



Leading the Quest for Quality

2010 PROFILES IN QUALITY
AND PATIENT SAFETY

HANYS Quality Institute

INTRODUCTION

The Healthcare Association of New York State (HANYS) and its members are committed to innovative practices and continuous improvement in quality, safety, and efficacy of care. HANYS' Pinnacle Award for Quality and Patient Safety is one forum to recognize organizations playing a leading role in promoting these works.

Leading the Quest for Quality: 2010 Profiles in Quality Improvement and Patient Safety is a compendium of submissions for HANYS' Pinnacle Award for Quality and Patient Safety that met publication standards. Each profile includes a program description, outcomes, and lessons learned that provide insight into what it takes to make positive change occur.

There were winners in four categories: multi-entity, large hospital, small hospital, and specialty or division-based. In addition, HANYS recognized submissions in the top 10th percentile based on the scoring guidelines.

HANYS congratulates and thanks all of our members for their willingness to share their ideas, experiences, and successes. We encourage all members to take advantage of the information in this publication as a strategy to inform and accelerate efforts to improve quality and patient safety.

For more information about the Pinnacle Award for Quality and Patient Safety, please contact Nancy Landor, Senior Director of Strategic Quality Initiatives, at (518) 431-7685 or at nlandor@hanys.org.

CHAPTERS

The 2010 profiles are categorized into four themes:

- **Clinical Care—**
Improving Patient Care
- **Operations—**
Improving Systems and Processes
- **Patient Safety—**
Falls, Infection Management, Medication Management, and Pressure Ulcers
- **Specialty—**
Behavioral Health, Emergency Services, Home Care, Long-Term Care, Maternal-Child, Outpatient, and Primary Care

SELECTION COMMITTEE MEMBERS

NANCEE L. BENDER, PH.D., R.N., a Consultant with Joint Commission Resources, has a diverse background in nursing, health care administration, education, research, and performance improvement, and served as the Executive Director for Ambulatory Accreditation for The Joint Commission. She currently teaches the use of "tracer" methods as a performance improvement intervention. Dr. Bender served as a professor in an academic faculty appointment at the University of Rochester, School of Nursing. While pursuing research interests in the coordination of care and performance improvement for quality, cost, and patient safety outcomes, she taught leadership, patient safety, population health, ethics and public policy, and evidence-based quality improvement practices. She served as the Principle Investigator for a Robert Wood Johnson Foundation-funded program that paired nursing graduate students and medical students on performance improvement planning and implementation teams. She served on solution teams for the World Health Organization and The Joint Commission focusing on prevention of pressure ulcers and patient falls prevention. Dr. Bender received her Bachelor's and Master's of Nursing degrees from the University of Michigan, Ann Arbor, and her Doctor of Philosophy degree from the University of Rochester.

DR. MAULIK S. JOSHI, DR.P.H. is President of the Health Research and Educational Trust (HRET) and Senior Vice President for Research at the American Hospital Association (AHA). HRET conducts applied research in improving quality and patient safety, reducing costs, eliminating health disparities, improving leadership and governance, payment reform, and care coordination. Dr. Joshi also leads Hospitals in Pursuit of Excellence™, AHA's strategy to accelerate performance improvement and support health reform implementation. Before joining HRET, Dr. Joshi served as President and Chief Executive Officer of the Network for Regional Healthcare Improvement and was previously a senior advisor for the office of the director at the Agency for Healthcare Research and Quality. Dr. Joshi served as President and Chief Executive Officer of the Delmarva Foundation. Before that, he served as Vice President at the Institute for Healthcare Improvement, and Senior Director of Quality for the University of Pennsylvania Health System. Dr. Joshi is Editor-in-Chief of the *Journal for Healthcare Quality*. He also co-edited *The Healthcare Quality Book: Vision, Strategy and Tools*, and authored *Healthcare Transformation: A Guide for the Hospital Board Member*. Dr. Joshi has a Doctorate in Public Health and a Master's degree in health services administration from the University of Michigan and a Bachelor of Science degree in Mathematics from Lafayette College.

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LYNN LEIGHTON, R.N., M.H.A. is Vice President, Health Services for the Hospital & Healthsystem Association of Pennsylvania, a statewide trade association that represents

Pennsylvania hospitals and health systems with policymakers and other trade and professional associations. In this position, Ms. Leighton works with Pennsylvania's hospitals and other stakeholders to support the development of health care policy with respect to health care quality, patient safety, delivery system accountability, professional supply, professional practice, public health, and workforce development. She has a Bachelor's degree in Nursing from Pennsylvania State University and a Master's degree in Health Services Administration from the University of Pittsburgh.

ARTHUR A. LEVIN, M.P.H. is co-founder and Director of the Center for Medical Consumers, a New York City-based non-profit organization committed to informed consumer and patient health care decision-making, patient safety, evidence-based, high-quality medicine, and health system transparency. Mr. Levin was a member of the Institute of Medicine's (IOM) Committee on the Quality of Health Care that published the *To Err is Human* and *Crossing the Quality Chasm* reports. He served on the IOM committee that made recommendations to Congress in IOM's *Leadership Through Example* report, and was a member of the committee that issued *Opportunities for Coordination and Clarity to Advance the National Health Information Agenda* and *Knowing What Works in Health Care: A Roadmap for the Nation*. Mr. Levin is co-chair of the National Committee for Quality Assurance Committee on Performance Measures that is charged with developing performance measures applicable to health plans. At the state level, he has served on numerous state health department task forces and workgroups focused on safety, quality, informed consent, and bioethics concerns. Recently, he served on a state policy workgroup for office-based surgery. He also serves on the board of Taconic Health Information Network and Community, a not-for-profit health information organization in the mid-Hudson Valley, and is a founding board member of the New York State E-Health Collaborative. Mr. Levin earned his Master of Public Health degree from Columbia University's School of Public Health and a Bachelor of Arts degree in Philosophy from Reed College.

DR. VAHE KAZANDJIAN is the President of The Center for Performance Sciences, a Maryland-based outcomes research center that develops quality measurement and evaluation strategies in the Americas, Europe, and Asia. He is the original architect of, and remains responsible for, the Maryland Quality Indicator Project (QIP), the largest indicator project of its kind in the world. He is Adjunct Professor of the Health Policy and Management Department of the Johns Hopkins Bloomberg School of Public Health. In addition, Dr. Kazandjian is the author of four textbooks on indicator development and quality of care. He is an epidemiologist by training and served as Advisor to the World Bank for Latin America, USAID for Africa, and is currently Advisor to the World Health Organization's European office in Barcelona. In 2002, Dr. Kazandjian was named President of LogicQual Research Institute, Inc., a not-for-profit organization dedicated to conducting research on clinical practice and accountability. From 2005 to 2010, Dr. Kazandjian served as the Principal Investigator for a quality-based reimbursement initiative by Maryland's Health Services Cost Review Commission. He has published extensively in clinical and health services peer review journals and books on the development of clinical protocols, indicators of quality, small area variation analysis, and longitudinal epidemiological studies. He is also a published poet and novelist. He received his undergraduate and graduate degrees from the American University of Beirut, Lebanon, and his Doctorate from The University of Michigan, Ann Arbor, Department of Medical Care Organization and Policy, School of Public Health.

PINNACLE AWARD FOR QUALITY AND PATIENT SAFETY

◆ 2010 AWARDEES ◆

MULTI-ENTITY CATEGORY

**Improving Patient Safety in Obstetrics
Using Crew Resources Management**
Catholic Health Services of Long Island



Joseph Conte, Executive Vice President of Corporate Services (left) accepts the Pinnacle Award on behalf of Catholic Health Services of Long Island. Presenting the award is HANYS' Board Chairman Joseph Quagliata.
[Go to page 82 for a profile of this program.](#)

LARGE HOSPITAL CATEGORY

**Prevent Catheter-Associated Urinary
Tract Infections**
Beth Israel Medical Center



HANYS' Board Chairman Joseph Quagliata (far right) presents the Pinnacle Award to Beth Israel Medical Center. Accepting the award are (right to left) David Bernard, M.D., Chief Medical Officer and Executive Vice President; Brian Koll, M.D., Medical Director and Chief, Infection Control and Hospital Epidemiology; and nurses Marie Moss-Crispino and Alexis Raimondi.
[Go to page 47 for a profile of this program.](#)

SMALL HOSPITAL CATEGORY

**Simple Steps Drive Success: How
Quality Principles Guide Change**
Clifton Springs Hospital and Clinic



HANYS' Board Chairman Joseph Quagliata presents the Pinnacle Award to Maura Snyder, Wound Center Director, who accepts it on behalf of Clifton Springs Hospital and Clinic.
[Go to page 2 for a profile of this program.](#)

SPECIALTY DIVISION CATEGORY

**Medication Administration
Compliance Initiative**
Mountainside Residential Care Center



Philip Mehl, Administrator, and Christine Jones, Director of Nursing, accept the Pinnacle Award on behalf of Mountainside Residential Care Center. Presenting the award is HANYS' Board Chairman Joseph Quagliata.
[Go to page 92 for a profile of this program.](#)

◆ SPECIAL RECOGNITION ◆
SUBMISSIONS THAT SCORED IN THE TOP TENTH PERCENTILE

Home Care Demonstration Project to Reduce Hospital Readmissions

Brookhaven Memorial Hospital Medical Center Home Health Agency

Patient-Centered Medical Home for Diabetes Management

The Brooklyn Hospital Center

Reversing the Ravages of Chronic Wounds: A Community-Based Approach

Claxton-Hepburn Medical Center

Emergency Department Efficiency Improvement Project

Ellis Medicine

The Journey to Zero Nosocomial Infections

Glen Cove Hospital

Rapid Medical Evaluation: Improving the Emergency Department Patient Experience

Highland Hospital

Improving Patient Flow at a Non-Academic Hospital

Mercy Medical Center

The Community Health and Acute Medical Performance Improvement Organizational Network

Montefiore Medical Center

Enhancing Performance, Changing Culture, Improving Communication, and Supporting Rapid Cycle Change Across a Multi-Hospital Health Care System

North Shore-Long Island Jewish Health System

Partnering for Quality: Fostering Multidisciplinary, Organization-Wide Quality Improvement

NYU Langone Medical Center

Hardwiring Patient Safety: Eliminating Health Care-Acquired Infections

Rochester General Health System

Using an Analgesia/Sedation Protocol to Reduce Mechanical Ventilation Days and Mortality in a Surgical Intensive Care Unit

Rochester General Health System

Reducing Catheter-Associated Urinary Tract Infections

Stern Family Center for Extended Care and Rehabilitation/North Shore University Hospital

Increasing Awareness of the Need for High-Quality Palliative and End-of-Life Care

St. Mary's Hospital

Standardization to Prevent Venous Thromboembolism

Stony Brook University Medical Center

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Stern Family Center for Extended Care and Rehabilitation/North Shore-Long Island Jewish Health System

CLINICAL CARE—GENERAL

Therapeutic Cooling Initiative *Albany Medical Center*

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PROJECT DESCRIPTION

After careful study of protocols used at ten institutions and intensive training of staff, Albany Medical Center introduced a multi-disciplinary team-based therapeutic cooling program to save lives of cardiac arrest, stroke, and brain-injured patients. Studies indicate that many of these critically ill and injured patients could benefit from this technique, which reduces the amount of neurological damage that results from these traumatic conditions. The divisions of cardiology/interventional cardiology, neurology, emergency medicine, and radiology worked together to achieve dramatic results in 2009, the first full year of implementation of the initiative.

OUTCOMES

- Fifty-five percent of patients treated with therapeutic cooling left the hospital alive without any major complications, compared to 20% who were not treated with therapeutic cooling.
- Previously published studies indicated that 80% of patients who were comatose after experiencing cardiac arrest outside of a hospital and experience a return of spontaneous circulation either died or survived with significant harmful complications. By contrast, this

LESSONS LEARNED

- Technology developments must be routinely monitored and scrutinized.
- Staff will embrace new technology once they understand its merits.
- Adherence to protocols is essential to new technology implementation.

figure dropped to 45% for patients in the same cohort who received therapeutic cooling.



