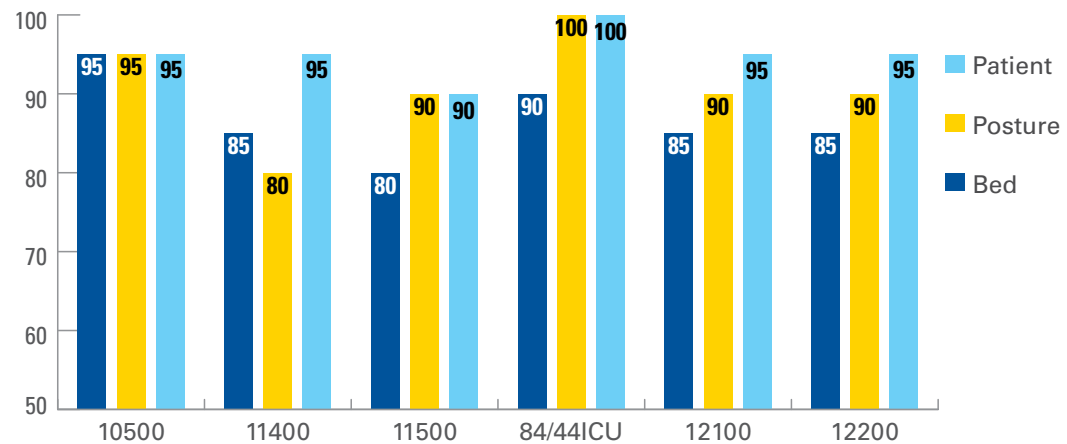
- » Infrastructure redundancies in pumping and electrical power to mitigate risk of flood impact on emergency generator in Queeny Tower, the only generator of 24 that is located in a building basement.
- » Engaged Ameren Missouri and outside experts to review current conditions and vulnerabilities and advise on mitigation steps.
- » Engaged campus planning consultants for the Water Utility Plan for Kingshighway Blvd., who will assist in a multi-year plan for infrastructure improvements.
- » Planning and tactical work with City of St. Louis Water Department engineers on prevention, maintaining current sub-surface drawings and response to ruptures.
- » Expanded predictive testing of key fans that maintain a protective patient environment.
- » Train additional leaders on incident command procedures.

Environmental Sustainability

- In 2012, Barnes-Jewish diverted from landfills more than 1,200 tons or approximately 22 percent of total hospital waste, an increase of 100 tons from 2011.
- The hospital's sustainability committee and BJC HealthCare procurement are creating a strategic agreement with national waste management vendors to gain cost control, expand recycling efforts and reduce approximately \$100,000 annually from hospital operations in the management of our waste streams.
- A new initiative in 2012 was to develop a program in perioperative settings to capture all pre-surgical case waste. This effort has yielded 23 tons of material that will not go to landfill and will be added to our recycling program.

Repositioning Project - 4th Quarter, 2012

Ergonomic evaluation of safe repositioning behavior following contextual training on proper repositioning of patients in bed



The water main break in July caused flooding on Kingshighway Blvd. north of I64/US40.

Injury Prevention Successes

- Effectively reduced radiation burden to resident physicians and staff eye lenses by 87 percent with the use of leaded protective eye wear.
- Effectively reduced patient repositioning injuries in five nursing divisions with ergonomic intervention.
- The new 4400 surgical/burn/trauma intensive care unit has patient ceiling lifts in all rooms.
- Reduced needle-stick injuries in a pilot program on five nursing divisions with a retractable needle safety syringe.

Achievements and Distinctions

Barnes-Jewish Hospital (BJH) accreditations and certifications include:

- The Joint Commission Accreditation Gold Seal of Approval
- The Joint Commission Accredited Programs
 - Hospital
 - Long-Term Care
 - Behavioral Health Care
- The Joint Commission Advanced Certification
 - Lung Volume Reduction Surgery
 - Stroke (Primary Stroke Center)
 - Ventricular Assist Device
- The Joint Commission Certification
 - Epilepsy
 - Joint Replacement – Hip
 - Joint Replacement – Knee



seal of *approval*

Barnes-Jewish Hospital has received the gold seal of approval from The Joint Commission.

Additional quality awards and honors include:

- The American Nurses Credentialing Center recognition as a Magnet® hospital, redesignated in 2008
- The American Heart Association's "Get with the Guidelines – Gold Performance Achievement Award"
- The American Stroke Association's "Get with the Guidelines – Gold Plus Achievement Award"
- The American Stroke Association's Target Stroke Award
- The American Society for Bariatric Surgery – Bariatric Center of Excellence
- BJH's trauma program achieved Level 1 verification from the American College of Surgeons—one of only three hospitals in Missouri to earn this honor
- 20 consecutive years on the *U.S. News & World Report* Honor Roll of America's Best Hospitals
- A Consumer Choice Award winner for 17 consecutive years from The National Research Corporation



a magnet for *nursing*

Barnes-Jewish Hospital is a Magnet® hospital, the highest national recognition for excellent nursing practice in hospitals.

The Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine recognitions include:

- A member of the National Comprehensive Cancer Network
- Designated by the National Cancer Institute as a Comprehensive Cancer Center
- The highest recognition from the American College of Surgeons Commission on Cancer



honor roll *2012*

Barnes-Jewish Hospital has been listed among the top hospitals in the nation for 20 consecutive years on the *U.S. News & World Report* Honor Roll of America's Best Hospitals.

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Charles Zorumski, MD

*Samuel B. Guze Professor of Psychiatry,
Department of Psychiatry
Washington University School of Medicine*

Allison De Miranda, MS, CCC, SLP, works with resident Brenda Roberts at Barnes-Jewish Extended Care.

Barnes-Jewish Hospital Facts and Figures 2012

Employees	9,728	Staffed Beds	1,190
Attending Physicians	1,771	Inpatient Admissions	56,379
Residents / Fellows	799	Inpatient Surgeries	19,417
Licensed Beds	1,288	Outpatient Surgeries	20,991
		Emergency Department Visits	86,490



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Care Services and Chief
Nurse Executive



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Maxine Clark and
Bob Fox Dean and
Professor, Goldfarb
School of Nursing at
Barnes-Jewish College



Trisha Lollo
Vice President,
Siteman
Cancer Center



Jerry Vuchak
Vice President,
Information Systems

The Center for Advanced Medicine houses the majority of the hospital's outpatient services.





for more information, visit us at
www.barnesjewish.org

BARNES JEWISH
Hospital
BJC HealthCare