



2013

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 Center for Outpatient Health, which houses the hospital’s resident clinics and some offices, expanded services in the Surgical and Wound Care Clinic this year to offer hyperbaric oxygen treatment for patients with hard-to-heal wounds. For details of the program, see page 15.

Right: Eunice Baker-Watkins, senior registrar with patient financial services, assists a guest while Tim Mullins, admitting supervisor, looks on.



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



“Our team at Barnes-Jewish Hospital is focused on discovery – a renewed commitment to developing better ways and solutions to new challenges.”

Dear Colleagues,

As you may know, the health care landscape has changed over the past several years and, in 2013, we experienced what was perhaps the most dramatic transformation of all. A number of actions at the federal level including the Affordable Care Act, Budget Control Act, Taxpayer Relief Act and the government shutdown have been challenging to hospitals across the country. This, combined with the aging population and the continuing increase in underinsured and uninsured patients, has created a difficult environment.

Even with these financial pressures, delivering the safest and highest quality services to our patients remains our top priority. Our team at Barnes-Jewish Hospital is focused on discovery – a renewed commitment to developing better ways and solutions to these new challenges.

One way we do this is through goal deployment, which can lead to breakthrough improvements. The goal deployment process is a systematic approach to managing change in critical business processes leading to sustainable breakthrough performance. This means that we identify fewer goals but with a firm commitment from all levels of the organization to “move the needle” by meeting or exceeding the target. In this year’s report, we have featured two of our goal deployment projects where we achieved significant and even phenomenal results.

Another area where we believe we have “moved the needle” is with our mobile pharmacy, an innovative program designed to help reduce readmission rates that also has had a significant impact on patient satisfaction and improved medication management.

All of these efforts lead to better outcomes for our patients, which, together with our physician partners at Washington University School of Medicine, is our sole mission. We are humbled by the unwavering dedication to our patients that we see from Barnes-Jewish Hospital team members and are pleased to have the opportunity to share some of their stories and successes.

Sincerely,

*Richard J. Liekweg
President
Barnes-Jewish 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

Emergency department team members prepare a patient for a CT scan. From left: Carrie Bettlach, MSN, RN, Kevin Williams, MD, emergency medicine resident, Peter Panagos, MD, Washington University emergency medicine attending, and Angela Harris, patient care technician.

Barnes-Jewish Hospital – 2013 Strategic Priorities

GOAL	2015 OBJECTIVE	2013 IMPROVEMENT PRIORITIES
Safety and Quality	University HealthSystem Consortium (UHC) Quality and Accountability: Top 10	*Achieve 98% core measure compliance
		*Enhance clinical documentation management and process improvement
		Avoid all preventable harm
		Improve and implement standardized clinical workflows
	Support continuum-of-care initiatives	
Service	Overall Quality of Care: 95th percentile	Achieve an excellent patient experience
People	Employee Engagement: 86	Develop, retain and recruit the most talented people
		Create culture of diversity and inclusion
		Proliferate and mature lean management model
Innovation	Adjusted Patient Days: 527,545	Strengthen clinical programs to enhance value to patients Transform facilities through Master Facility Plan deployment
Finances	Achieve 4% Operating Margin	*Reduce supply expenses, reduce utilization and remove waste
		*Increase the probability of payment prior to delivering non-emergent care
		*Reduce premium pay dollars
		Increase capacity/throughput

Safety Goal: Be the safest hospital

2015 Objective: UHC Overall Quality and Accountability #1

2013 ANNUAL OBJECTIVE	2013 IMPROVEMENT PRIORITIES	2013 ACTION PLANS
UHC Quality and Accountability: Number 30	SQ1. Achieve 98% core measure compliance	SQ1.1 Design and implement a process for 98% core measure compliance
	SQ2. Enhance clinical documentation management and process improvement	SQ2.1 Enhance documentation accuracy, completeness and efficiency, and add second level clinical/coding documentation SQ2.2 Improve key drivers of mortality and safety and implement MD scorecard for documentation

Quality Goal: Provide the best care

2015 Objective: UHC Overall Quality and Accountability #1

2013 ANNUAL OBJECTIVE	2013 IMPROVEMENT PRIORITIES	2013 ACTION PLANS
UHC Quality and Accountability: Number 30	SQ3. Avoid all preventable harm	SQ3.1 Reduce high-risk medication errors with harm to 1.37
		SQ3.2 Achieve 0.38 for central line associated BSI
		SQ3.3 Eliminate patient harm events related to blood distribution
	SQ4. Improve and implement standardized clinical workflows	SQ4.1 Improve medication reconciliation accuracy rate to 60%
	SQ5. Support continuum-of-care initiatives	SQ5.1 Evaluate and implement eICU across intensive care units
SQ5.2 Reduce readmission rate in 4 key areas to 19.3%		

* Indicates Top-level priority

University HealthSystem Consortium (UHC)

*As a national leader in medicine, Barnes-Jewish Hospital constantly strives to raise the bar of its own performance in all areas. One way the hospital does this is through its membership in the **University HealthSystem Consortium (UHC)**, which affords the opportunity to compare its performance with other leading academic medical centers across the country and benchmark against best practices.*

UHC's mission is to create knowledge, foster collaboration and promote innovation to help members succeed. This is accomplished with a variety of performance improvement products and services, including powerful databases that provide comparative data in clinical, operational, financial, patient safety and supply chain areas.



Mary Spencer, RN, executive director, neuroscience program; Kalcee Foreman, BSN, RN, clinical nurse manager; and Julie Griffin, BSN, RN, MHA, patient care director, neuroscience; celebrate receiving the Crystal Award from Professional Research Consultants (PRC) for inpatient neuroscience unit 11500 for achieving one of the nation's highest overall quality of care patient satisfaction scores.



Barnes-Jewish Hospital UHC Scorecard Improves in 2013

The information on the next page presents the measures evaluated in the **2013 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 were obtained from existing UHC data resources, including the Clinical Data Base (Q3 2012-Q2 2013), and Core Measures Data Base (Q2 2012-Q1 2013), as well as HCAHPS data from the Hospital Compare website (Q4 2011-Q3 2012).

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 2013 scoring and ranking cover the domains of **mortality, effectiveness, safety, equity, patient centeredness** and **efficiency** using risk-adjusted measures developed by UHC, national organizations or the federal government. Refer to the methodology white paper (available at www.uhc.edu) for specifics regarding the metrics, scoring method and data sources used.

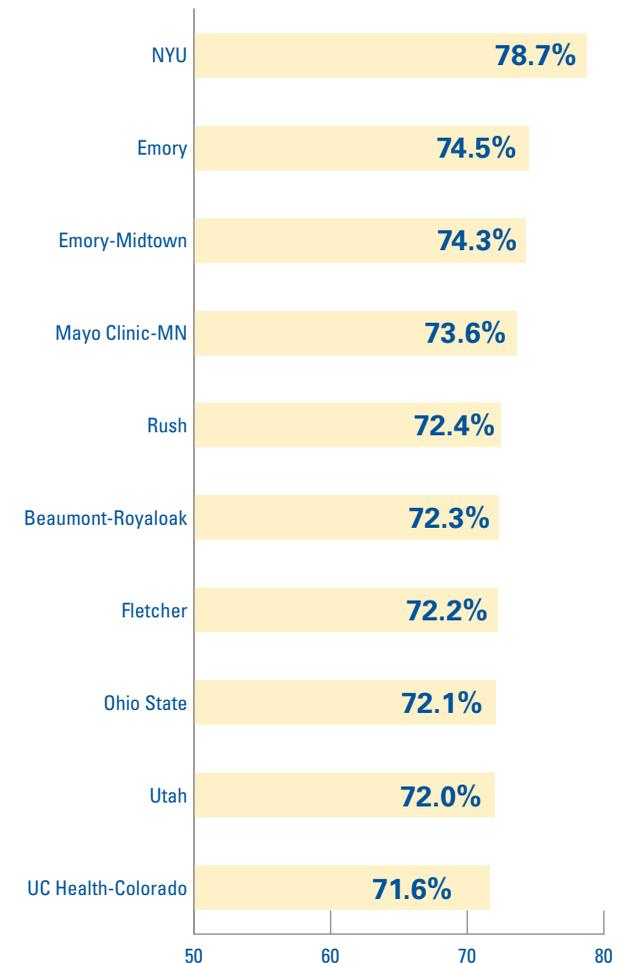
Barnes-Jewish Hospital's overall rank has increased significantly in the past three years. In 2011, the hospital's rank was 87 out of 103 UHC hospitals; in 2012, it was 72; and in 2013, it was 56. The hospital's goal is to reach the top decile and sustain that ranking.

2013 Quality and Accountability Performance Scorecard

Overall Composite Performance	Rating	Composite Score	Top-Performer Score	Group Median
Overall (Based on Clinical Domain Performance)	★★★	64.4	78.7	65.4
Clinical Domain Performance	Rank (* denotes tie)	Domain Score	Top-Performer Score	Group Median
Mortality (25%)	76*	50.0%	84.4%	59.0%
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 and vascular surgery.				
Effectiveness (25%)	80	78.5%	93.9%	83.0%
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%)	18*	60.0%	75.0%	57.5%
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 three 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%)	29*	60.9%	81.3%	57.8%
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%)	28*	61.7%	72.7%	56.6%
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.				