Road to Recovery/Discharge Passport Program—Heart Failure *Arnot Ogden Medical Center*

CONTACT: Kathleen Hale, B.S.N., M.S., M.A.E.D., R.N.,
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PROJECT DESCRIPTION

Arnot Ogden Medical Center believes that patient/family-centered care is a cornerstone of holistic care. Arnot Ogden's heart failure patients and their families are engaged in the patients' care plan from the time of admission. The primary nurse, in collaboration with the case manager, reviews the care plan and anticipated discharge date with the patient and his or her family. A

"Road to Recovery" documents the patient's admission status, including activities of daily living, vital signs, dietary needs, pain management, education, and discharge needs. This map outlines where the patient should be at the mid-point of his or her stay and what the patient must achieve by the anticipated discharge date.

Daily patient/family-centered interdisciplinary rounds are key to the success of the "Road to

LESSONS LEARNED

- Senior leadership must establish expectations for maintaining improved outcomes.
- Interdisciplinary collaboration across the continuum of care facilitates seamless transitions.
- It is important to have disease management programs in place that function as a bridge until the next available appointment with the patient's primary care physician.

Recovery” program. At discharge, the patient receives a “Discharge Passport” binder that includes medication reconciliation information, discharge instructions, educational material, and scheduled follow-up appointments.

OUTCOMES

- Arnot Ogden achieved a 3% decrease in its readmission rate for heart failure and a 12% decrease in length of stay for these patients.
- In the pilot unit, patient satisfaction scores increased, as evidenced by responses to these key questions:
 - Included in decisions regarding treatment: 81% in 2008; 83.3% in 2009; 88.5% in 2010 year to date.
 - Staff worked together to care for you: 89% in 2008; 91% in 2009; 93.8% year-to-date in 2010.



Simple Steps Drive Success: How Quality Principles Guide Change *Clifton Springs Hospital and Clinic*

CONTACT: Maura Snyder, M.H.A., Program Director, Center for Wound Care and Hyperbaric Medicine; (315) 462-0611; maura.snyder@cshosp.com

PROJECT DESCRIPTION

A reported 23 million diabetics live in the United States. Each year, five million will develop wound complications and 60,000 will undergo amputation. The cost of treating these wounds is more than \$1 billion. When Clifton Springs Hospital and Clinic’s healing rate decreased from 84% to a low of 68% in 2008, an analysis revealed fragmented clinical practices. In 2007, the Center for Wound Care and Hyperbaric Medicine at Clifton Springs centralized services to provide comprehensive care to diabetics and others with chronic wounds. Actions, including setting goals, adopting practice guidelines, standardizing inventory,

building interdisciplinary teams, and improved communication with primary care providers resulted in an overall heal rate of 94% in 2009.

OUTCOMES

- The wound healing rate increased from 68% to 98%.
- Days to heal decreased from an average of 42 to just 28 days.
- Patient satisfaction increased to 97% in 2009.
- Wound care service revenue increased 250%.
- Below-the-knee amputations were limited to 1% of the diabetic population.

LESSONS LEARNED

- More predictable patient outcomes occur with adherence to clinical practice guidelines.
- Collaborating with patients, staff, physicians, and leadership in creating goals drives success.
- Change is simplified when using established, proven quality improvement tools.



Quality: The Core of a Successful Total Joint Replacement Program *Community Memorial Hospital*

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PROJECT DESCRIPTION

Community Memorial Hospital believes that achieving positive patient outcomes requires a multidisciplinary, organization-wide approach for adhering to established guidelines for safety and quality care. The orthopedic team wanted to improve its program by addressing venous thromboembolism (VTE) prevention and establishing guidelines for the use of urinary catheters and antibiotics. A multidisciplinary team that included doctors, nurses, and pharmacists created a proactive risk assessment and a standard order

set. Education was provided to front-line staff, and input was obtained from these individuals.

The infection prevention nurse directed a second initiative. Based on data supporting evidence-based best practices, Community Memorial Hospital limited the use of urinary catheters to 24 hours, discontinued post-operative antibiotics in 24 hours, and standardized the antibiotic choice to reflect compliance with recommended guidelines.

OUTCOMES

- Compliance with the VTE prevention program resulted in an improvement in the rate of post-operative deep vein phlebitis.
- Community Memorial Hospital leads the area in published patient satisfaction surveys.
- All three surgical care core antibiotic measures improved to the current 98% to 99% level.

LESSONS LEARNED

- Medical and nursing staff buy-in is essential when developing and adopting best practices.
- Consistent adherence to established standards ensures uniformity of care and positive outcomes.
- Quality is the responsibility of every individual involved in patient care. Sharing information regarding desired outcomes and the need for improvement is critical for success.

Management of Diabetes, Hyperglycemia, and Hypoglycemia in the Hospital Patient
Highland Hospital/University of Rochester Medical Center

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PROJECT DESCRIPTION

Highland Hospital and the University of Rochester Medical Center (URMC) are committed to minimizing the occurrence of adverse events related to diabetic and/or insulin management, recognizing that optimum diabetic management, including use of insulin, is a specialty not well understood by many caregivers. The goal of this initiative was to reduce variability in blood glucose levels, particularly the incidence of profound hypoglycemia. Inpatient glycemic control and a standardized care process were used to guide and support providers to achieve benchmark performance.

Use of clinical practice guidelines and an electronic order set were key to helping providers easily understand the patient’s insulin requirements, nutritional impact, components of insulin to be used, and appropriate monitoring. A

LESSONS LEARNED

- The best practice for managing diabetes and preventing hypo/hyperglycemia in the hospital setting is anticipatory physiologic insulin dosing, prescribed as a basal/bolus insulin regimen. There is no “auto-pilot” insulin regimen for a hospitalized patient.
- Protocolized diabetes management reduces less variability in care.
- Ongoing education and Diabetes Nurse Educators are vital to the success of this program.



full-time diabetes nurse practitioner role was created to provide expert education and to support providers, caregivers, and patients/families. All staff received insulin management education, and diabetes nurse practitioners consulted with patients and staff regarding complex cases.

OUTCOMES

Through this initiative, Highland Hospital and URMC achieved:

- eighty percent compliance with proper protocol by attending physicians and mid-level providers;
- 60% compliance by residents;
- significant improvement in blood glucose variables (minimal, median, and maximum levels across four participating patient care units); and
- fewer episodes of profound hypoglycemia.



Eliminating Wrong-Site Peripheral Nerve Blocks

Hospital for Special Surgery

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PROJECT DESCRIPTION

In 2003, 44% of the 19,500 anesthetics administered at the Hospital for Special Surgery were peripheral nerve blocks; as such, the importance of a correct-site verification process was undeniable. Through monitoring and evaluation of procedures, Hospital for Special Surgery determined that a process was needed to ensure confirmation of the block site by the perioperative team. The hospital developed a pre-anesthetic site verification policy to eliminate reliance on an individual physician to perform the procedure and encourage a multi-disciplinary approach. An education and monitoring program reinforces compliance and standardizes the process,

helping minimize verification oversight.

With both of these approaches in place, consistency is cultivated and enhanced compliance is expected to translate into a decrease in wrong-site peripheral nerve blocks, thus improving patient safety and satisfaction.

OUTCOMES

- A unique multi-disciplinary procedure was adopted to eliminate the likelihood that the correct-site verification policy would be overlooked.
- Delays and distractions in the operating room were minimized by requiring the circulating nurse to stay at the patient's bedside until the block is initiated.
- Compliance increased and remained consistent for three years.

LESSONS LEARNED

- An effective policy must be reinforced through constant monitoring to encourage 100% compliance.
- A perioperative team approach increases efficacy and decreases the likelihood that procedures will be omitted.
- To maintain high compliance rates, the hospital developed an education program to reinforce the policy and minimize verification oversight.



Save That Vein: Preventing Complications Related to Peripheral and Central Venous Access

John T. Mather Memorial Hospital

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PROJECT DESCRIPTION

Recognizing the risks associated with patients receiving various intravenous medications and

infusions, John T. Mather Memorial Hospital's Nursing Executive Committee established a full-time infusion therapy coordinator position. The infusion therapy coordinator developed a program to incorporate the 17 elements of performance listed in The Joint Commission's national patient safety goals, including short-term peripheral intravenous access.

LESSONS LEARNED

- Patient/situation-specific nursing in-service education drives positive changes in practice and outcomes.
- Collaboration between physicians, nurses, patients, and caregivers is necessary to ensure appropriate venous access to improve patient outcomes.

After conducting a needs assessment, an educational program was developed that included an introductory lesson plan, opportunities for demonstration and return demonstration, direct clinical observation, reward and recognition, and re-education/in-service.

Daily vascular access rounds are conducted, with emphasis on the performance indicators. When standards are not met, a patient/situation-specific nursing education in-service is conducted with the appropriate nurse. The patient's infusion needs are discussed and a determination is made to either maintain or remove access, or consider an alternate vascular access device.

OUTCOMES

From 2008 to 2009:

- intravenous occurrence reports decreased 7%;
- central line-associated bloodstream infections (CLABSIs) for all central lines (rate per 1,000 catheter days) in the intensive care unit/critical care unit (ICU/CCU) decreased 15%;
- length of stay in the ICU/CCU decreased 9.3%;

- the hospital-wide CLABSI rate for peripheral infusion lines fell 23%.



Post-Kidney Transplant Care Management Program
*Metropolitan Jewish Health System/
SUNY Downstate Medical Center*

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PROJECT DESCRIPTION

The SUNY Downstate Medical Center kidney transplant team identified an increase in the difference between expected and actual graft rejections/patient expirations rates. SUNY Downstate, in partnership with Metropolitan Jewish Health System's

LESSONS LEARNED

The program team learned the importance of:

- case management and follow-up with post-transplant patients;
- a tight community and hospital partnership; and
- using both technology and hands-on case management to ensure positive outcomes.

long-term home health care program (LTHHCP), created the Post-Kidney Transplant Care Management Program, which offers in-home and telephonic follow-up care to help patients understand how to recognize and respond to changes in their health status. The program provides reminders for clinic appointments, arranges transportation, and includes telemonitoring and innovative medication adherence technology to track vital signs and compliance. The program care managers from the LTHHCP serve as liaisons between the patient, transplantation team, and physicians. The use of a home care agency enables the team to address social issues such as adequate housing, diet, and

entitlement programs. Success in the post-transplant programs has led to the inclusion of high-risk pre-transplant patients.

OUTCOMES

- The overall survival rate increased 4.71% for patients in the program.
- Program patients experienced a 7.66% increase in graft survival rate.
- Length of stay of patients who were readmitted to the hospital was reduced from six to five days for those in the program.



Enhancing Performance, Changing Culture, Improving Communication, and Supporting Rapid Cycle Change Across a Multi-Hospital Health Care System

North Shore-Long Island Jewish Health System

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PROJECT DESCRIPTION

North Shore-Long Island Jewish Health System (NSLIJ) is determined to provide the highest quality, safest clinical care. NSLIJ recognized that to attain and sustain its goals in quality and patient safety, it needed the ability to respond to the changing health care environment in an agile manner by transforming the culture and sustaining that change. NSLIJ's approach entailed development and implementation of a values-based, patient-centered model intended to translate its mission, vision, and values into the daily practice of patient care. The Collaborative Care Model®, which was started at a pilot hospital and was later implemented throughout the system, provides infrastructure for executing rapid cycle changes and supports

the communication necessary to sustain these changes.

Staff training included unit- and department-based collaborative care councils, tools to support rapid cycle change and communication. Selected quality, cultural, and safety metrics were monitored.

OUTCOMES

- In one year, 19,000 employees from 14 hospitals were educated on the model and tools for effective communication.
- More than 75% of patient care areas use interdisciplinary collaborative care councils, including those related to support, ancillary, and allied health services.
- The program achieved significant improvements by reducing falls and bloodstream and ventilator infections, while improving patient satisfaction.

LESSONS LEARNED

- Transformation can be a simple process; simplicity supports sustainability.
- Frontline staff must be engaged to ensure sustainability.
- Collaborative care councils, paired with communication tools, are effective mechanisms for communicating, problem solving, and engaging large, interdisciplinary teams.
- The model is more than an initiative; it is a way of life.