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UHC Top Performers Overall Composite Performance



Best-In-Class Clinical Quality Scorecard

Barnes-Jewish Hospital achieved an overall Best-In-Class score of 1.4 in 2013. 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	2013 TARGET	YTD 12/12 - 11/13	YTD vs GOAL
Appropriate Care	37.50	32.5	
Care Coordination	97%	99%	
Efficiency	1.6%	1.6%	
Patient Safety	37.50	31.43	
Value-based Purchasing (VBP) Clinical Process of Care	97%	99%	
Hospital Specific Measures	36.50	46.67	

2014 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

Improve Safety of Clinical Alarms

- Establish alarm safety as a priority and identify the most important alarm signals to manage
- Ensure alarm management procedures address key aspects such as alarm settings, changing or turning off alarms, response to alarms and checking equipment for proper operation of alarms
- Educate staff and providers about the purpose and proper operation of alarm systems for which they are responsible

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 20,000 health care organizations and programs in the United States. The Joint Commission is committed to improving health care safety. This commitment is inherent in its mission to continuously improve health care for the public, in collaboration with other stakeholders, by evaluating health care organizations and inspiring them to excel in providing safe and effective care of the highest quality and value. At its heart, accreditation is a risk-reduction activity; compliance with standards is intended to reduce the risk of adverse outcomes.

Joint Commission accreditation and certification is recognized nationwide as a symbol of quality that reflects an organization's commitment to meeting certain performance standards. Its National Patient Safety Goals (NPSGs) program was established to help accredited organizations address specific areas of concern in regard to patient safety.

The adjacent chart provides a review of Barnes-Jewish Hospital's NPSG measures comparing 2013 targets to year-to-date metrics.

■ Maximum ■ Target ■ Threshold ■ Minimum ■ Below Minimum

INDICATOR	2013 TARGET	YTD 12/12 - 11/13	YTD VS GOAL
Medication Safety			
Medications reconciled at <i>discharge</i>	90%	53%	Below Minimum
Medication labeling	90%	95%	Maximum
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%	92%	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%	98%	Target
Surgical or procedure-site marking completed prior to procedure:			
Operating room	95%	100%	Maximum
Procedure areas	95%	97%	Target
Time out (final verification process) conducted prior to the start of procedures:			
Operating room	95%	100%	Maximum
Procedure areas	95%	99%	Maximum
Bedside procedures	95%	99%	Maximum

Breakthrough Improvements

Goal deployment process (GDP) is a systematic approach to management of change in critical business processes leading to sustainable breakthrough performance. Through GDP, an organization sets a 3-5 year breakthrough objective, identifies annual objectives, and top-level improvement priorities and targets that will help achieve the breakthrough objective.

In 2012, Barnes-Jewish set a breakthrough objective of achieving a rank of one on the University HealthSystem Consortium (UHC) Quality and Accountability (Q&A) Scorecard. One of the 2013 annual objectives identified to reach this was to improve the hospital's UHC Q&A rating from three stars to four stars. One of the improvement priorities tied to this objective was improving overall core-measure performance from 95 percent to 98 percent.

Patient Safety and Clinical Performance Improvement Director Roslyn Corcoran and Program Management Office Director Pat Mueth led the multidisciplinary team that focused on COMPASS, the hospital's electronic medical record system, to improve performance.

Urinary catheter removal

One key improvement initiative was urinary catheter removal by the end of post-operative day two, or documentation of the reason(s) for not removing it. It's not uncommon for urinary catheters to be left in place for more than the two-day period for a number of medical reasons. However, the possible development of a catheter-related infection frequently outweighs the reason to keep them in.

Although the hospital's compliance with the two-day removal was 92 percent at the end of 2012, improvement was still necessary *and* possible. Jeffrey Lowell, MD, FACS, Washington University liver and kidney transplant surgeon at Barnes-Jewish Hospital,

and Gerald Andriole, MD, Washington University chief of urology at Barnes-Jewish Hospital, led the initiative, which was to put a "hard stop" in COMPASS, forcing physicians to enter a removal date or provide justification for leaving the catheter in.

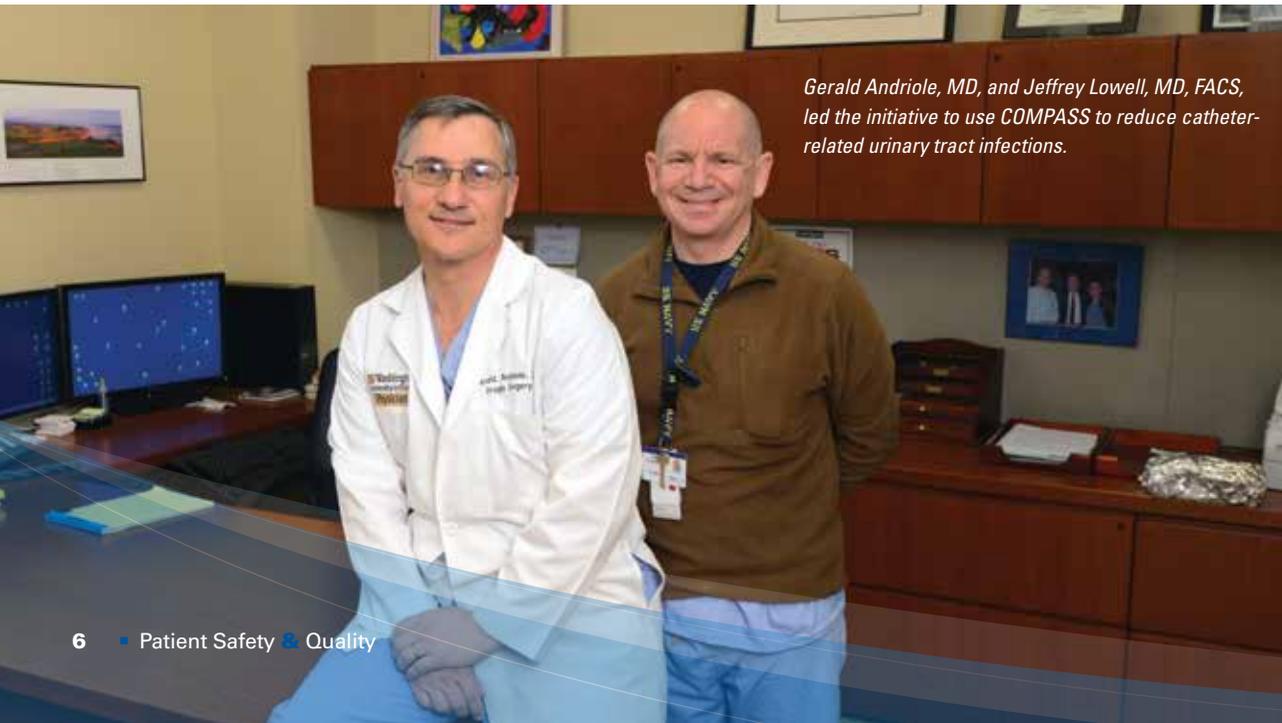
"Using COMPASS offered a number of benefits," says Dr. Andriole. "It documented when the patient left the operating room, which is when the catheter was initially inserted. Although this information was available before, most people did not consider it when assessing whether the catheter should be removed. Many practitioners also provided relatively vague reasons for not removing the catheter, which frequently did not justify leaving it in."

By using COMPASS to drive physician documentation, performance has improved to 100 percent.

"It was a relatively easy fix that is translatable to other things," says Dr. Lowell. "We don't typically use COMPASS for quality metrics. This is an example of how this could work with other issues. My hope is that there are other measurements that can be addressed to hardwire best practices in COMPASS."

Discharge package

Another major achievement of the goal deployment process was the implementation of the discharge package, specifically the multidisciplinary physician discharge note and companion ancillary notes. Suzanne Whiteley, MSN, RN, RRT, and Rosebud Alexander, MS, RN, clinical information systems coordinators, partnered to address the clinical workflow and technical workflow respectively. Geoff Cislo, MD, director of



Gerald Andriole, MD, and Jeffrey Lowell, MD, FACS, led the initiative to use COMPASS to reduce catheter-related urinary tract infections.



medical informatics, provided physician expertise, Dick Bierwagen, CPHIMS, provided implementation support, and Pat Mueth, RN, MA, provided the overall vision and leadership for the project.

The goal of the multidisciplinary note is to get timely information to both primary care and referring physicians about their hospitalized patients.

Previously, pertinent information for both patients and physicians has been difficult to gather upon discharge. A wide-range of improvements was put in place including:

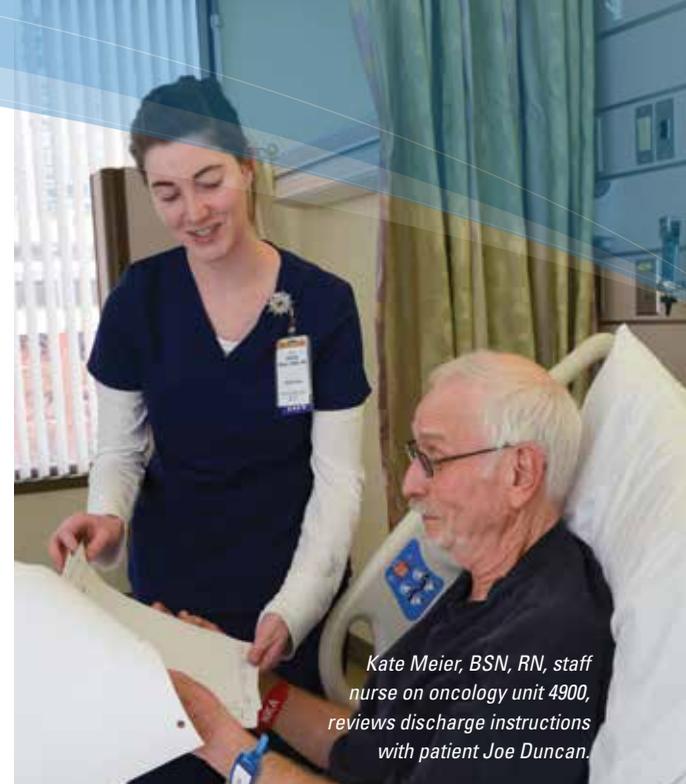
- The discharge note can be started anytime during the admission, so early and thoughtful discharge planning is encouraged. It allows for better coordination between caregivers and avoids rushing at the end of the patient's stay and delaying discharge. This increases patient and caregiver satisfaction and decreases errors.
- The note is started by the treating physician with all members of the care team having input, making the note as thorough as possible.
- The discharge package allows the care provider to quickly view and access different components of COMPASS without leaving the discharge note, such as the Orders module and the Outpatient Medication

Belinda Henriksen, MSN, RN, ACNP-BC, nurse practitioner, enters a patient's physician discharge summary and medication reconciliation into the discharge packet in COMPASS, the hospital's electronic medical record system.

Review module to effectively manage the discharge planning process.

- It includes information appropriate to each patient such as diet, activity, care instructions, warning signs to contact their physician, educational information, medications, and follow-up appointments and testing. This prints in an easy-to-read format with a large font.
- Patients receive discharge instructions with separate print-outs for medications and follow-up appointments that can be posted to the refrigerator or put in a wallet.
- With the help of physician and nursing experts in the clinical areas, more than 200 templates were created based on various patient conditions throughout inpatient areas. The templates were reviewed and approved by physician and nursing leadership. This ensured the discharge instructions were thorough and complied with patient safety principles and still allowed for customization as needed. These patient-specific templates provide the level of specificity combined with patient education to guide and manage effective discharge planning for increased patient safety.
- The patient instructions are translated to a fifth-grade reading level and meet Centers for Medicare and Medicaid Services (CMS) and Joint Commission standards with assistance from the nurses in the hospital's Center for Practice Excellence.
- A fax is automatically sent within 24 hours to the primary care and referring physician upon discharge

These patient-specific templates provide the level of specificity combined with patient education to guide and manage effective discharge planning for increased patient safety.



Kate Meier, BSN, RN, staff nurse on oncology unit 4900, reviews discharge instructions with patient Joe Duncan.

of the patient. Upon request, a faxed copy of the note can be sent to an out-of-network provider.

- For patients being readmitted, the entire note is available within 24 hours in the BJC clinical repository/ClinDesk so the current care team can review the history.

Continuous input from physician and nursing groups was collected as the process evolved and enhancements were made based on the feedback. In 2013, the new note was made available throughout the hospital except for the women and infants areas, which is planned for 2014.

As a result of the GDP, all core measures are performing higher than in previous years and overall year-to-date performance has reached the goal of 98 percent.

Goldfarb Patient Safety and Quality Fellowship Program

The Barnes-Jewish Hospital Patient Safety and Quality Fellowship Program provides hands-on experience for junior faculty interested in leading and advancing patient safety and health care quality.

Established by the Goldfarb Foundation, the program continues to be supported by the Foundation for Barnes-Jewish Hospital. It offers opportunities for physicians to focus on process improvements for which they have a passion, while developing leadership skills within a mentoring environment.

Stephen Liang, MD, Washington University Infectious Disease Specialist

Stephen Liang, MD, is a Washington University infectious disease specialist, emergency physician and hospital epidemiologist at Barnes-Jewish Hospital and Barnes-Jewish West County Hospital. His focus is infection prevention and patient safety, particularly as it relates to the dynamic environment of the emergency department. High patient acuity, simultaneous encounters, fluctuating volumes, time-

sensitive diagnoses and rapid patient turnover make the emergency department a challenging place to sustain hand hygiene, contact precaution use and other infection prevention practices.

In 2013, Dr. Liang began a multifaceted study to understand the barriers to infection prevention practices in the emergency department and develop strategies to improve hand-hygiene and contact-precaution adherence through enhanced health care worker awareness and education. He also expanded his scope to encompass infection prevention in pre-hospital settings.

Dr. Liang is currently conducting a national survey of knowledge and attitudes among emergency medical services professionals toward infection prevention and multidrug-resistant organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA). He serves on

the hospital's patient safety and quality improvement committee for the emergency department as well as the Executive Sentinel Event Review Team. He is also actively engaged in quality improvement projects to reduce surgical-site infections and improve early recognition of sepsis in hospitalized patients.

Emily Fondahn, MD, Washington University Internal Medicine Specialist

Emily Fondahn, MD, Washington University internal medicine specialist, focused on improving transitions of care and reducing preventable readmission rates for patients throughout the BJC HealthCare system.

These efforts included a cohort study of patients admitted to Barnes-Jewish or Christian Hospital with acute myocardial infarction, chronic obstructive pulmonary disease, pneumonia and congestive heart failure to identify the social determinants and non-clinical risk factors for readmission. Dr. Fondahn and her team performed chart reviews and patient interviews as part of this large quality improvement project and identified a number of significant differences between patients who were readmitted and those who were not. They found some surprising similarities between the two groups, such as a significant amount of cognitive impairment. The findings from the project have been presented to the readmission teams at both hospitals and may be used to guide future improvement projects.

Dr. Fondahn is also assisting an internal medicine resident with a research project evaluating the effects of the "bounce-back" policy on readmissions and length of stay. Previously, a patient discharged from the medicine service only returned to the initial team if re-admitted within 48 hours of discharge. In July 2012, the policy changed so that a patient returns to

Goldfarb Fellows Stephen Liang, MD, (center) and Emily Fondahn, MD, (center) participate in the monthly meeting of the Executive Sentinel Event Review Team with Katherine Henderson, MD, assistant chief medical officer (left), and Michael Lane, MD, (right), patient safety officer, internal medicine.

Goldfarb Fellow Amit Amin, MD, (right), and Mark Vogel, MD perform an angioplasty procedure in the Barnes-Jewish Hospital cardiac catheter lab.

the primary team if the resident is still on the service. They are investigating if this policy change has affected readmission rates, length of stay or risk of mortality.

Dr. Fondahn also worked to:

- Enhance and evaluate opportunities for quality improvement and patient safety training for internal medicine residents
- Track and improve the quality of care provided to patients with diabetes in the hospital's Primary Care Medicine Clinic

Amit Amin, MD, Washington University Cardiologist

Amit Amin, MD, is a Washington University interventional cardiologist at Barnes-Jewish Hospital. His research is a merger of his clinical interventional cardiology interests with a focus on outcomes, including patient-centered approaches to patient safety and quality, and comparative effectiveness research, to determine how emerging treatments can best be incorporated into routine clinical care. In the cardiac catheter lab, his focus is to reduce bleeding complications related to the angioplasty (PCI) procedure, as well as reduce other complications. Patient safety and quality programs he has implemented include:

- A transradial angioplasty procedure program
- A same-day discharge program after angioplasty
- The SAFER-PCI program, a novel patient-centered approach to reducing complications of angioplasty such as bleeding and acute kidney injury



Transradial access uses the wrist (radial artery) for angioplasty instead of the traditional groin (femoral artery). Angioplasty via the radial artery is associated with significantly lower rate of bleeding and vascular access complications, is less painful, improves patient satisfaction, has a shorter recovery period, and promotes early ambulation. It is also associated with lower costs and reduces nursing care post-procedure.

Dr. Amin also developed a new protocol for eligible patients undergoing angioplasty that allows discharge on the day of their procedure. This same-day discharge has proven to be a safe and effective way to allow patients to recover within the comfort of their home, while reducing costs. In the pilot phase, patients have greatly appreciated the ability to recover at home while maintaining access to physicians and care providers.

The SAFER-PCI program addresses bleeding and AKI, which are two common, costly and life-threatening complications of angioplasty. Many hospitals have high rates of bleeding (8 percent) and AKI (7 percent). Dr. Amin believes that validated risk-prediction models can quantify a patient's risk before these complications occur. If these risks are known, several highly effective bleeding avoidance therapies (BATs) and AKI reduction strategies can be used. His team has implemented a novel health information technology solution called ePRISM to translate bleeding and AKI risk-prediction models at the point of care. Using this information, a decision aid is generated that informs physicians of the patient's bleeding and AKI risk and recommends evidence-based bleeding avoidance therapies and AKI reduction strategies prior to the procedure.

Joint Commission Center for **Transforming Healthcare**

Since 2011, Barnes-Jewish Hospital has collaborated with the Joint Commission's Center for Transforming Healthcare and six other hospitals around the country to use Six Sigma methodology to prevent falls with injury. Prior to this program, Barnes-Jewish participated with BJC HealthCare's Center for Clinical Excellence in a Lean Rapid Improvement Event on three oncology divisions as part of the preventable harm initiative. As a result of these intensive programs, the team validated that falls are a multifaceted, complex problem that need constant vigilance and continuous improvement to sustain patient safety. Falls that result in serious injury can be life-changing for patients and families, as well as caregivers, and have potentially severe financial consequences.