Responding to H1N1: Key Principles of Health System Preparedness and Response

North Shore-Long Island Jewish Health System

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PROJECT DESCRIPTION

North Shore-Long Island Jewish Health System (NSLIJ) set its emergency operations plan into motion in spring 2009 when it became the epicenter of the H1N1 epidemic. Critical internal resources were mobilized to meet the urgent demands placed on the system's hospitals. NSLIJ's laboratory rapidly processed thousands of viral specimens, which helped define the

scope of the problem and support public policy on H1N1 testing. Anticipating a potential resurgence of H1N1 later in the 2009-2010 influenza season, NSLIJ collaborated with the local health commissioner to establish community outreach and a strategic vaccination program. The success of the emergency operations plan and response to public health needs was achieved through effective surge planning, protocol design, expansion of laboratory capabilities, and use of real time data for administrative and clinical decision making.

Key elements of the program included a social media campaign, community education through an influenza Web site, community outreach, mass immunization efforts, population mapping based on census data to determine points of vaccine distribution, and partnerships with government agencies. Lessons learned from the initial outbreak were critical to successfully managing the subsequent epidemic and

LESSONS LEARNED

- Emergency operations plans must be adaptable, scalable, and not restricted to a specific population or disease.
- Real-time data are essential for establishing priorities, providing decision support, and allocating sparse resources.
- Partnerships with local, state, and federal agencies, along with using social media, maximizes coordination of public health services.

improving vaccination rates among high priority groups in targeted geographic locations.

OUTCOMES

During the initial, three-month surge of H1N1 patients:

- More than 12,000 patients were evaluated in NSLIJ's emergency departments and triage centers.
- More than 36,000 tests were performed; 36% were positive for H1N1 and 485 patients were admitted.
- The average age of H1N1 patients was 13.7 years.
- Post-surge, approximately 17,000 individuals (56.2% from high-priority groups) were vaccinated.



Partnering for Quality: Fostering Multidisciplinary, Organization-Wide Quality Improvement NYU Langone Medical Center

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PROJECT DESCRIPTION

In early 2009, NYU Langone Medical Center strengthened its clinical quality and patient safety by implementing its Partnering for Quality (P4Q) program. P4Q pairs physician leaders and nurse managers on each of 59 patient care units (inpatient, outpatient, and perioperative) to develop, execute, and sustain initiatives enlisting a multidisciplinary team to carry out one or more improvement cycles until a specified goal is reached.

The program is led by the chief medical officer and the chief nursing officer, who review and approve all project proposals and reports and ensure they align with organizational quality

and safety goals, in cooperation with senior leaders. Senior leaders provide support and direction through semi-annual team meetings, more frequent project presentations at other meetings, and continuous informal communication. Support for quality performance measurement and improvement is offered through NYU Langone Medical Center's Department of Clinical Quality and Effectiveness.

LESSONS LEARNED

- The program delivered measurable results both at the patient care unit and organization-wide levels.
- Knowledge about quality performance measurement and improvement varies among participating physicians and nurses, and support for teams is essential.
- The standard report format is an effective means to disseminate information about local achievements throughout a large, complex organization.

A status report, using a standard format, is provided quarterly by each team and is posted on the hospital intranet. Exceptional projects are presented to the board of trustees and at the annual Quality-Safety Celebration.

OUTCOMES

- Forty-eight (93%) of the 57 P4Q teams made measureable progress toward one or more goals during the first year of the program.
- Projects addressed a broad range of improvement opportunities such as improving hand hygiene hand-offs, wound and line care protocols, patient education, and treatment outcomes.
- P4Q program projects helped NYU Langone Medical Center achieve 2009 organization-wide goals: excellence in national measures, reduced hospital mortality, and minimizing hospital-acquired infections.

Reduced Mortality and Codes Following Initiation of a Rapid Response Team

Oneida Healthcare Center

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PROJECT DESCRIPTION

To reduce mortality rates, decrease the number of codes called, and improve patient outcomes, Oneida Healthcare Center established a rapid response team (RRT) in April 2008.

The RRT provides a multidisciplinary team approach for early and rapid intervention for patients with deteriorating conditions. The team includes an advanced cardiac life support-certified registered nurse with critical care experience and an experienced respiratory therapist certified in basic life support.

RRT calls may be initiated by any member of the staff based on established criteria (i.e., acute changes in heart rate, blood pressure, etc.) or in response to concerns voiced by patient, family, or staff. RRT members will immediately respond to the patient's bedside, receive information about the patient from the patient's nurse using the Situation, Background, Assessment, Recommendation (SBAR) model of communication, and remain with the patient until the situation is resolved.

OUTCOMES

Since inception of the RRT in April 2008, the facility saw a 12% reduction in inpatient mortality rates and a 74% reduction in inpatient codes.

LESSONS LEARNED

- Earlier intervention to changes in a patient's condition can improve outcomes.
- The culture must consider any concerns regarding a patient's condition to be valid.

Using an Analgesia/Sedation Protocol to Reduce Mechanical Ventilation Days and Mortality in a Surgical Intensive Care Unit *Rochester General Health System*

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PROJECT DESCRIPTION

Helping mechanically ventilated (MV) surgical patients achieve optimal comfort can be challenging due to multiple surgical procedures, existing surgical incisions, drains, development of delirium, and acute poly-substance withdrawal. Continuous infusions of analgesics and sedatives are commonly administered to MV critically ill patients to provide optimal comfort. However, a link has been established between increased MV days and the use of continuously infused sedatives. Although daily sedative interruptions have been shown to improve outcomes, this approach may not be feasible in all critically ill patients. Therefore, Rochester General Health System formed a multidisciplinary team to implement an analgesia/sedation protocol (ASP) in the Surgical ICU (SICU) to standardize the process used to keep patients calm and cooperative, and decreasing MV days.

In November 2008, the SICU multidisciplinary team established the following goals:

- reduce MV days;
- maintain comfortable and awake patients; and
- decrease the use, duration, and dose of continuously infused sedatives.

LESSONS LEARNED

- Standardizing analgesia and sedation improves outcomes without compromising safety in the SICU.
- Involving multiple disciplines ensures protocol compliance and sustainability.

OUTCOMES

Pre- and post-ASP data were collected, showing that:

- post-ASP patients had a shorter median MV duration;
- a 60% reduction in ventilator-associated pneumonias was observed between 2008 (pre-ASP) and 2009 (post-ASP);
- a lower mortality rate was observed in the post-ASP group compared to the pre-ASP group (10% versus 25%); and
- the success of this project has given Rochester General Health System the opportunity to implement this protocol in the medical intensive care unit.



Using Multidisciplinary Rounds to Enhance Patient Safety and Decrease Morbidity in a Critical Care Unit *Saint Francis Hospital and Health Centers*

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PROJECT DESCRIPTION

In January 2009, Saint Francis Hospital and Health Centers implemented multidisciplinary rounds in its mixed intensive care unit. Established by physician leaders and focused on enhancing quality of care and using evidence-based guidelines,

LESSONS LEARNED

- A patient-centered care model enables all members of the team to offer individual expertise.
- While emphasizing safety and efficiency, Saint Francis benefited from a lower cost of care and shorter length of stay.
- Multidisciplinary rounds facilitate sustained process improvement.

rounds were trialed twice a week. All disciplines were invited and a Plan-Do-Study-Act cycle was modeled. The rounds were extended to the trauma unit, and evolved to provide an opportunity for teaching and attaining specific patient care goals. The importance of evidence-based care is emphasized. The rounds serve as a means to verify inclusion of “bundle” protocols for ventilator-associated pneumonia (VAP) and central-line associated bloodstream infection (CLABSI), as well as tube feeding, electrolyte, and sedation/pain protocols. A 24-hour plan of care is determined for each patient.

In September 2009, Saint Francis Hospital and Health Centers joined the Institute for Healthcare Improvement (IHI) Multidisciplinary Rounds Expedition. Through this initiative, Saint Francis added even more practices and developed a nursing checklist. The rounds last approximately five to eight minutes for each patient and are oriented toward organ systems, problems, and protocols. Families are encouraged to participate.

OUTCOMES

- Ventilator length of stay was reduced by one-half day for trauma patients.
- Critical care length of stay was reduced 1.1%, with related cost savings of approximately \$500,000.
- Safety risks are more easily identified.
- Errors by omission decreased significantly.
- Goals for VAP and CLABSI compliance were met.



Optimizing a Culture of Interdisciplinary Collaboration to Prevent CLABSIs in Critical Care *St. Francis Hospital—The Heart Center*

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PROJECT DESCRIPTION

The Institute for Healthcare Improvement’s 5 Million Lives Campaign and the National Health Care Safety Network provided the stimulus for a needs assessment on the prevention of central line-associated bloodstream infections (CLABIs) in the critical care units at St. Francis Hospital—The Heart Center. A review of the literature, data, advisory groups, and existing expertise provided a foundation for all stakeholders. Increased scientific knowledge and understanding of these underpinnings allowed St. Francis Hospital to develop a conceptual framework. Barriers were identified and effective interventions were applied to improve patient-, provider-, and payer-specific outcomes. Monthly performance improvement team meetings, mini root-cause analyses, and implementation of interdisciplinary daily line stickers resulted in a 67% decrease in CLABSI rates.

LESSONS LEARNED

- Developing a CLABSI Task Force facilitated connections and bridge-building—assisting in meeting a very complex challenge.
- Effective communication helps overcome many barriers.
- Developing a process that moves toward organizational goals within a collaborative environment results in a culture that improves employee and patient satisfaction.

OUTCOMES

- 2009 quarterly CLABSI rates demonstrated a positive trend, falling from 1.4 to 0.6 CLAB-SIs per 1,000 line days.
- Results were below the baseline and the targeted rate of 1.0 per 1,000 line days.
- Zero CLABIs were obtained in all critical care units for four months in 2009, with one unit at seven consecutive months without a CLABSI.



**Enhanced Post-Operative Inpatient Physical Therapy for Patients Undergoing Major Thoracic Surgery
St. Luke’s-Roosevelt Hospital Center**

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PROJECT DESCRIPTION

Through this initiative, St. Luke’s-Roosevelt Hospital Center addressed chest surgery in an increasingly older, medically challenged population. Post-operative complications are a risk to mortality, long-term morbidity, and quality of life.

St. Luke’s-Roosevelt Hospital Center endeavored to improve its post-operative patient care by developing an enhanced post-operative inpatient pulmonary rehabilitation program in 2009. The goal is to improve patient mobilization, strength, and independence after major thoracic surgery through collaboration among thoracic surgery,

LESSONS LEARNED

- The LOS reduction was greatest with high-risk patients.
- This program enhanced an overall “team building” approach between nursing, physical therapy, and physician staff, in regard to improving patient care with earlier discharges and avoiding potential complications.

pulmonary medicine, and rehabilitation medicine and nursing staff.

This initiative included training of the physical therapy team and twice daily physical therapy sessions, including weekends, for patients undergoing major thoracic surgery.

OUTCOMES

- This initiative reduced post-operative length of stay (LOS) for these patients significantly.
- The initiative resulted in excellent patient satisfaction. According to a survey of patients, 90% were satisfied with physical therapy, 90% were satisfied with nursing care, and 100% would recommend the program to a friend or relative.
- The organization saw improved collaboration between its physical therapy and nursing teams.



**Keeping the “Never” in Never Events
Vassar Brothers Medical Center**

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PROJECT DESCRIPTION

In preparing to implement the Centers for Medicare and Medicaid Services policy of nonpayment for certain potentially preventable hospital-acquired conditions (HACs), or “never events,” Vassar Brothers Medical Center evaluated

LESSONS LEARNED

- The process must be replicable and sustainable within the working norms of the hospital.
- Educating all staff to the importance of eliminating never events is imperative.
- Ongoing monitoring, reporting, and debriefing improve outcomes.

how these events were internally identified, reported, and reviewed. As a result of that evaluation, Vassar Brothers Medical Center decided to focus on three never events in an ongoing performance improvement project. The selection focused on high-volume, high-cost events that could be reasonably prevented through implementation of evidence-based guidelines. The never events selected were falls with injuries, stage 3 and 4 pressure ulcers, and catheter-associated urinary tract infections (CAUTIs). The hospital implemented various performance improvement activities including debriefing sessions to achieve the desired outcomes.