A previous study of falls at Barnes-Jewish conducted by Washington University revealed a patient that experiences a severe injury from a fall has greater operational costs of \$13,316 and stayed 6.3 days longer than a patient that did not fall. The Center for Medicaid and Medicare Services has identified "Falls and Trauma" on its current list of Hospital-Acquired Conditions (HAC) for which reimbursement will be limited.

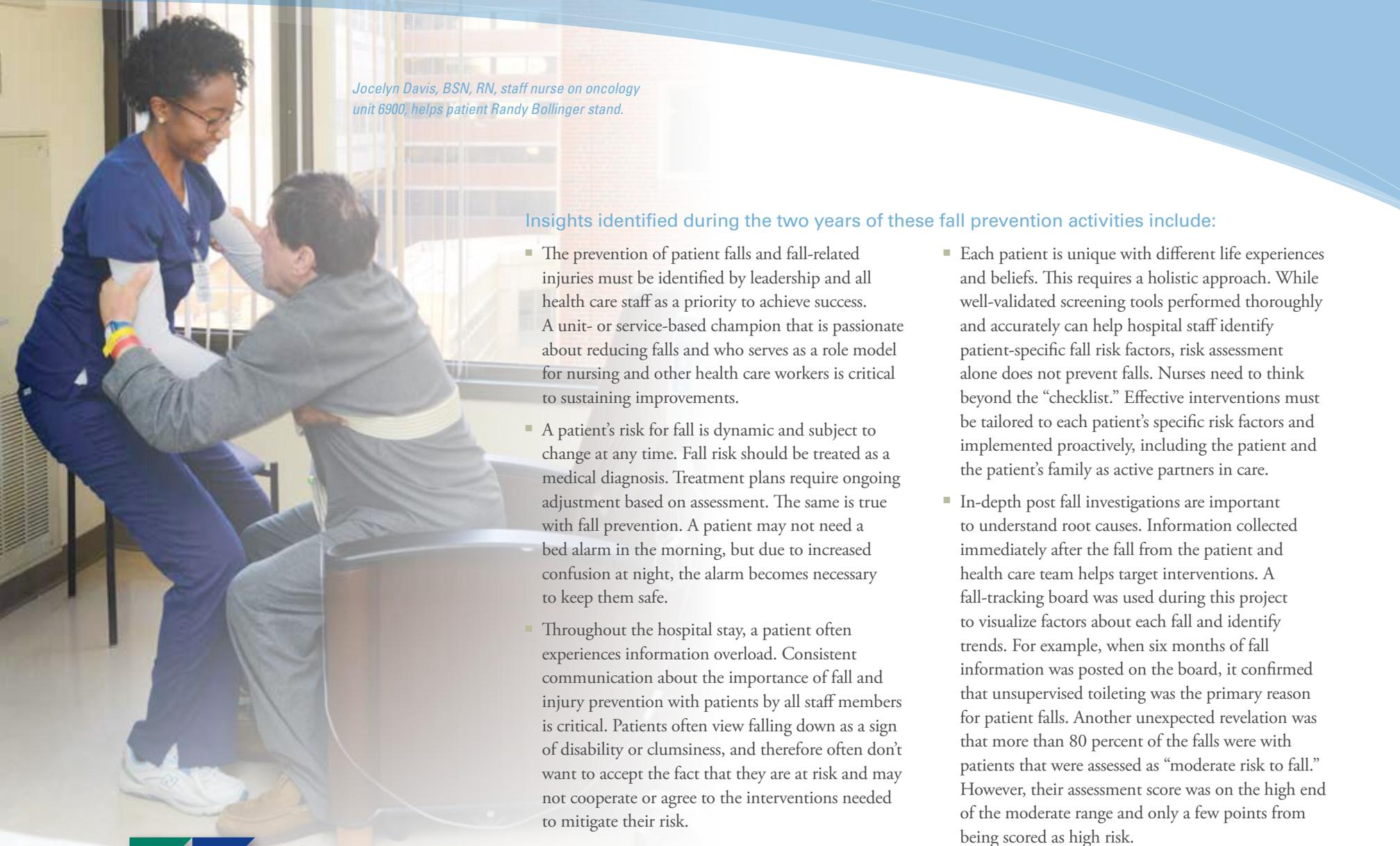
Method

Lean techniques and Six Sigma tools were used to investigate root causes of the most critical factors such as unassisted toileting and continuously changing patient conditions such as cognition and medications. Insights from these assessments led to the development of a "Patient Partnering" intervention driven by advanced practice nurses. The purpose of patient partnering is to apprise the patient of their fall and injury risk factors, discuss and agree on prevention measures and to emphasize the importance of calling for help. This allows the patient to become an active participant in preventing their own falls. This intervention was tested on 55 patients who were at higher risk of falling. Eight of these patients were found to be extremely probable to fall, yet not one fell during their hospital stay.

Results

One measure of success with this project is a decrease in unassisted falls. There was a 32 percent improvement in the number of falls that were unassisted when comparing the baseline in 2011 to current year 2013. A fall that is assisted is less likely to result in an injury. The percent of falls with serious injury have decreased from 10 percent to 6 percent from 2010 to 2011 and there were no falls with serious injury on the intervention unit in 2013. Proactive use of injury-prevention interventions such as a low bed and floor mat also played an important role in reducing serious injuries on the project unit.

The purpose of patient partnering is to apprise the patient of their fall and injury risk factors, discuss and agree on prevention measures and emphasize the importance of calling for help.



Jocelyn Davis, BSN, RN, staff nurse on oncology unit 6900, helps patient Randy Bollinger stand.

Insights identified during the two years of these fall prevention activities include:

- The prevention of patient falls and fall-related injuries must be identified by leadership and all health care staff as a priority to achieve success. A unit- or service-based champion that is passionate about reducing falls and who serves as a role model for nursing and other health care workers is critical to sustaining improvements.
- A patient's risk for fall is dynamic and subject to change at any time. Fall risk should be treated as a medical diagnosis. Treatment plans require ongoing adjustment based on assessment. The same is true with fall prevention. A patient may not need a bed alarm in the morning, but due to increased confusion at night, the alarm becomes necessary to keep them safe.
- Throughout the hospital stay, a patient often experiences information overload. Consistent communication about the importance of fall and injury prevention with patients by all staff members is critical. Patients often view falling down as a sign of disability or clumsiness, and therefore often don't want to accept the fact that they are at risk and may not cooperate or agree to the interventions needed to mitigate their risk.
- Each patient is unique with different life experiences and beliefs. This requires a holistic approach. While well-validated screening tools performed thoroughly and accurately can help hospital staff identify patient-specific fall risk factors, risk assessment alone does not prevent falls. Nurses need to think beyond the "checklist." Effective interventions must be tailored to each patient's specific risk factors and implemented proactively, including the patient and the patient's family as active partners in care.
- In-depth post fall investigations are important to understand root causes. Information collected immediately after the fall from the patient and health care team helps target interventions. A fall-tracking board was used during this project to visualize factors about each fall and identify trends. For example, when six months of fall information was posted on the board, it confirmed that unsupervised toileting was the primary reason for patient falls. Another unexpected revelation was that more than 80 percent of the falls were with patients that were assessed as "moderate risk to fall." However, their assessment score was on the high end of the moderate range and only a few points from being scored as high risk.



**Joint Commission Center
for Transforming Healthcare**

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 2013, Barnes-Jewish Hospital epidemiology and infection prevention focused its attention in the following areas:

Catheter-associated urinary tract infections (CAUTI)

In 2012, the Centers for Medicare and Medicaid Services (CMS) required that all participating hospitals report catheter-associated urinary tract infections (CAUTI) rates in intensive care units. Effective in 2013, CMS no longer reimburses hospitals for additional cost incurred due to a CAUTI, which means hospitals will have to

absorb the additional costs of treating the infection and the increased length of stay. As a new measure for Barnes-Jewish to monitor, education in this area was extremely important. Early in the year, the infection prevention department launched a campaign to ensure that best practices to prevent CAUTIs were in place. The campaign, known as CHAMPS, stands for:

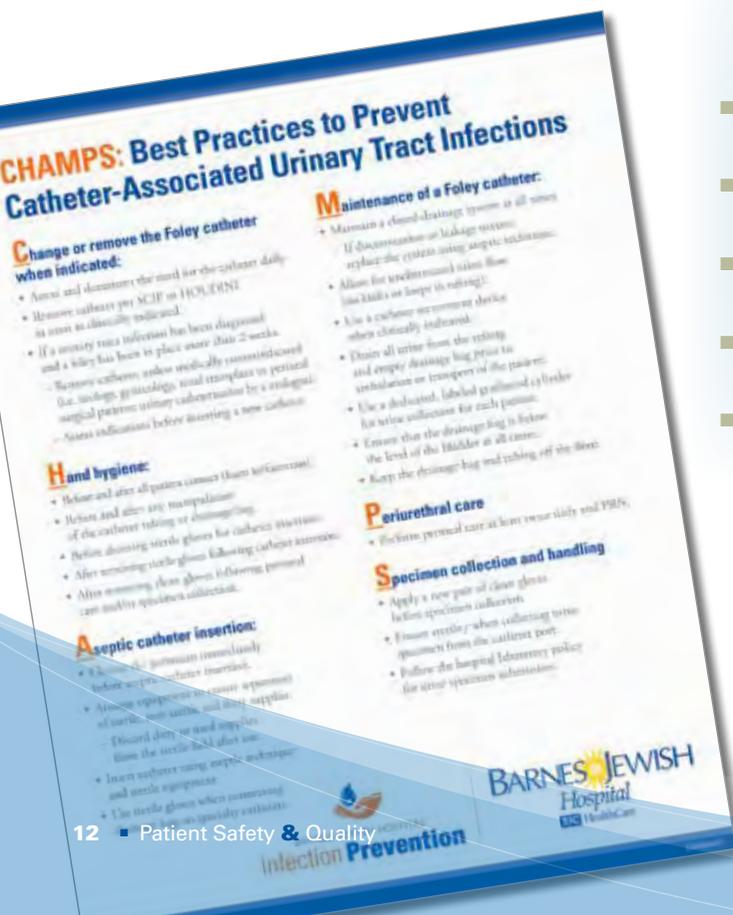
- **C**hange or remove the Foley catheter when indicated
- **H**and hygiene
- **A**septic catheter insertion
- **M**aintenance of a Foley catheter
- **P**eriurethral care
- **S**pecimen collection and handling

Each practice identifies specific behaviors and instructions to adhere to in the quest to eliminate CAUTIs. This best practice model was adopted at BJC HealthCare as a system-wide initiative.

Central line-associated bloodstream infections (CLABSI)

Barnes-Jewish Hospital is committed to being vigilant in decreasing the risk of central line-associated bloodstream infections (CLABSI) in our patients. The infection prevention department maintains basic infection prevention practices and trials newer technologies to accomplish this goal. The pilot of Curo, an alcohol-impregnated cap that eliminates the need to scrub the hub of injection ports prior to use, is complete for the oncology service and the ICU's. While these areas saw seven fewer infections during the year, the department is evaluating the effectiveness of this product in reducing CLABSI.

The pilot of Curo, an alcohol-impregnated cap that eliminates the need to scrub the hub of injection ports prior to use, is complete for the oncology service and the ICU's.



“I’m excited about this position because it allows me to see the big picture of infection prevention and control, but also understand the pressures and factors that go into the decisions.”

— Jennie Mayfield

Representation on a national level



Jennie Mayfield, clinical epidemiologist at Barnes-Jewish Hospital, served as 2013 president-elect of the Association for Professionals in Infection Control & Epidemiology (APIC). Mayfield previously served two terms as treasurer on the APIC board of directors and executive committee since 2009. She will become president in 2014.

Mayfield is part of a group of Barnes-Jewish clinicians who have served APIC in a number

of capacities locally and nationally. Mayfield’s position makes her a spokesperson for APIC nationally and internationally. “I’m excited about this position because it allows me to see the big picture of infection prevention and control, but also understand the pressures and factors that go into the decisions.” She also worked closely with APIC’s chief executive officer as well as a number of non-profit organizations in Washington, DC. “Working with the non-profits opens up a whole different world, giving me a new perspective that will be beneficial to me personally and to Barnes-Jewish.”



APIC

Spreading knowledge.
Preventing infection.®



BARNES-JEWISH HOSPITAL Infection Prevention

National leaders in infection prevention

In March, the Barnes-Jewish infection prevention department adopted a new infection prevention symbol that more accurately reflects Barnes-Jewish as a national leader in medicine. Since the symbol is used extensively inside and outside the hospital, it was important to have a visibility that supports the many hospital-wide initiatives of infection prevention.

Improving Medication Compliance

Filling prescriptions after a hospital stay can be a challenge. In fact, based on exit surveys that the hospital conducts after patients are discharged, less than 50 percent of patients from Barnes-Jewish Hospital were getting their medications filled after discharge. This inspired the deployment of the mobile pharmacy – a prescription bedside delivery program. Mobile pharmacy delivers discharge prescriptions to inpatients at the bedside as the final step of the discharge process.

The goal of mobile pharmacy is to have as many patients as possible go home with their medications. Since it was established in 2012, more than 17,000 patients have used the mobile pharmacy, which is more than 40 percent of the hospital's patients who are discharged to home.

Mobile pharmacy eliminates the numerous barriers patients face when attempting to obtain prescription services following discharge. Patients no longer have to find a pharmacy and wait for their medications to be filled. Prescription edits and insurance issues are taken care of while the patient receives treatment so there is no delay once the patient leaves the hospital. For those patients that cannot afford their medications, case managers are readily available to assist with medication vouchers. By removing these barriers, prescription access has improved, along with patient satisfaction and compliance. The hospital believes mobile pharmacy, along with other initiatives, is also helping decrease readmissions.

The mobile pharmacy has received a great deal of positive feedback from patients. Some examples include:

- “I loved the mobile pharmacy. It was such a perk to go home with my meds in hand.”
- “I just wanted to say thank you to those who fixed my home meds. Barnes-Jewish goes above and beyond their call of duty.”
- “It was Saturday night when I was released. It was really helpful not to have to go out and try to get my medications after finally arriving home.”
- “I’m so glad that I had mobile pharmacy bring me my meds. I would have had to go through a lot to get them. It was so nice to take them home.”
- “I did get my medications and they brought them to me in my room. It was the best thing ever. I was overwhelmed with so much new information and this took one more thing off of my plate. This was actually the most professional, reassuring hospitalization... from the emergency room until I left.”

“It was Saturday night when I was released. It was really helpful not to have to go out and try to get my medications after finally arriving home.”

Pharmacy technician Lisa Gosa, CPhT, delivers medication to a new mom, Amanda Ver Heul, as she prepares to go home with her son, Isaac.



Outpatient Services

An elderly patient with a non-healing wound on his foot drove 127 miles each way for 30 treatments in the new hyperbaric oxygen chamber in the Barnes-Jewish Hospital Surgical and Wound Care Clinic. Before the therapy, the patient had to pack his foot several times a day. The therapy enabled the wound to heal.

In August, the clinic began treating patients with hard-to-heal wounds in two hyperbaric oxygen chambers. The non-invasive therapy is helpful to patients with the following indicators:

- *Diabetic wounds of the lower extremity*
- *Soft tissue radionecrosis*
- *Osteoradionecrosis*
- *Compromised flap/graft beds for improved healing*
- *Chronic refractory osteomyelitis*
- *Arterial insufficiencies and limb salvage consultations*
- *Difficult to heal wounds and infections*
- *Radiation induced tissue injury, for example cystitis after prostate or colon irradiation*

John Kirby, MD, Washington University surgeon at Barnes-Jewish Hospital, leads the clinic's Hyperbaric Oxygen Treatment (HBOT) and wound care programs. Butch Blake, BSN, RN, CNOR, is program manager and Jonathan Edwards is lead technician.

"This is an adjunct treatment to aid in healing," says Dr. Kirby. "Our treatments support the work of our primary and referral physicians so they become partners in the patient's complete healing. We offer a combined limb salvage approach to measure patient's tissue perfusion so they get the input of a multidisciplinary team including nursing, rehab and vascular surgery at the same time of their oxygen measurements."

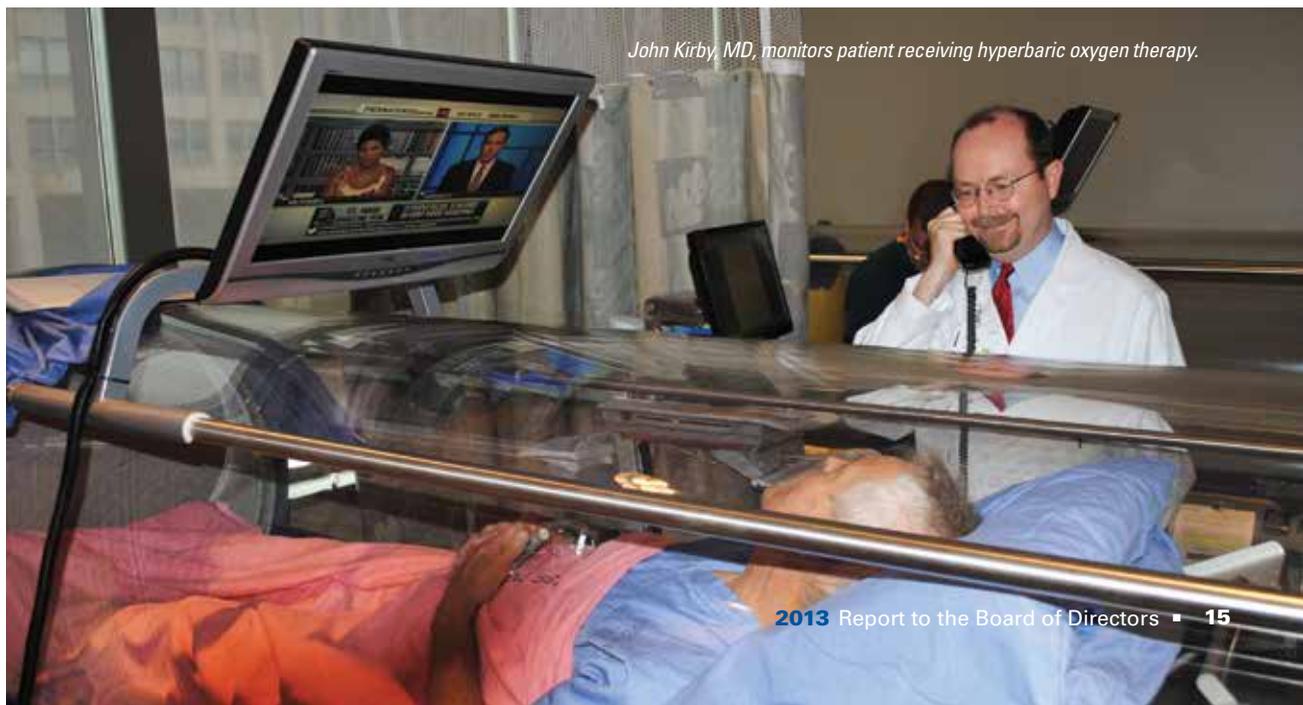
For patients who are apprehensive about being in a confined space, the hyperbaric chambers have transparent covers, enabling a view in and out for the patient as well as the technician who monitors the patient during the hour-and-a-half treatment. "The chambers are as comfortable and stress-free as possible. Patients can sit up, breathe normally, watch TV or talk to loved ones, and even have some juice or water," says Blake.