OUTCOMES

Total HACs:

Fourth quarter 2008: 8	Third quarter 2009: 6
First quarter 2009: 5	Fourth quarter 2009: 1
Second quarter 2009: 6	



CLINICAL CARE—STROKE

Improving Patient Safety While Decreasing Complications by Strengthening the Dysphagia Screening Process for Stroke Patients *Crouse Hospital*

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PROJECT DESCRIPTION

Crouse Hospital used the American Heart Association’s stroke guidelines, which emphasize the importance of assessing the patient’s ability to swallow safely before allowing oral intake of any kind, to prevent aspiration and pneumonia. Initiatives that were implemented included:

- updated the organization’s evidence-based dysphagia (difficulty swallowing) screening policy;
- educated all nurses on the policy and held staff meetings for dysphagia screen education;
- a poster campaign was conducted on all stroke floors;
- computer pop-up screens for every stroke patient admission remind nurses of mandatory dysphagia screen;
- computer documentation of dysphagia screen pass or fail—for patients assessed with difficulty swallowing, the computer creates an automatic referral to dietary;
- adoption of stroke admission order sets that contain dysphagia screening and evaluation orders;

LESSONS LEARNED

- **Multidisciplinary approaches are needed to achieve and maintain a change in practice.**
- **Team “champions” are invaluable to organization-wide improvement plans.**
- **No initiative is impossible when the stakes are patient safety-driven.**

- educated neurologists regarding dysphagia screens; and
- a stroke manager, along with stroke floor nurses, conducts daily rounds to promote dysphagia screen discussions for new patients.

OUTCOMES

- Patient safety increased by making nurses and physicians aware of dysphagia concerns and establishing a systematic screening process.
- This initiative produced a statistically significant increase in dysphagia screening, from 72% in 2008 to 80% in 2009.



Improvement with Stroke Patient Education and Documentation Compliance *Good Samaritan Hospital/Bon Secours Charity Health System*

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PROJECT DESCRIPTION

Good Samaritan Hospital is designated by the State of New York and certified by The Joint Commission as a Stroke Center. Patient education is a best practice for stroke patient care and one of the indicators required to maintain certification. Good Samaritan Hospital is working on

LESSONS LEARNED

- **Good communication with nurse managers and a multidisciplinary team that includes nursing staff are the keys to successful compliance.**
- **Reminders and establishing good rapport between the quality improvement department and multidisciplinary team helps improve compliance.**

continued next page

continuous improvement in stroke care education and documentation using technology, staff reminders, updated educational tools, and various patient identification tools. Stroke patients are educated by the multidisciplinary team on medications, signs, and symptoms of stroke and proper dietary needs. With the support of the hospital leadership, improved communication among various disciplines has helped increase compliance with the education indicator. Findings are presented at organizational quality and board meetings.

LESSONS LEARNED (continued)

- Heightening awareness helps improve compliance.
- Hospital leadership supports the initiative to help improve compliance.

OUTCOMES

- Good Samaritan Hospital achieved a 30% increase in compliance with the stroke education indicator over the last two years.
- 2009 results (January-December average) for stroke education compliance was 96%, and consistently 90% or higher monthly.



Information Technology and the Stroke Task Force Collaborate to Improve Quality

Nassau University Medical Center

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PROJECT DESCRIPTION

As a New York State Designated Stroke Center, Nassau University Medical Center follows best practice standards and discharge guidelines developed by the American Heart Association. Recognizing that stroke management is very

time-sensitive and that emergency department physicians need to make critical decisions regarding treatment, the Plan-Do-Study-Act model was applied to the patient entry component of their stay. Issues were identified with inconsistent stroke code initiation, problems with validation due to inconsistent data sources or missing data, and time lags in practitioner feedback.

LESSONS LEARNED

- The organization's information technology system can help with data collection and validity.
- Real-time drill-down with immediate remediation can improve outcomes.
- Ongoing analysis and continual revision of the Medical Logic Module system can improve processes.

Nassau University Medical Center's goal was to simplify and ensure the validity of documentation, and provide real-time "drill-downs" with immediate correction plans. To accomplish this goal, an information technology solution was developed and initiated in April 2008. Triggered by presumptive stroke International Classification of Disease, Ninth Revision, Clinical Modification (ICD-9-CM) codes, stroke team activation is automatic. A stroke order set populates information fields automatically, and generates an e-mail capturing key quality indicators that is sent to all disciplines.

OUTCOMES

This initiative achieved:

- a 228% increase in the number of stroke patients with a recorded National Institutes of Health stroke scale score;
- a 36% increase in the number of stroke patients who received a computerized tomography scan less than 25 minutes from arrival;
- a 158% increase in the number of stroke patients with a recorded last well and arrival

time to identify the earliest possible time that stroke symptoms began; and

- a 126% increase in validation of acute ischemic stroke patients who are not treated with intravenous tissue plasminogen activator (IV t-PA) due to exclusion criteria.



Interdisciplinary Approach to Stroke Care and Treatment *Phelps Memorial Hospital Center*

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PROJECT DESCRIPTION

Phelps Memorial Hospital Center, embracing the public's increasing need to be assured that hospitals are providing evidence-based care, achieved New York State designation as a Certified Stroke Center in October 2007. Phelps also worked closely with the American Heart Association's Get With the Guidelines program to monitor stroke care performance. A team was identified to evaluate and coordinate the program's effectiveness, including analysis of aggregated data and individual case presentations. Concurrent care review against established treatment guidelines was essential to reinforce

LESSONS LEARNED

Critical elements of success include:

- early involvement of key physician leaders;
- participation of information technology staff early in the process;
- high standards for achievement must be established from the outset;
- regular feedback to staff; and
- concurrent chart review whenever possible—to catch potential omissions while the patient can still benefit!

proper treatment. A support group was established to respond to patient and family needs for information and emotional support.

By the start of its third year, the stroke program was awarded the American Heart Association's Gold Plus Achievement Award to recognize 24 months of consistently excellent performance.

OUTCOMES

Results of the initiative included:

- all eligible patients had thrombolysis within best practice guidelines;
- early antithrombotic therapy was provided to 99.5% of eligible patients;
- appropriate anticoagulation at discharge for atrial fibrillation was provided to 98% of eligible patients;
- all eligible patients received smoking cessation counseling;
- the hospital achieved 97.7% success on the "7 Consensus Guidelines"; and
- Phelps Memorial received the Gold Plus achievement award from the American Stroke Association by the end of the second year.



When Seconds Count: Employing Six Sigma Strategies to Improve Compliance with Best Practices in Transient Ischemic Attack and Stroke Management

St. Catherine of Siena Medical Center

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PROJECT DESCRIPTION

St. Catherine of Siena Medical Center's goal is to achieve significant, robust, and reliable improvements in transient ischemic attack (TIA) and

stroke patient management by using Six Sigma process improvement strategies. Senior leadership's vision for 2006 included a commitment to improving the hospital's compliance with published best practices to minimize the devastating functional, emotional, and financial impact of these two emergency events on patients.

The institution collaborated with the American Stroke

Association and American Heart Association to implement best practices and Get with the Guidelines performance measures. These collaborative efforts achieved significant improvements in the provision of defect-free care. In addition to providing consistent, reliable care harmonized with evidence-based best practices, St. Catherine of Siena Medical Center is better prepared to attract patients to the facility and assume a strategic position that will ensure appropriate reimbursement when stroke/TIA is added as a core measure.

OUTCOMES

St. Catherine of Siena Medical Center achieved the following improvements in stroke/TIA care:

- rate of rt-PA utilization increased 33%;
- deep-vein thrombosis prophylaxis compliance improved 34%;
- anticoagulation therapy at discharge increased 67%;
- the number of patients discharged on cholesterol-reducing agents increased 65%;

LESSONS LEARNED

- Increasing staff accountability yields improved outcomes, evidenced by improved performance scores.
- Sustained culture changes are achieved by empowering and recognizing the contributions of unit-specific stroke champions.
- Conducting monthly stroke committee meetings and employing daily "huddles" reinforces hot topics.

- documentation of dysphagia screen increased 26%; and
- documentation of stroke education increased 83%.



CLINICAL CARE – VAP

Reducing Patient Ventilator Days and Ventilator-Associated Pneumonia

Nathan Littauer Hospital and Nursing Home

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PROJECT DESCRIPTION

Nathan Littauer Hospital and Nursing Home formed an interdisciplinary team to investigate ways to reduce both the number of patient ventilator days and cases of ventilator-associated pneumonia (VAP). Evidence-based guidelines from the American Association of Respiratory Care and American College of Chest Physicians were used, and the institution participated in HANYS' VAP Prevention Project.

A team was established that included the medical director of respiratory therapy, a certified registered nurse anesthetist, respiratory therapy supervisor, infection control nurse practitioner, and the surgical care unit nurse manager. The team met monthly for one year and devoted time to staff education and developing a ventilator "bundle," sedation protocol, ventilator weaning protocol, and preprinted ventilator orders. New, fifth-generation ventilators were purchased. Use of passive versus active humidification, closed suction catheters, restricting

LESSONS LEARNED

- Staff education is the single most important element to implementing successful change.
- Monitoring of parameters, processes, and protocols must be ongoing, with active participation of staff.
- Continuous reinforcement, acceptance of change, and monitoring of actions taken is the key to success.

routine instilled saline during suctioning, elimination of routine circuit changes, and use of metered dose inhalers to deliver medications to ventilated patients rather than nebulizers (as appropriate) were implemented. The team educated for nursing, respiratory, and physician staffs, implemented new protocols, and conducted daily rounds with a respiratory therapist, registered nurse, and physician.

OUTCOMES

- The average number of ventilator days per patient was reduced from eight in 2006 to three in 2009.
- The number of VAP cases decreased from four in 2006 to zero in 2009.
- This initiative fostered improved collaboration and communication among staff, and motivation toward a common goal.



VAP Prevention in a Community Hospital Setting is Sustainable and Can Be Like Breathing: "Automatic and Painless"

St. Catherine of Siena Medical Center

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PROJECT DESCRIPTION

St. Catherine of Siena Medical Center established an initiative to decrease the ventilator-associated pneumonia (VAP) rate in its critical care and step-down units. A risk assessment was performed to evaluate hand hygiene compliance, sedation interruption, readiness to wean, maintenance of semi-recumbent positioning, and oral care, and all elements of the VAP "bundle."

The following practices were instituted:

- a prepackaged oral hygiene kit is used every four hours and a Chlorhexidine rinse is used every 12 hours;
- families and visitors are encouraged to take an active role in VAP prevention;
- daily assessments of necessity for sedation and readiness to wean; and
- a flow sheet to ensure systematic use of the bundle elements and standardized shift handoffs.

LESSONS LEARNED

- Patient outcome improvements were realized through collaboration among all team members, from senior leadership to staff.
- Sustaining improved outcomes is possible when changes become part of the culture.
- Small changes to patient care can improve patient outcomes, save lives, and are cost effective.

OUTCOMES

- VAP has been eliminated on the respiratory step-down unit since January 2008.
- There was a sustained decrease in the incidence of VAP in the critical care unit in 2008 and 2009.
- Professional accountability for hand hygiene was instituted.
- This initiative resulted in high levels of satisfaction for all involved.
- The institution realized cost savings of about \$280,000.
- Mortality decreased, with three lives saved, according to statistics.



Zero Tolerance for Ventilator-Associated Pneumonia

St. John's Episcopal Hospital, South Shore

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PROJECT DESCRIPTION

St. John's Episcopal Hospital assigned a critical care nurse manager to lead a multidisciplinary team focused on ventilator-associated pneumonia (VAP) performance improvement. Upon reviewing the literature, including the interventions supported by the Institute for Healthcare Improvement and HANYS' VAP Prevention Project, the team examined the facility's data and developed a checklist of best practices that included elevation of the head, daily sedation vacation, peptic ulcer prophylaxis, deep vein thrombosis prophylaxis, and early mobilization.