Patients with diabetes often experience a drop in their glucose level during treatment. The technician will assess glucose levels before and after treatment as well as confirm there is no history of seizures.

Patients must be evaluated for HBOT based on physician referral. Depending on the wound and its condition,

patients can qualify for up to 30 treatments. Currently, the program treats three to six patients a day, but can accommodate eight to ten.

In the next six months, Dr. Kirby and his team will be offering a training program for the basic credentials in hyperbaric treatment. The idea is to build a core group of physicians with an expertise in hyperbaric oxygen therapy to offer a one-stop service on campus. Says Dr. Kirby, "We are fortunate that Barnes-Jewish Hospital and Washington University School of Medicine have assembled stakeholders for an academy model of both patient care excellence and educational training to improve wound and hyperbaric oxygen care across the St. Louis region."



John Kirby, MD, monitors patient receiving hyperbaric oxygen therapy.

Barnes-Jewish Extended Care

Barnes-Jewish Extended Care (BJEC) is centrally located in Clayton to serve the greater St. Louis community. BJEC is a skilled nursing facility offering long-term care and sub-acute/rehabilitative services, and is supported by the resources of Barnes-Jewish Hospital and Washington University physicians. More than 1,000 individuals receive services at BJEC each year.

BJEC averages 91 patients per day. Although admissions are accepted from most area hospitals, a majority come from Barnes-Jewish with a variety of diagnoses, including orthopedic, cardiac, pulmonary, neurological and general medicine. BJEC works cooperatively with other BJC hospitals to reduce sub-acute readmissions to the hospitals. One initiative this year has been to implement national best practice re-admission tracking processes to obtain better understanding of reasons and trends for re-admissions. The staff also implemented a process for early recognition of changes in a resident's condition. Not only does the staff use this process, but visitors are asked to use the process to notify staff of observed changes.

In 2013, BJEC implemented improved patient handoff processes between the facility and local hospitals. As a result, BJEC has reduced readmissions to hospitals by

20 percent. BJEC is establishing itself as a leader, providing a sub-acute model of care, as currently 75 percent of patients meet their rehabilitative goals and return to their homes in the community.

BJEC's National Medicare Ranking improved from three stars to four stars in 2013. The ranking is based on three indicators:

- Staffing – BJEC continues with a five star ranking (the highest ranking)
- Survey Performance – BJEC improved from three stars to four stars
- Quality Indicators – BJEC improved from two stars to four stars. In addressing quality, BJEC has exhibited sustained improvement with its pressure ulcer prevention program, physician order transcription, patient education and medication compliance

BJEC uses an interdisciplinary approach to providing care. The rehabilitation, nursing and dietary departments work together to monitor weekly weight accuracy and documentation, improving compliance to 94 percent. In addition, the dietary department implemented a patient satisfaction initiative to improve dietary tray accuracy and meal temperatures, achieving 98 percent compliance.

BJEC also continued its efforts to update the physical plant. The dated call-light system was replaced with a system that allows staff to receive call-light notifications via pagers. This enabled BJEC to sustain a call-light



Colleen Carroll, Barnes-Jewish Extended Care physical therapist, helps resident Donald Hammonds with his exercise routine.

response time under eight minutes. The fire control panel was also updated in 2013 for improved identification of the emergency area in the building.

The nursing department received new glucometers that download directly to the hospital's laboratory, as well as new vital cart equipment. BJEC continued to pilot the Omni-Now medication dispensing system for new admission medications. The pilot successfully reduced first-dose medication availability from seven to less than five hours.

In the next few years, the focus is to implement technology to improve staff efficiency and documentation compliance. In 2013, Wi-Fi was implemented as a first step toward future electronic medical records. The patients and their families have enjoyed Wi-Fi availability.

This year, team member Theodore Douglas, BJEC driver, received a Robert E. Frank Meritorious Service Award, a prestigious, annual hospital award given to non-clinical employees. The award summary cited Douglas' overall courteous and positive demeanor, as well as his efforts to improve the patient experience when transporting residents from BJEC to physician appointments.

Patient Experience

For the patient experience team, 2013 began with a focus on the voice of the customer. At the hospital's January ICARE Leadership Institute, the team presented a focused rounding model that shares insights from patients and families about the care and service they received. At the center of the Purposeful Leader Rounding model is the patient and family. The point of the rounding is to ask patients and family members focused questions based on service or care initiatives. Their feedback is used to validate or modify performance of team members.



For example, if a unit is working on their response to call lights, the leader might ask:

- *"Have you needed to use your call light?"*
- *"How often?"*
- *"Did you get the help you needed in a timely manner?"*

After rounding on several patients and families, the leader can identify trends and follow up with team members. Often, our patients and families have additional comments, which leaders then share with team members.

Former patients Charles Watkins and Lee Zobrist share their stories at the ICARE Leadership Institute in August 2013.



This year, several former patients were invited to the Leadership Institute. Each patient took the stage to tell their story, which contained positive moments during their hospital stay as well as areas for improvement. The group learned that everyone that a patient and family come in contact with, and everything that happens to them during their hospital stay has an impact. In a survey following the meeting, Barnes-Jewish leaders indicated that this was their favorite section of the leadership day and that they wanted to hear more.

Based on the success of the patient panel in January, more patients were invited to the August ICARE Leadership Institute. This time, they were asked to share specifically how words and actions had an impact on their perception of care. Each patient described how, on occasion, the words and actions of team members did not convey compassion and caring. And, equally as significant, they described how the smallest gesture or kind word made all the difference in the world.

Following the patient presentations, the patient experience team conducted a training session that identified appropriate word and actions reflecting the hospital's ICARE model. Three tools were introduced to enhance communication with patients, families and colleagues: AIDET, Managing Up and ICARE Words and Actions. Each leader was asked to roll out these communication tools to their teams so that a consistent message is delivered across the entire hospital.

Additional ICARE Leadership Institutes are scheduled for 2014.

Being a national leader in medicine means taking exceptional care of our patients. The high-level of care that Barnes-Jewish strives to provide every patient includes the best clinical care and the most satisfying patient experience.

President Rich Leickwig addresses more than 500 leaders at the August ICARE Leadership Institute, in a Dr. Seuss themed event.

Some of the patients who participated in the patient panel at the ICARE Leadership Institutes included:

Charles Watkins, St. Louis, Missouri

Charles Watkins says he's thankful for the treatment he received for prostate and bladder cancer at the Alvin J. Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine. He's also grateful to receive follow-up care at the cancer center's newest satellite location in South County. Charles had two years of treatment—including chemotherapy, radiation and hormone therapy for his cancer.

Lee Zobrist, Sunset Hills, Missouri

Lee Zobrist was enjoying a weekend at the Lake of the Ozarks in 2012 when he was in a boating accident. He was airlifted to Barnes-Jewish Hospital to find out he had a fracture of the T12 vertebrae, and had spinal fusion surgery three days later. After one week in the hospital, he spent another week recovering at the Rehabilitation Institute of St. Louis.

Employee Engagement

*Changes in the health care environment this year were difficult for hospitals nationwide, making it even more important for BJC HealthCare and Barnes-Jewish Hospital to conduct the **annual employee engagement survey**. As a service organization, Barnes-Jewish leadership understands that its role as a national leader in medicine is based on the skills, professionalism and attitude of its employees.*

The survey was implemented in 2007 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, department leaders share survey results with employees. As a group, an action plan is developed focusing on improvement. In 2012, leadership within the radiology department realized it had issues that initially affected employees but then spilled over to impact patients. MRI team members indicated that:

- There were not enough educational opportunities within the department.
- They needed more tools to do their jobs efficiently.
- Workflow was not standardized and patients were dissatisfied because procedures were behind schedule.
- MRI safety was identified by staff as a serious concern.

Director Chuck Davis and manager Joe Lombardo worked with Siemens and Medical Imaging Consultants to create an advanced MRI training program. Says Davis, “Our MRI technologists perform many advanced procedures which are not routinely performed at community hospitals, so it is important that our staff have advanced training. It was also requested in the engagement survey.” Gap analysis determined what staff knew and what they needed to improve upon. The program was developed based on the ‘gap’ with implementation and training beginning in summer 2013.

With ongoing training in place, management and staff examined workflow to eliminate what were referred to by Justin Self, performance engineer, as “fail points.” Through the efforts of MRI Supervisor Nancy Genetti and other team members, a number of opportunities for improvement were identified.

- Sequences had been added to protocols but the increased time had not been added to schedules—one of the primary causes of delays. Exam schedules were modified to accommodate the protocols.
- Patients were not arriving on time for the pre-exam portion of the procedure because appointments were being assigned differently. For example, a 9 a.m. appointment would need an 8:30 a.m. arrival time, but the patient would hear both and become confused. Patients are now given only one time.
- Scanner software was upgraded to be consistent in all areas allowing for better distribution of patients.

In early summer, new MRI safety measures were also put in place. The modalities became “restricted access areas” consisting of four zones. These zones are protected by new construction and the installation of new lockable doors, which prevent entry into MRI zones three and four by unauthorized personnel.

Access is only given to staff who have completed MRI safety screenings and require temporary access to a zone for patient care or service purposes. Key customers including security, patient transport and facilities underwent an MRI safety education process.

The MRI team is also working to create standard workflows throughout the modality. “We’ll be able to begin work in other modalities in 2014 based on what we learned in MRI this year,” says Davis.

MRI process improvements include:

- *Education*
- *Work-flow enhancements*
- *Safety enhancements*
- *Equipment improvements*
- *Scheduling*
- *Standardization*

As a group, the entire MRI team addressed a number of challenges that emerged from the employee engagement survey. Representatives of the team include (from left): Jennifer Gressler, RT (R), clinical instructor; Nancy Genetti, RT (R), supervisor; Joe Lombardo, RT, (R), manager; Robin Gray, RT (R), medical imaging technologist; and Justin Self, performance engineer.



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.

Alice Imhof, RN, resource nurse, was the recipient of the Courageous Catch Award.



The integrity of our blood and specimen samples is a vital component to safe and effective care. When Imhof spotted an unattended cart filled with tubes of blood, pathology specimens and cultures, she immediately took possession of the cart and contacted the lab.

As it turns out, the cart was left unattended by one of the hospital's contracted couriers. Imhof's actions not only ensured the integrity of this batch of samples, but resulted in better compliance with defined processes for our contracted couriers.

- **Courageous Catch 2013 - Alice Imhof, RN**
- **Critical Catch 2013 - Derrick Hayes**
- **Best Catch 2013 - Christal Adams, MSN, RN; Nancy Davis, MSN, RN; Kayla Moll, BSN, RN; Makiba Smith, BSN, RN**

The winner of the Critical Catch Award was Derrick Hayes, patient transporter.



Hayes was transporting a patient from the emergency room to ultrasound when the patient began complaining of chest pains. He immediately returned the patient to the emergency room and alerted a nurse. The patient's EKG had changed dramatically, so instead of having

an ultrasound, he was diverted directly to the cardiac catheter lab.

Team members from medicine unit 12100 joined together to save a patient and received the Overall Best Catch Award as a result. Recipients from left: Nancy Davis, MSN, RN, nurse manager; Kayla Moll, BSN, RN, lead charge nurse; Christal Adams, MSN, RN, practice specialist; and Makiba Smith, BSN, RN.



Christal Adams, MSN, RN; Nancy Davis, MSN, RN; Kayla Moll, BSN, RN; and Makiba Smith, BSN, RN, are recipients of the Overall Best Catch Award.

This award recognizes this team's response in a tragic, but luckily not fatal, incident that occurred in June on medicine unit 12100. On that day, nurse Kayla Moll heard a loud crash come from a patient room. When she entered, she discovered that the patient had broken out the window in his room and was attempting to jump. Moll immediately yelled for assistance and that's when Christal Adams, Nancy Davis, Makiba Smith and Dennis Jones rushed to assist her. Despite suffering superficial cuts and scratches from the broken glass, this group was able to subdue the patient and prevent him from doing further harm to himself.



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

Patient Safety Indicator Team

Patient safety indicators (PSIs) are a set of measures derived from hospital inpatient discharge data to provide a perspective on patient safety and quality. Specifically, PSIs identify preventable adverse events that patients experience as a result of exposure to a health care system. In the fall of 2011, a two-star PSI rating out of a possible five stars from University HealthSystem Consortium (UHC) was a significant call to action. Patient safety and quality, health information management, finance, patient financial services and members of the medical staff formed the PSI team that developed processes to assess, review, clarify and validate the identified PSIs. The team also developed coding and physician documentation guidelines for consistent and compliant documentation. As a result, PSIs have decreased from 670 in 2011 to 561 in 2012, and less than 505 in 2013. Most recently, Barnes-Jewish Hospital's PSI ranking on the UHC scorecard went from 57 in 2012 to an improved ranking of 18 in 2013.

Charge Accuracy Team (CATS)

Respiratory care services had a plan to reduce duplicate charges by 50 percent, and to do it within nine months. Using several process-improvement methodologies, the team mined its data to determine the impact of each

instance and to identify patterns. The team tested several solutions, checked the feasibility, and then developed new standard work that was implemented in March 2013. The goal was achieved by June and results have been sustained since that time.

Repackaging Cell Improvement Project

By creating a designated area, the pharmacy is now able to meet demand for the repackaging process and to do it more efficiently and safely. By standardizing work, reducing waste and outsourcing when appropriate, the pharmacy is now able to meet daily demand for unit-dose packaged medications. The pharmacy team also has integrated bar coding into the process. Using Lean concepts and techniques, the pharmacy initially realized an annual savings of \$155,000 for drugs and materials, which has increased to \$280,000 in savings.

Hip & Knee Replacement Center of Excellence: Transforming Patient Education Curriculum

This project started with a challenge from the Joint Commission Centers of Excellence review board. The challenge was to have 90 percent of all elective knee and hip replacement patients attend preoperative education. The team started the project with a rapid-improvement event and completed it utilizing the plan, do, study and act approach. The team achieved its stretch target of 90 percent attendance. The key success for this project was building a curriculum that team members were proud to teach. The next step is to develop multimedia training and to expand it to all orthopedic patients.

Clinical Quality

Hypoglycemia Prevention & Insulin Therapy Optimization Team

Barnes-Jewish Hospital's Hypoglycemia Prevention and Insulin Therapy Optimization (HYPO) team was formed to ensure that every patient receiving diabetes therapy has an optimal medication regimen and experiences no patient harm. The HYPO team, with the support of the hospital's diabetes subcommittee, and physician, pharmacy and nursing leadership, has reduced medication harm related to insulin and oral agents from 5.01 percent in 2008 to 2.71 percent in 2012 – a 54 percent reduction.

KBMA Compliance Boosters Team

Prior to project implementation, respiratory care services struggled to meet the hospital's goals to ensure the right medication is provided to the right patient every time. Knowledge-based Medication Administration is a process in which health care workers utilize bar-code scanning technology before giving medication or a medicated treatment to ensure the medicine, the dosage, the patient and the time are correct. The service began to track individual staff members' compliance weekly on MDI (managing daily improvement) boards. Supervisors adopted the "3Cs" process of accountability – counsel, coach and confirm – to aid individuals who were struggling with compliance. Compliance improved to almost 95 percent by December 2012. Performance has been sustained through 2013 and has increased

to 97 percent compliance. Therapists now have better discipline and awareness of the importance of delivering the right medication to the right patient and leaders are able to take prompt action based on data that tracks performance.

Surgical Count Process: Prevention of Retained Surgical Items

The Surgical Count Process team had one goal in mind when it began its journey – to reduce the likelihood of a patient returning to the operating room as a direct result of the care it had provided. The first step was creating a well-defined count process that was followed each and every time a count was performed. The team developed standard work for counting every needle, including the timing of the counts and having the scrub person and circulator count simultaneously, and out loud, as each sponge is separated. As of July 2013, perioperative services had achieved a perfect track record for 755 days. This achievement is the direct result of daily staff engagement, teaching, education and leadership support.

Positive Patient Identification for Specimen Collection

Despite sound processes and the best intentions by our clinicians, an unacceptable volume of mislabeled specimens were arriving at the hospital's labs each month. To combat this problem, Barnes-Jewish launched the Positive Patient Identification (PPID) system in April. Through the use of barcode technology, PPID helps to identify that the right specimens are collected on the right patient at the right time, and also identifies who obtained the sample. Since the launch, the volume of mislabeled type and screen specimens has decreased by more than 90 percent.

Kristen Ferguson, BSN, RN, staff nurse on orthopedic surgery unit 7300/7400, uses the positive patient identification, a standard process for specimen collection at Barnes-Jewish Hospital.

SCIP-Inf-9: Urinary Catheter Removal Compliance

The road to success for SCIP-Inf-9 performance improvement began with a leadership request for a University HealthSystem Consortium Value Stream Analysis in the fall of 2011. Barnes-Jewish Hospital leadership implemented a Goal Deployment Process to translate strategy into sustainable performance through weekly meetings with key stakeholders and process owners. As a result, the hospital's SCIP-Inf-9 compliance has been equal to or greater than the hospital's strategic patient safety and quality objective goal of 98 percent (January – 97.6 percent converts to 98 percent for CMS) for six consecutive months. The Barnes-Jewish Hospital June 2013 YTD Scorecard (December 2012 – June 2013) reflects 100 percent compliance. For 2013, the only missed opportunity to provide the appropriate care occurred in January, the week prior to the alert process implementation.