These interventions were moderately successful; however, based on further research, the team decided to introduce a new mouth care product that included Chlorhexidine. The kit was well received by staff, who found it easy and convenient to use. This intervention proved pivotal to the program's success. In addition, the unit purchased new beds that included an automatic

LESSONS LEARNED

- A coordinated, multidisciplinary team can effectively define a problem, craft a solution, implement the plan, and monitor outcomes.
- Administrative support and nurse and physician "champions" are critical to the team's success.
- It is important to communicate a well researched best practice approach, measure and report the results on a regular basis, and ask for feedback to achieve staff alignment and support.

setting for 30 degrees head elevation, assuring the optimal elevation for this patient population. As the team followed the monthly results, it became clear that the protocols were effective, and they were expanded to a 43-bed pulmonary care unit.

OUTCOMES

- In 2009, the VAP rate was .48 per 1,000 patient days (one VAP), compared to a 2008 VAP rate of 2.2 per 1,000 patient days (five VAPs).
- Outcomes exceeded the National Healthcare Safety Network national average.



Preventing Ventilator-Associated Pneumonia: A “Bundle of Joy” for Patients and Staff

St. Joseph’s Hospital Health Center

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PROJECT DESCRIPTION

Ventilator-associated pneumonia (VAP) has the highest mortality rate of all health care-associated infections. VAP also increases the overall length of hospital stay, adding an additional mean cost of \$40,000 per stay. St. Joseph’s Hospital Health Center believed its VAP rates could improve and convened a Prevent VAP Committee to implement a “bundled” approach to preventing VAP.

LESSONS LEARNED

- Prevention of health care-associated infections does not necessarily require expensive or high-tech interventions.
- A multidisciplinary approach is critical to success. Everyone, not just nursing or medical staff, must be included in the process.
- Feedback to those involved in the process is critical to continued success.

The committee determined it would include the following bundled best practices:

- elevation of the head to between 30 and 45 degrees;
- daily “sedation vacation” to assess readiness to extubate;
- stress ulcer prophylaxis;
- deep-venous thrombosis prophylaxis; and
- routine (i.e., every two hours) oral care.

Staff members were informed of the new initiative online and attended a mandatory presentation on the positive clinical impact bundling can have on VAP. The goal was 100% education, with staff from all disciplines involved. Within a few months, the bundle concept for VAP reduction became the hospital network’s “bundle of joy,” reducing VAP rates from the 90th percentile to nearly zero, enhancing patient care, improving staff morale and teamwork, and saving the hospital hundreds of thousands of dollars.

OUTCOMES

- VAP cases in the surgical intensive care unit (SICU) were reduced from 22 in 2008 to one case in 2009. VAP cases in the medical ICU were reduced from 23 in 2008 to two cases in 2009.
- Reducing total VAP cases from 45 in 2008 to three in 2009 saved approximately \$1.68 million.



Reduce the Number of Ventilator-Associated Pneumonias to Zero

Thompson Health

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PROJECT DESCRIPTION

Thompson Health engaged in a progressive and successful journey to achieving zero ventilator-associated pneumonias (VAPs) in 2009. Building on the lessons learned from the HANYS' VAP Prevention Project, a multidisciplinary team started with daily VAP "bundle" monitor sheets at the bedside. Staff were responsible for documenting the daily bundle for each patient, which resulted in the establishment of daily rounds. The infection control practitioner joined the daily rounds to provide continuous reminders and education. In addition, Thompson Health launched an extensive hand-washing campaign.

The team identified the need for a tool to help wean ventilator patients in a timely manner. A ventilator weaning protocol was approved under the leadership of the respiratory therapy supervisor. This policy was reviewed by the medical executive committee and endorsed by the critical care committee, providing the clinician support required for success. This protocol allowed staff to extubate some patients one day earlier. It became routine to attempt weaning on a daily basis, unless contraindicated. Outcomes are reported monthly to the appropriate committees

LESSONS LEARNED

- Increased monitoring improved compliance with the protocol; designating one registered nurse at the point of care to be responsible for the data improved the compliance rate and data integrity.
- Staff pride and motivation increased.

and are on the quality committee's scorecard for the board of directors.

OUTCOMES

- In 2009, Thompson Health had 392 ventilator days, with no VAPs.
- Once the weaning protocol was approved, the process was laminated and attached to the ventilators for easy reference.



CLINICAL CARE – VTE

Improving VTE Prophylaxis in a Community Hospital with CPOE *Glens Falls Hospital*

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PROJECT DESCRIPTION

In 2009, the Glens Falls Hospital Department of Medicine selected the rate of deep vein thrombosis (DVT) prophylaxis with low molecular weight Heparin as one of its performance improvement indicators. A multi-disciplinary team evaluated the current process for assessing DVT risk and interventions and identified issues with scoring risks and underutilization of DVT prophylaxis (30%), as well as a higher prevalence in medical patients. After evaluation, the team recommended the program focus specifically on venous thromboembolism (VTE).

The medical staff developed computerized VTE prophylaxis orders. A VTE prophylaxis alert appears when an adult medical patient is admitted. When a patient's score indicates a moderate to high risk for VTE, pharmacological anticoagulation and mechanical prophylaxis alternative options or contradictions are considered.

LESSONS LEARNED

- For optimal cooperation and involvement, engage medical staff before changing the computerized provider order entry process.
- Computer decision support will increase compliance with evidence-based guidelines.
- Use concurrent monitoring to evaluate the success of improvement initiatives and identify underlying reasons for failure.

OUTCOMES

- VTE prophylaxis for medical patients increased from a baseline of 30% to more than 80% six months after initiation.
- In 2009, there was a 7% decrease in patients with hospital-acquired VTE.
- Planning and implementation was completed in six months. The first meeting was held on January 15, 2009 and the computerized VTE prophylaxis order process went live on July 6, 2009.



Improving VTE Prevention Strategies and Patient Outcomes *Maimonides Medical Center*

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PROJECT DESCRIPTION

Given its high-risk population, Maimonides Medical Center formed a multidisciplinary team to develop a hospital-wide venous thromboembolism (VTE) risk assessment and prophylaxis policy. A point-based risk assessment was incorporated into the paper history and physical document. The American College of Chest Physicians (ACCP) prophylaxis protocol was incorporated into the Medical Center's

LESSONS LEARNED

- Implementing standardized protocols is an effective way to reduce the incidence of VTE and pulmonary embolism.
- Early end-user feedback is necessary before and after implementing a new process.
- When using evidenced-based practice guidelines, physician consensus is essential for success.

computerized physician order entry (CPOE) system. A reminder was added to the ordering pathway if no risk assessment was performed.

Although compliance was more than 90%, outcomes did not improve to the degree anticipated. An analysis revealed a lack of practitioner understanding of the point-based risk assessment. Maimonides collaborated with the Agency for Healthcare Quality and Research (AHRQ) to improve its process, and in January 2009, the following changes were implemented:

- the assessment was simplified, eliminating the point system;
- three categories of risk were identified (low, moderate, and high);
- risk assessment and ordering protocols were incorporated directly into the CPOE system;
- the assessment was made mandatory and must be completed before admitting orders are entered; and
- the CPOE pathway was revised to reflect current AHRQ/ACCP-recommended guidelines.

OUTCOMES

- Maimonides achieved a 43.8% decrease in the number of reportable VTEs in 2009, compared to 2007.
- There was a 32.8% decrease in the number of reportable pulmonary embolisms in 2009, compared to 2007.
- National Surgical Quality Improvement Program outcome data showed a downward trend in the surgical VTE rate.



Redesigning Processes to Prevent Hospital-Acquired VTE South Nassau Communities Hospital

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PROJECT DESCRIPTION

Nationally, pulmonary embolism (PE) resulting from deep vein thrombosis (DVT) is a leading cause of death for hospitalized patients. Many of these deaths can be prevented with the appropriate pharmacological prophylactic measures. Still, the national rate of appropriate VTE prophylaxis approaches only 40%.

South Nassau Communities Hospital reviewed its VTE incidence and compliance with existing protocols. Standardizing protocols, simplifying the protocol order set, designing the order set's integration into the clinician workflow, and presenting mandatory physician education regarding the problems associated with hospital-acquired VTE were all key to the project's success. The project began during 2008 and new protocols were fully implemented by July 2009.

OUTCOMES

- Before implementation, South Nassau Communities Hospital's rate of hospital-acquired VTE was 0.43 for 1,000 patient days. A rate of 0.35 for 1,000 patient days was achieved in the first six months following implementation of this initiative.

LESSONS LEARNED

- "The simpler, the better."
- To be effective, hospital administration, clinical leadership, and medical staff must be aligned and committed to the improvement initiative.
- Physician compliance increases with ongoing education and awareness programs for medical staff.

- The percentage of appropriate prophylaxis was initially 66%, increasing to 86% in the six months following implementation.
- The initiative increased physician awareness of the need for VTE prophylaxis in the majority of hospitalized patients as evidenced by a 30% increase in the percentage of patients receiving appropriate VTE prophylaxis, and an 18.6% decline in the incidence of hospital-acquired VTE.



Standardization to Prevent Venous Thromboembolism
Stony Brook University Medical Center

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PROJECT DESCRIPTION

Stony Brook University Medical Center’s strategic plan focuses on becoming a high reliability organization (HRO). Patient safety is paramount and key hospital work systems are deployed systematically for failure-free process outcomes. Part of the strategic tactics associated with becoming an HRO is a focus on performance improvement priorities that support organizational goals relating to quality improvement and patient safety. As a

LESSONS LEARNED

- Utilizing electronic solutions hardwire systematic processes to ensure compliance.
- Utilizing a “hard stop” helps control the process to ensure systematic deployment.
- An organization-wide initiative requires consensus. Key patient requirements and practitioner needs must be addressed to maximize patient care and outcomes.

result, the hospital identified an opportunity to improve and standardize deep vein thrombosis (DVT) risk assessment and orders for prophylaxis to improve patient safety.

To standardize assessments relating to DVT prophylaxis, an electronic solution was established to systematically deploy a process based on National Quality Forum recommendations, Joint Commission standards, and American College of Chest Physicians guidelines. Through this electronic solution, adult patients hospital-wide (excluding psychiatry) are assessed within 24 hours of admission and appropriate orders are established.

OUTCOMES

Since initiation of the electronic solution:

- VTE events decreased from a rate of .49 per 1,000 days in February 2009, to .24 per 1,000 patient days in December 2009.
- Before implementation in June 2009, the 24-hour assessment rate was 64%; post-implementation (November 2009), this percentage grew to 91.2%.
- More than 90% of patients are assessed on admission.



OPERATIONS

Operating Room Inventory Control Improvement Project

Albany Memorial Hospital and Samaritan Hospital

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PROJECT DESCRIPTION

Finding the value of their inventory exceeded \$1 million, Albany Memorial Hospital and Samaritan Hospital discovered the financial statement valuation was incorrect for several months because physical counts were not being performed on time. In addition, the inventory valuation

process was very labor-intensive, increasing the risk of error. The hospitals decided to standardize the process and to use existing information technology to make the process more efficient.

The hospitals participated in a week-long workshop on LEAN Kaizen, a rapid improvement process that relies on cross-functional teams to achieve goals. An initial meeting was held to define team goals and objectives. After mapping every step of the current process, an “ideal state” was described, and barriers to moving from the current state to the ideal state were identified. The team then conducted a root-cause analysis and developed solutions, which were tested and implemented.

LESSONS LEARNED

- A process owner must be identified at the start of the process, along with a senior team “champion.”
- Design the new process with input from frontline staff to help ensure buy-in.
- Ensure that all staff understand how their piece of the process fits into the whole.

The operating room inventory LEAN Kaizen team consisted of the operating room director and frontline materials management, finance, and information technology staff. The team used LEAN Kaizen tools and processes to identify waste, standardize and structure every activity, and experiment with small tests of change. The focus throughout was on the process, not the people involved.

OUTCOMES

- The team standardized receipt of items by materials management staff at both hospitals.
- Organized storage areas were established with consistent color-coding and labeling.
- One hospital began a daily review of upcoming operating room cases to ensure adequate inventory.
- Preference cards were updated for accuracy, checked daily for each case, and edited if necessary.



Patient Forum Yields Performance Improvement Opportunities

Bassett Healthcare Network/Bassett Medical Center

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PROJECT DESCRIPTION

To gain a better understanding of the factors driving patient perception of care and satisfaction scores, Bassett Medical Center instituted patient focus groups in 2008. Patients asked to participate in the monthly focus groups are selected randomly from a list of surgical and medical inpatients admitted during the previous month. During the monthly focus groups sessions, patients share their experiences with key

hospital personnel, including chief physicians, hospitalists, nursing leaders, administrators, and the director of service excellence. These one-hour sessions are spent listening to and asking questions of patients as they describe “the good and bad” of their recent experience. The hospital team shared what they have learned with colleagues and specific items identified for investigation, dialogue, and action are brought to the hospital’s acute care committee. In addition, with the patients’ permission, sessions are videotaped and vignettes of the patients’ experiences go to the performance improvement committee of the board of trustees each quarter for review, as well as to the various inpatient units during staff meetings. It is a powerful way for the board and staff to hear the voice of the patient.

LESSONS LEARNED

- Patients feel empowered and proud when they are helping to make a difference in health care.
- Sharing video excerpts of patients with the board has been an extremely powerful tool for change.
- Focus groups help better align administration and physicians around a common focus on patients.

OUTCOMES

- Bassett received 52% fewer inpatient complaints in 2009, compared to 2008.
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) ratings related to doctor communication improved 14%.
- HCAHPS ratings on medication communication improved 12%.
- The hospital’s patient surveys reveal a continued positive trend in resolving issues identified in patient focus groups.

Preventing Significant Events Through a Culture of Safety *Catholic Health System*

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PROJECT DESCRIPTION

In 2007, Catholic Health System initiated a cultural change to transform its focus on patient safety. The first step was to assess the current culture through a multidisciplinary survey, which included board members, senior leaders, physicians, and associates. In 2008, the results of this survey were used for evaluation and planning, followed by system-wide education and training.

LESSONS LEARNED

- Actual patient safety examples are most effective when educating physicians and staff.
- Board-level participation is essential and should be shared with staff to highlight importance of safety initiatives.
- Patient safety is everyone’s responsibility.

The key to this cultural transformation was transparency—letting everyone in the organization know when a harm event occurred, why it happened, and how to prevent it from happening again. This means looking at patient safety system-wide from a global perspective, rather than by individual sites. A system director of patient safety and significant event manager were added to the performance improvement team to elevate harm events and root-cause analysis from the site level to the system level. Education and follow-up are shared across the system so individual sites could learn from one another and develop a uniform “culture of safety.” Catholic Health System publishes Patient Safety Alert to help facilitate inter-facility, system-wide awareness.

OUTCOMES

- Significant events (death, near death, or permanent loss of function) and potentially significant events (with potential to cause death, a cardiac arrest, or permanent loss of function) decreased 48%.
- Daily use of error reduction tools among staff improved 194%.
- Staff willingness to report an event increased 9.5%.



Help From Above: Overcoming Barriers of Geographic Size and Location

Claxton-Hepburn Medical Center

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PROJECT DESCRIPTION

Claxton-Hepburn Medical Center's story and vision is about "paying back." Despite its rural location and small size, the hospital maximized available resources to meet the needs of patients and families in regard to organ donation. Claxton-Hepburn is able to provide support and guidance to families involved in making end-of-life decisions, the last of which involves organ donation. The organization "hard-wired"

LESSONS LEARNED

- Geographic size and location does not preclude organ or tissue recovery, appropriate allocation, or successful transplant.
- Appropriate utilization of out-of-area resources can greatly enhance local services provided.
- A hospital culture that is open and informed about organ donation facilitates processes and fosters success in this area.

processes that enable staff to successfully proceed to donation in cases of cardiac death, brain death, and most recently, donation after cardiac death.

OUTCOMES

- Claxton-Hepburn developed a hospital culture that supports evidence-based end-of-life care and recognizes donation as an important element of that care.
- The overall hospital referral rate for organ donation was between 99% and 100% for the past three years, and there has been a high referral-to-acceptance conversion rate in cases of brain death.



Improving Physician Compliance with Quality Measures: The Carrot or Stick?

Cortland Regional Medical Center

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PROJECT DESCRIPTION

Physician compliance with reporting quality measures can be a challenge, particularly in a non-employed physician practice model. Cortland Regional Medical Center launched this initiative to offer physicians positive reinforcement for compliance with two quality measures: verbal order authentication and unacceptable abbreviations.

LESSONS LEARNED

- Physicians respond better to positive reinforcement than punitive measures.
- Physicians are competitive by nature and enjoy competing with their peers.
- Publishing data can leverage peer pressure to improve results.

A nine-member medical staff “World Series” was created. Each member received a “home run” for completing verbal orders and achieving zero unacceptable abbreviations per month. Charts were randomly chosen and evaluated for compliance. Results were posted each month outside the physicians’ lounge, with the winning team receiving a complimentary dinner. The series lasted four months.

OUTCOMES

- Compliance with avoiding unacceptable abbreviations rose from 60% to 100%.
- Compliance with verbal order authentication increased from 40% to 75%.
- Compliance was maintained, even after the World Series ended.



Enhancing a Cardiac Rehabilitation Program: Safety, Continuity, and Convenience for Patients
Delaware Valley Hospital

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PROJECT DESCRIPTION

Recognizing opportunities for improvement, Delaware Valley Hospital made plans to move its Phase II cardiac rehabilitation program from the hospital’s cardiopulmonary department to the physical rehabilitation building located on the hospital campus. With the physical therapist housed in another building, the cardiac rehabili-

LESSONS LEARNED

- Moving a program must be carefully planned in advance to ensure seamless patient care.
- Creating a more efficient process has fostered a more comfortable atmosphere for both the patients and staff.

tation nurse was alone with patients while they exercised—this was a concern should the nurse have questions or issues regarding the exercise program or equipment.

Telephone coverage for questions or appointments from patients or providers was only available during program hours. By moving the program, telephone calls are now answered immediately by physical rehabilitation staff members, who are available Monday through Friday during regular business hours. Communication between the multidisciplinary team (cardiac rehabilitation nurse, physical therapist, and dietician) was time consuming and slow. Working under one roof facilitates timely communication between the team members. In addition, patients on their initial visit no longer need to visit three different sites within the hospital campus.

OUTCOMES

- The new configuration provides an interactive, team-based approach.
- More equipment options are available to patients.
- Telephone calls are answered and responded to promptly.
- Peer support and motivation are encouraged by combining Phase II cardiac rehabilitation program patients with Phase III (maintenance) program patients.
- The facility achieved increased patient satisfaction, as noted through positive verbal patient feedback.



Controlling Operating Room Supply Chain Expenses

Ellis Medicine

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PROJECT DESCRIPTION

When Ellis Medicine consolidated three hospitals under order of the Commission on Health Care Facilities in the 21st Century, substantial differences were identified in the perioperative and operating room procedures of the different institutions. A team was formed with the goal of reducing costs by at least \$125,000, while maintaining existing levels of quality. The team focused on standardizing materials and procedures, improving operational efficiency, and improving contracting.

The team recognized the importance of using effective change management and communication techniques to achieve necessary participation from physicians, staff on the three campuses, and senior management. This resulted in two project initiatives:

- A materials management component focused on reprocessing, custom packs, product standardization, and better contract pricing.
- An operational efficiency component worked to enhance communication, expand the post-anesthesia care unit (PACU), and improve information technology.

LESSONS LEARNED

- Communication is vital for success; particularly involving physicians and senior management.
- Persistence is necessary; all involved must stay focused on the project goal.
- A global operational view not only contributes to the specific project, but helps identify savings opportunities throughout the hospital.

OUTCOMES

- The team achieved its financial savings target within four months, and accomplished almost ten times the savings goal after seven months.
- The financial savings were achieved with no reductions to the quality of patient care; national recognition of the hospital's quality of care continued.



Transforming a Culture by Engaging the Entire Organization

Faxton-St. Luke's Healthcare

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PROJECT DESCRIPTION

In December 2004, Faxton-St. Luke's Healthcare's two hospitals merged to become one health care center. With the process of consolidation completed, leadership focused on the challenge of building relationships and improving communication. The leadership team sought to create a caring and healing environment where staff would find meaning and joy in their work, and where patients would want to receive care. The goal was to increase staff involvement

LESSONS LEARNED

- Taking time to build relationships across the entire organization produces positive outcomes.
- Engaging the entire workforce empowers employees to create positive change.
- Through this cultural transformation, staff from all departments recognize the importance of their role and how it contributes to the care of patients and their families.

in decision making, improve processes of care, and promote cooperation to create a positive patient experience.

The chief nursing officer searched for a model that would foster staff participation, build interpersonal relationships, and keep patients and their families at the center of all that the organization does. The Relationship-Based Care (RBC) model was chosen and the journey of cultural transformation began in 2005. Four years into this journey, the organization is beginning to approach the “tipping point” toward transformation.

OUTCOMES

- Employee satisfaction improved from the 14th percentile in 2004 to the 60th percentile in 2009.
- There has been a significant increase in employee compliments and a decrease in employee complaints.
- Staff are rewarded and recognized for good performance.
- Departments within the organization work well together.
- Staff feel involved in changes made within departments.



**Community Drug Information Center
Kingsbrook Jewish Medical Center**

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PROJECT DESCRIPTION

With a plethora of health information available on the Internet and little guidance, consumers need a trusted source for unbiased information about medication. The hospital-based Community Drug Information Center provides services

to patients as well as health care professionals. A full-time clinical pharmacist responds to drug inquiries in-person, by e-mail, or by mail regarding drug dosing, adverse drug reactions, and appropriate therapies for specific patients. This timely and appropriate medication advice helps prevent medication errors, adverse drug events, and unnecessary emergency room and physician office visits. Other clinical services provided by the pharmacist include maintaining an electronic database of drug inquiries, conducting activities with hospital staff, preparing drug monographs for the pharmacy and therapeutic committee, disseminating drug alerts to the medical staff on pertinent medication-related issues (e.g., dosing changes, drug recalls, new allergy or side effect warnings), providing continuing education to health care professionals on relevant drug topics, and overseeing the reporting, detecting, and managing of medication errors and adverse drug events.

LESSONS LEARNED

- Health care practitioner questions mainly involve drug dosing related to high-risk medications (e.g., heparin, antineoplastic, anticoagulants).
- There is a need to tap into pediatric drug information resources and provide information to health care practitioners.

OUTCOMES

- The Community Drug Information Center provides between 1,000 and 2,000 interventions per year.
- This program has demonstrated significant savings per medication intervention.
- Circulation of timely “drug alert” publications serves a vital role in informing staff of immediate changes that may affect daily practice.



Improving Inpatient Satisfaction Through a Patient-Centered Guest Ambassador Program

The Kingston Hospital

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PROJECT DESCRIPTION

Kingston Hospital's Guest Ambassador Program was implemented for patients and families as a pilot program on the hospital's Telemetry Unit in December 2008. The program initially included the vice president of support services, director of environmental services, a charge nurse, and clinical dietician. It expanded to include ten clinical and non-clinical staff members who were assigned two patient rooms.

Program education and a verbal contract were used to assure staff commitment to be "Guest Ambassadors." Beginning in March 2009, every patient on the telemetry unit was visited daily by his/her assigned Guest Ambassador, who not only assured that the patient's medical needs were attended to promptly, but also acted as a personal concierge for patients and families. Since implementing the Guest Ambassador Program, within one quarter patient satisfaction scores increased in all seven Hospital Consumer Assessment of Health Care Providers and Systems (HCAHPS) Dimensions for the Telemetry Unit. Ancillary Support Services demonstrated satisfaction scores greater than 90% in courtesy/

LESSONS LEARNED

- Gaining a patient's trust and confidence takes time.
- Patients generally are pleased with the care they receive, as the majority of their concerns are resolved immediately.
- Daily visits improve patients' perception of the care they receive.

helpfulness. The hospital staff have expressed increased satisfaction and morale. The hospital continues to expand the program with the expectation of taking it hospital-wide by December 2010.