Service Excellence

Overall Quality of Care with MDI

The high risk cardiology program within the Heart and Vascular Center wanted to improve its overall quality of care rating on patient satisfaction surveys. Utilizing managing for daily improvement (MDI) techniques, this unit began by collecting baseline data and implemented purposeful hourly rounding to hear firsthand if patients felt they were receiving excellent care. As a result, overall quality of care scores improved from the 44th percentile



TEAM AWARD FOR QUALITY IMPROVEMENT

in the third quarter of 2012 to the 96th percentile in the second quarter of 2013. That means that this unit was previously in the middle of the pack nationally in overall quality of care and responsiveness, and now ranks in the top five percent of nursing units for this metric of patient satisfaction.



Campus Renewal

Numerous studies show that design elements such as the environment and room layout can improve the patient experience, safety and outcomes. Health care planners and designers for the Campus Renewal Project are confident that design and process improvement are a winning combination and are using data to guide the design of the new north campus inpatient bed tower at Barnes-Jewish Hospital.

Nancy Coleman, BJC director of planning and design, and Jon Bettale, BSN, MBA, project manager for the new adult inpatient divisions, have been collaborating with medical designers since the early planning stages of the project.

The team has helped clinicians, leadership and support staff understand how design and room features – everything from the placement and angle of the bed and the view of the patient from the hall, to light, noise, air quality and even the location of the toilet – contribute to improving patient safety, including infections, medication errors and falls.

“BJC’s standard patient room design has been intentional since we introduced a plan for outcomes-based building

standards at Progress West Hospital in 2007,” says Coleman. “BJC has more than 200 same-hand standard rooms throughout the system now.

“We have continued to evolve and improve that standard of excellence by examining national data and our own outcomes. When we look at the post-occupancy evaluations, we can modify the design, if necessary, to continually enhance the patient environment.”

BJC-specific quantitative data on patient safety and infection control provide a baseline for slips, falls and infection rates. Patient experience data are gleaned from Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS).

For example, safety is a particular challenge with cancer patients. Fall-prevention studies in hospital settings have reported high rates of falls and injuries for cancer patients, primarily associated with anemia, fatigue and weakness stemming from treatment. Fall prevention continues to be a priority throughout BJC and, in 2011, Barnes-Jewish began participating in a Joint Commission Center for Transforming Healthcare project that aims to prevent falls in health care facilities.

Recognizing the challenges with cancer patients, the team focused its work on this population, starting with the cancer unit with the highest number of falls. Cathie Limbaugh, oncology services clinical nurse specialist, Eileen Costantinou, Center for Practice Excellence specialist and Laurie Wolf, performance improvement engineer, are members of the team. Through systematic and data-driven problem-solving methodology, the team explored the root causes of the problem.

Limbaugh says room design elements such as the proximity of the bathroom to the bed, use of patient lifts, placement of handrails, the entrance to the shower and location of outlets, coupled with individual patient fall risk assessment and education, will help reduce falls.

The team also developed and implemented an education campaign for caregivers, patients and their families, resulting in a positive impact on the fall rate.

Campus Renewal Project team members (left to right) David Endsley, HOK medical planner; Jon Bettale, BSN, MBA, BJC project manager; Nancy Coleman, BJC director of planning and design; and David Buckley, HOK senior designer, are working with staff and clinicians to identify building design elements and solutions that improve the patient experience, outcomes and satisfaction scores.



“We have continued to evolve and improve that standard of excellence by examining national data and our own outcomes. When we look at the post-occupancy evaluations, we can modify the design, if necessary, to continually enhance the patient environment,”

~ Nancy Coleman.

Road and sidewalk closures mark the beginning of demolition and new construction. The Kingshighway, Steinberg and Yalem buildings in the foreground will be demolished as well as the former Jewish College of Nursing south of Parkview Avenue.

“The solution implemented was patient partnering,” says Costantinou. “Fall risk is individual to each patient. Upon admission, we conduct an initial fall risk assessment. Based on that assessment and injury risk factors, we individualize the education with the patient and family and tailor fall interventions.”

Another major component of the Campus Renewal Project is a consolidated Women and Infant’s program, which includes integrating culture, process and practice into a new labor and delivery floor, women’s assessment center and expanded neonatal intensive care unit (NICU) at St. Louis Children’s Hospital.

Working closely with the project managers and architects, the group’s 2P work resulted in clear and explicit direction to the design team on supporting and enhancing the workflow, operations and processes.

“We spent time determining how units should be laid out in terms of nursing, physicians and charting that will be conducive to more interaction between teams and more collaborative care between nurses, physicians and support staff,” says Dr. Strand.

Several process improvements won’t wait for a new building and will be implemented immediately and refined before the team moves into the new facility.

“We are creating a new unit not to practice the way we do today, but to practice the way we want to in the future. Ultimately, we will have a unit that will facilitate access, communication and collaboration, and patients will have an experience second to none,” says Dr. Strand.

“There are physical challenges we face today, including semi-private rooms and the distance to NICU,” says Eric Strand, MD, Washington University obstetrics and gynecology specialist at Barnes-Jewish Hospital. Key faculty and staff, encompassing clinical and support staff, were invited to take part in an exercise called 2P, which adapts Lean and Six Sigma strategies to improve operational processes and determine the function and flow of the future Women and Infants and NICU spaces.

Jeremy Bespalko with Prism Medical tests a proposed patient lift, which will help to reduce patient slips and fall as well as employee injuries, for Elaine Moore, BSN, RN, Barnes-Jewish occupational health nurse, and Lynn Canada, workers’ compensation coordinator. The device shown can lift up to 700 pounds.



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
 - Nursing Care Center
 - Behavioral Health Care
- The Joint Commission Advanced Certification
 - Lung Volume Reduction Surgery
 - Comprehensive 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 and 2013
- The American Heart Association/American Stroke Association “Get with the Guidelines – Gold Plus Achievement Award”
- The American Heart Association/American Stroke Association 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
- 21 consecutive years on the *U.S. News & World Report* Honor Roll of America’s Best Hospitals
- A Consumer Choice Award winner for 18 consecutive years from The National Research Corporation
- Department of Health and Human Services Silver Medal of Honor for Organ Donation



a magnet for *nursing*

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

- American College of Surgeons National Surgical Quality Improvement Program
- The Crystal Award from Professional Research Consultants for inpatient neurosciences unit 11500 for achieving one of the nation’s highest overall quality-of-care patient satisfaction scores in the inpatient neuroscience category

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 *2013*

Barnes-Jewish Hospital has been listed among the top hospitals in the nation for 21 consecutive years on the *U.S. News & World Report* Honor Roll of America’s Best Hospitals.

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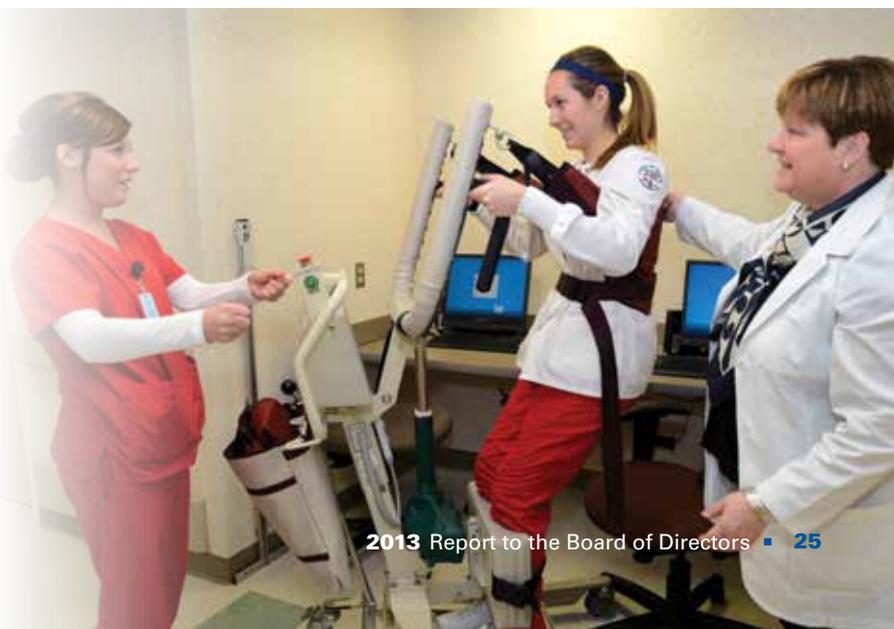
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Samuel B. Guze Professor of Psychiatry
Department of Psychiatry
Washington University School of Medicine

Barnes-Jewish Hospital Facts and Figures 2013

Employees	9,215	Staffed Beds	1,167
Attending Physicians	1,762	Inpatient Admissions	54,738
Residents / Fellows	809	Inpatient Surgeries	19,173
Licensed Beds	1,315	Outpatient Surgeries	21,926
		Emergency Department Visits	84,920
		Registered Nurses	3,039

Kathy Rensing, MSN, RN, ANP-BC, advance practice nurse, oncology services (far right), trains Southern Illinois University Edwardsville nursing students Alyssa Beerup, (in left) and Amanda Boyer, how to use the patient lift.



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