OUTCOMES

From the second to third quarters of 2009:

- patient satisfaction scores in all seven HCAHPS dimensions improved;
- patient surveys showed improvement for all three "communication with nurses" questions; and
- patient satisfaction improved in five out of six of the ancillary departments for "courtesy/helpfulness."



Improving Patient Flow at a Non-Academic Hospital

Mercy Medical Center

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PROJECT DESCRIPTION

Emergency Department (ED) admitted patients used to wait an average of 24 hours for an inpatient bed at Mercy Medical Center. The functional capacity of the ED for "treat and release" patients was impaired, post-anesthesia recovery room flow was adversely affected, and patient and staff satisfaction suffered. Mercy Medical Center began an organization-wide root-cause analysis to develop an improvement strategy. It revealed physician practice patterns for complex geriatric patients were associated with a mean length of stay (LOS) in excess of ten days, lifting the hospital's overall LOS to 7.6 days. These practice patterns far exceeded national norms.

The solution was to develop a "geriatric care best practice program" and a unique contractual

arrangement with physicians. The contract requires physicians who treat skilled nursing facility patients to use standard order sets, systematic monitoring, and feedback on care outcomes. Patients experienced dramatic improvements in LOS, ED wait time, and nursing-sensitive indicators like pressure ulcers. ED and inpatient satisfaction scores skyrocketed; these achievements are sustained to this day.

LESSONS LEARNED

- Efficient inpatient LOS is associated with higher patient satisfaction.
- Creating efficiencies through implementing best practices creates capacity throughout the hospital, including the critical care setting.
- Hospitalist services can support implementation of new initiatives and the care of complex skilled nursing facility patients.

OUTCOMES

- The organization achieved significant improvement (16-hour reduction) in mean ED wait time for an inpatient bed between 2007 and 2009.
- Hospital patient satisfaction improved 10% to 20% in every category.
- Medicare LOS was reduced 20% and overall hospital LOS decreased nearly 15%.



The Community Health and Acute Medical Performance Improvement Organizational Network
Montefiore Medical Center

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PROJECT DESCRIPTION

The Community Health and Acute Medical Performance Improvement Organizational

Network (CHAMPION) initiative is Montefiore Medical Center’s multi-stakeholder, integrated delivery system pay-for-performance program. Its primary objective is to improve care for prevalent community conditions, including diabetes mellitus, hypertension, cardiovascular disease, cardiovascular disease risk factors, common acute medical conditions, and surgical procedures. The initiative created provider

financial incentives for performance on 66 inpatient and outpatient measures. Incentivized care settings included nine academic departments across two hospitals and 140 ambulatory care providers across 22 practice sites that together provide care to 220,000 adults.

Data for two measurement periods were collected from medical records and administrative sources, and were externally audited. Incentive monies were derived from a pool consisting of organizational, Department of Health, and health plan contributions. Individualized performance reports and corresponding incentive payments were generated for inpatient departments and outpatient providers.

OUTCOMES

- All nine inpatient departments and 73% of the 107 outpatient providers who participated

LESSONS LEARNED

- Pay-for-performance programs can address health care disparities and improve quality of care for prevalent conditions in under-served communities.
- Providers can play a lead role in designing robust pay-for-performance programs that engage payers as stakeholders.
- Inclusive, transparent methods can promote provider engagement and improvement across performance domains.

in both years of the program improved their performance.

- The mean performance score for all inpatient departments and outpatient providers increased significantly, from 75.9% to 79.2%.
- Scores improved for 70% of the 66 program measures.



Improved Efficiency of Platelet Utilization Through Leadership and Cultural Transformation *Nassau University Medical Center*

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PROJECT DESCRIPTION

During a Nassau University Medical Center leadership-driven “town hall meeting,” frontline staff raised the issue of unused, expired platelet units. Using the Plan-Do-Study-Act (PDSA) approach, the blood bank department identified an opportunity for improving knowledge about platelet utilization. Before implementing change, 28.4% of platelet units became outdated. Blood bank staff initiated close observation and expert consultation during requests for platelets. The intention was to identify if modification of behavior and culture would result in improvement in platelet utilization. Monitoring over the ensuing 332 days revealed a 6.3% expiration rate for platelet units.

LESSONS LEARNED

- Leadership involvement is crucial for performance improvement.
- Managerial understanding of other departments’ processes is essential.
- Close observation and consultation by expert staff can modify behavior.

OUTCOMES

- Through behavior modification, 64.5 units of platelets were saved during a 332-day period, post-intervention.
- This decrease represents an annual savings of 70.9 platelet units and \$50,631.



Formal Nurse Preceptor Education Program *Nathan Littauer Hospital and Nursing Home*

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PROJECT DESCRIPTION

Nathan Littauer Hospital’s formal preceptor education program is modeled after the Vermont Nurses in Partnership preceptor program. This evidence-based curriculum was promoted to New York State’s hospitals as a collaborative effort by the New York State Nurses Association (NYSNA) to help hospitals retain registered nurses.

LESSONS LEARNED

- Formalized training is effective in improving retention of new professional registered nurses.
- Preceptors express satisfaction with their training and feel better prepared to teach.
- New staff, including graduate nurses, repeatedly commented positively on the orientation process.

In March 2009, two registered nurses attended comprehensive training sessions in preceptor development at NYSNA. Information gathered from these sessions was translated into a two-day instructional program offered to 14 registered nurses at Nathan Littauer Hospital. Employees selected by unit managers were

formally educated in subjects such as competency assessment, adult teaching, learning theories, conflict management, and communication. The new preceptors were strongly supported by the hospital's nursing management staff and were given appropriate patient assignments to allow time to precept new employees. With professional education and management support, the preceptors are better prepared to interact with new staff in a more qualified manner, which facilitates a smoother transition into the workplace for new employees.

OUTCOMES

- The number of new registered nurses who resigned during the orientation process declined.
- This program influenced all unit managers to embrace the theoretical foundations of the program and support staff precepting efforts.
- Since the program began in June 2009, vacancies for full- and part-time RNs decreased from 5.70 in June 2009 to zero on February 28, 2010.



Improving Core Measure Compliance Through Education, Standardization, and Accountability

Orange Regional Medical Center

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PROJECT DESCRIPTION

Orange Regional Medical Center launched a one-year project to increase the number of reported core measures at or above 90% compliance through a collaborative process. Developing grassroots awareness with accountability was the first hurdle. The team set forth the following:

- a process rooted in accountability in which a standardized checklist is reviewed at change of shift, patient hand-offs between departments, and at discharge;
- quality staff prepare a list of "core measure" patients each day that is distributed to the nursing units each morning for review by nurse leaders;
- quality resource nurses perform daily rounds to review the standardized checklist, engage in discussion with nurses, e-mail follow-up with nurse leaders, and e-mail or telephone contact with physicians;
- upon patient discharge, the primary registered nurse reviews the standardized checklist to assure compliance and must obtain a validation signature from the nursing director or supervisor before the patient leaves.

LESSONS LEARNED

- Staff want to provide the best care possible to patients. A support system that includes continuous, one-on-one reinforcement and education on current best practice standards is vital in providing the best possible care.
- Support and active engagement from executive leadership is essential to success.
- Continually improve processes and stretch the boundaries.

OUTCOMES

The fourth quarter of 2008 indicator compliance rate was 58%, and improved to 92% in the fourth quarter of 2009.



Endoscopy Flow Initiative Oswego Hospital

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PROJECT DESCRIPTION

Oswego Hospital developed this initiative to address an increase in endoscopy volume and lengthy scheduling wait times. A key challenge was to identify ways to improve patient “flow” in the facility while ensuring patient safety. Using a collaborative approach, a 12-week study revealed several opportunities for improvement including registration delays, early arrivals, inconsistent bed availability, prolonged patient stays related to sedatives, staffing issues, and splitting services between endoscopy and the operating room.

The following procedure and process changes were implemented:

- staff education on the registration process;
- engagement of and collaboration with physician office staff to confirm schedules and communicate appropriate arrival times to patients;

LESSONS LEARNED

- There is great value in process ownership, stakeholder engagement, and including all key players at the beginning of the initiative.
- Recognize and address the potential impact of changes on other departments and maintain communications with other service departments and specialties to ensure a clear understanding and support of the initiative.
- Recognize that achieving desired goals is the primary objective, not setting an end date.

- ensure a designated number of beds are available each day in the unit for endoscopy patients;
- using Fentanyl instead of Demerol (causes less nausea, drowsiness, and hypotension; and returns the patient to a pre-sedation state almost immediately post-procedure);
- anesthesia providers in the endoscopy suite provide support; and
- provision of dedicated support staff to transport discharged patients.

OUTCOMES

Successes included improved patient satisfaction, a 10% increase in schedule volume, a 10% decrease in patient lead time (time between referral to available opening in schedule), and decreased length of stay.



Journey to Improved Quality Outcomes

Our Lady of Lourdes Memorial Hospital

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PROJECT DESCRIPTION

Our Lady of Lourdes Memorial Hospital examined its patient outcomes, committee structures, and leadership model to plan for the future. The hospital identified multiple opportunities for improvement.

Committees existed, but without ownership, accountability, and communication, and, as a result, outcomes were unacceptable. Hospital charge nurses on the units were responsible for

LESSONS LEARNED

- Listen to the voice of nurses.
- Encourage decision making through unit-based practice councils.
- When staff take ownership of quality data and patient care, better outcomes are achieved.

staffing, scheduling, disciplinary issues, and a full assignment of patients, resulting in inconsistent charge nurse practices, “burnout,” and turnover.

To address these issues, the hospital developed a strategy to ensure open and ongoing communication with staff, charge nurses, and committees. The leadership model was transformed, a new committee structure established, and unit-based practice councils were developed.

OUTCOMES

Highlights include:

- pressure ulcers decreased 40%;
- falls decreased 39%;
- patient satisfaction, as indicated by the Net Promoter Score, increased from 67 to 72; and
- nursing satisfaction exceeds the national mean and increased in all areas, including nurse-nurse interaction, decision making, nurse-physician interaction, autonomy, professional status, and job enjoyment.



**Reducing Mis-labeled Specimens
Samaritan Medical Center**

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PROJECT DESCRIPTION

Reducing mis-labeled specimens was a key patient safety goal for Samaritan Medical Center. Using process improvement techniques and LEAN principles, laboratory

LESSONS LEARNED

- **Involve staff; they know the process. Hold them accountable for the changes made.**
- **Share data frequently with all staff and make data-driven decisions.**
- **Celebrate successes.**

staff were engaged to develop solutions to achieve this process improvement goal.

Samaritan Medical Center used the Plan-Do-Study-Act (PDSA) performance improvement model. Staff participated in team meetings, generating ideas, testing recommendations, and collecting data. These led to many changes to ensure procedures were written and followed clearly and correctly. Data were shared with staff on a regular basis. Celebrating success was an important part of the process as well.

OUTCOMES

Samaritan Medical Center realized a 150% decrease in mislabeled specimens from 2008 to 2009. The number of mislabeled specimens was 20 in 2008. The number of mislabeled specimens was eight in 2009.



**A Nursing Strategic Plan Built Upon a Foundation of Patient Safety
Southampton Hospital**

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PROJECT DESCRIPTION

In 2006, Southampton Hospital’s department of nursing conducted a needs assessment focusing on the quality of patient outcomes, staff recruitment and retention, and patient safety. Part of the assessment included distribution of the Agency Healthcare Research and Quality (AHRQ) Hospital Safety Survey to staff. Respondents rated “Overall Perception of Safety” at 33%, “Communication Openness” at 49%, and “Patient Handoff” safety at 28%.

The goal was to create a strategic nursing plan focused on leadership and patient safety. The

organization implemented numerous processes to promote transparency with key stakeholders, including chief executive officer/ chief nursing officer patient rounds, real-time coaching, and an emphasis on the nursing code of ethics and accountability. A recruitment and retention plan was developed, quality measures

and benchmarks were established, and communication was enhanced through a redesign of the rapid response team debriefing, improvements in shift-to-shift reports, and inclusion of patients in the daily plan of care.

OUTCOMES

- “Overall Perception of Safety” increased 40%.
- “Open Communication” increased 24%.
- “Patient Handoff” safety increased 32%.
- Registered nurse vacancies decreased (from 15.2 in 2007, to 5.1 in 2009).
- The average monthly turnover rate decreased (from 2.92 to 1).
- Hours per patient day increased (from 4.8 to 6.2).

LESSONS LEARNED

- Embrace negative outcomes as they are drivers for change.
- Quality and patient safety must be intentional and planned.
- While each individual is accountable for providing patients with safe care, the system or process provides the framework.

Improving Pain Management in the Limited English-Proficient Population

Southside Hospital/North Shore-Long Island Jewish Health System

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PROJECT DESCRIPTION

In 2004, Southside Hospital’s Nursing Performance improvement Department began analyzing pain management performance data for limited English-proficient (LEP) patients. In addition to chart review, an initial analysis of Press Ganey scores suggested there was a strong negative relationship between nursing staff’s subjective scores on how well they managed pain and patients’ subjective scores on how well they believed their pain was managed during their hospitalization.

Consequently, interviews with staff about pain management suggested language barriers often prevented them from doing a better job for LEP patients. As a result, three initiatives were implemented in the perinatal areas:

- better use of interpreter services;
- physicians’ orders for patient-controlled analgesia (PCA) or round-the-clock (RTC) administration of analgesia; and

LESSONS LEARNED

- Attentiveness to details for one group (in this case, LEP patients) may improve outcomes for all patients.
- Attentiveness to significant variables such as culture may improve patient outcomes in areas such as pain management.
- Raising staff awareness of LEP issues may increase compliance with monitoring patient outcomes.

- provision of education and awareness training for nursing staff and physicians with regard to pain management in a diverse community.

OUTCOMES

This program achieved the following results:

- a significant increase in patient satisfaction scores for pain management among English- and Spanish-speaking patients between 2005 and 2007; and
- a significant increase in patient satisfaction scores for pain for all patients between 2005 and 2007, in all service areas.



Decreasing Patient Transfer Time from Floor Beds to Critical Care Beds Staten Island University Hospital

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PROJECT DESCRIPTION

Staten Island University Hospital assembled a ten-member, multidisciplinary team to drive a performance improvement initiative to evaluate, improve, and sustain an increase in patient “throughput” by decreasing transfer time from floor beds to critical care beds. The team identified opportunities to improve process flow and communications, and implement a standardized process.

LESSONS LEARNED

- Culture change requires the inclusion, buy-in, and involvement of all team members.
- Technical, cultural, and political barriers can be overcome.
- It is necessary to standardize the process for transfer orders, and to use electronic bed tracking technology.

Transfer delays from floor to critical care beds caused dissatisfaction among Staten Island University Hospital’s physicians, nurses, staff, and patients. Data indicated that patient transfer times averaged 3½ hours to a maximum of almost seven hours. In addition to delaying patient treatment, delayed transfers affected medical residents, who were required to stay with patients until they were transferred to a critical care bed. The team standardized the process for physician transfer orders and installed “tele-tracking” in all critical care units.

OUTCOMES

- Pre-intervention, floor-to-critical-care transfer times averaged 214 minutes, with a 75.5% success rate.
- After one month, transfer times decreased 57.0%, averaging 92 minutes, with a 98.6% success rate.
- Five months post-intervention, transfer times fell an additional 12%, with a success rate of 97.7%.



Increasing Awareness of the Need for High-Quality Palliative and End-of-Life Care St. Mary’s Hospital

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PROJECT DESCRIPTION

St. Mary’s Hospital recognizes that most individuals would prefer to die at home; however, statistics indicate that nearly 59% of people die in a hospital. In New York State that figure is projected to be as high as 70% in recent years. The goal of St. Mary’s Hospital’s palliative care program is to ensure excellent end-of-life care and improve the quality of life for all patients living with chronic diseases. The program strives to in-

crease referrals to palliative care and the percentage of patients discharged to hospice. Ultimately, this program strives to nurture a model health care community comprised of inspired, compassionate caregivers who consistently consider and tend to patients' and families' physical, emotional, and spiritual wishes, needs, and concerns. Through model behavior, vital presence, empowering knowledge, and trusted partnerships, the program is positively impacting delivery of care to all patients.

LESSONS LEARNED

- An interdisciplinary, inter-agency collaboration approach is critical to program success.
- In addition to patients and families, physicians and medical staff are customers too—their buy-in is equally imperative.
- Emotional and spiritual care correlate with patient satisfaction scores; compassion, respectful care, communication, empowerment, and responsiveness are the underpinnings of a successful palliative care program.

OUTCOMES

First year palliative care program results (April 2006 - March 2007):

- 299 referrals;
- 45% referral rate by physicians; and
- 0.6% of total hospital discharges to hospice.

Post-palliative care program results (April 2008 - March 2009):

- 515 referrals (a 72% increase);
- 98% referral rate by physicians (a 118% increase);
- 2.4% of total hospital discharges to hospice (a 300% increase); and
- 2.66% raw mortality rate (a 27.9% reduction).

Organization-Wide Use of FMEA to Drive High Reliability and Safety Stony Brook University Hospital

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PROJECT DESCRIPTION

Stony Brook University Hospital's chief executive officer established becoming a high reliability organization (HRO) as a key strategic objective. One of the primary tools in this effort, Failure Mode and Effect Analyses (FMEA), enables staff to proactively study high-risk processes to identify potential failure modes, and assess the severity and frequency of failure

modes using standardized scales. By calculating a risk priority number, a team may identify areas of significant risk that require risk reduction strategies to improve performance and safety. To ensure success, these interventions are measurable and focus on systematic process deployment.

Every leader, department head, and nurse manager was provided FMEA training and tools. They were required to select high-risk processes and apply the FMEA methodology to identify and implement risk-reduction strategies, and measure the effectiveness of interventions.

Continual implementation of multiple, simultaneous FMEAs allowed the organization to quickly and systematically deploy key processes that will reduce error while improving safety.

LESSONS LEARNED

- The FMEA methodology encourages consensus building to focus on evidence-based strategies geared toward achieving higher reliability.
- Conducting proactive risk assessments creates a transparent and blameless environment.
- FMEAs should be applied to high-risk and newly designed processes to identify potential pitfalls and process failures.

OUTCOMES

- The ratio of falls to falls with injury decreased from 34% to 15%.
- Employee annual physical assessment rates improved from 74% to 97%.
- The number of quarterly safety incident reports generated by bedside nurses increased from ten to 25 on a unit.
- Endotracheal intubation by paramedics relating to medication and dosing improved from 82% to 100%.



**Quality of Care Web Site:
Transparency of Data
Upstate University Hospital**

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PROJECT DESCRIPTION

Upstate University Hospital developed a quality of care Web site to provide the community with a transparent and easily understood source of hospital quality data. Key aspects of this project included:

- multidisciplinary approach to plan, design, and develop the Web site;
- commitment to proactively share key quality and safety measures with the community;
- the Web site contains a Frequently Asked Questions section, quality of care “snap-

LESSONS LEARNED

- The design and development of a quality data Web site must be multidisciplinary.
- Commit resources to the project as development, deployment, and maintenance are labor-intensive.
- Ensure the public can find the Web site easily from the hospital home page.

shots” that highlight specific quality initiatives, and up-to-date data than can be found on other public report card Web sites; and

- measures focused on clinical quality, patient safety, and patient satisfaction.

For each quality measure:

- the latest data are compared to appropriate benchmarks;
- an explanation is provided to help consumers understand what each measure means; and
- a statement is included to explain why each measure is important to consumers.

OUTCOMES

- The hospital is the first in the region to publish a Web site dedicated to communicating quality measures to the community.
- The Web site highlights multiple quality initiatives, and is consumer-friendly and easy to navigate.



**Central Service Nursing Supply Cart Revision
WCA Hospital**

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PROJECT DESCRIPTION

To be efficient and effective in patient care, appropriate supplies and equipment must be readily available to hospital staff. WCA Hospital identified inefficiencies with central service

LESSONS LEARNED

- Education and reinforcement of important information is key.
- Implementation was more efficient when completed in stages.
- There will always be resistance to change.

supply carts on every nursing unit. Supply carts were dysfunctional, overstocked, not user-friendly, and compliance with charging supplies was poor. This led to inconsistent availability of needed supplies. WCA Hospital developed an initiative to standardize equipment, supplies, and their location on supply carts. Data were collected and changes were made, including color-coded categories such as intravenous, urinary/output, personal patient care, dressing, respiratory/vital signs, specimen collection, ulcer prevention, and miscellaneous.

Items for each color-coded category are listed alphabetically and posted near their respective area on the cart. Brightly colored posters detailing the color-coded categories are located in the supply cart area.

OUTCOMES

- Charging compliance increased 5.5%.
- Efficiency of cart utilization and replenishing increased.
- There is greater availability of nursing supplies as evidenced by decreased calls for additional supplies.
- This project led to increased communication between departments.
- The process for rotation of patient care supply items was improved.



Improving Correct Patient Selection Prior to Order Entry Within an Electronic System *Winthrop-University Hospital*

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PROJECT DESCRIPTION

Clinical information systems address many of the safety issues identified with paper processes; however, this technology also creates new challenges and patient safety concerns. When Winthrop-University Hospital implemented computerized physician order entry (CPOE) in July 2006, it also addressed the patient identification policy.

Despite careful implementation, there was a rise in wrong patient selection. Investigations revealed the ease with which a provider could unintentionally select the wrong patient, due to distraction or keystroke errors. The verification screen was not enough; providers became “immune” to the screen and went to the “OK” button without verifying the information. To address this, a verification screen was created that uses visual cues and requires active entry of information. This forces the provider to pause and think before proceeding. The active input portion of the screen is moved to different areas every three months to promote visual stimulation and prevent task-oriented behavior. The results of this change were dramatic.

OUTCOMES

In 2009, through the electronic reporting system and verbal reports, the hospital learned of 37 instances of the wrong patient being selected. After deploying the custom patient verification screen, only one incident of wrong patient selection has occurred.

LESSONS LEARNED

- Passive acknowledgment of data becomes “just another screen” for the user to get through.
- Adding active participation forces the user to stop and think before proceeding, reducing the “robotic” effect of point-and-click technology.
- The process must be changed every few months to keep it fresh.

PATIENT SAFETY—FALLS

Improve Patient Safety and Satisfaction Using Restraint Reduction Strategies

Franklin Hospital

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PROJECT DESCRIPTION

Franklin Hospital used the Plan-Do-Study-Act (PDSA) methodology to reduce use of restraints by 10% in 2009. The initiative included adherence to internal and external standards, increased use of effective alternatives to restraint use, and documentation systems. During the “do” phase, a multi-disciplinary committee focused on staff education, documentation review, and monitoring.

The team analyzed data comparing internal changes over time and against external benchmarks. Gaps were identified for further quality improvement, and continuous monitoring of patterns, trends, and best practices was initiated. This enabled the hospital to provide data to the staff, continue to identify exceptions and barriers, make ongoing improvements, and ultimately measure success.

OUTCOMES

- Restraint use decreased 22%, while the hospital increased the use and availability of alternatives to restraint.

LESSONS LEARNED

- Staff no longer use restraint as a first method for dealing with difficult patient behavior.
- Staff are aware of alternatives to restraint that are equally effective, but more respectful and dignified.
- The night shift falls/restraint committee increased awareness of alternatives and empowered staff to evaluate appropriate use of restraints to address the higher use of restraints on evening and night shifts.

- The hospital created a night shift falls/restraint committee and developed a “Fall Contract” to engage patients in their own care.

Reducing Patient Falls in the Hospital Using Bright Yellow Blankets and Non-Skid Socks

Kenmore Mercy Hospital/Catholic Health System

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PROJECT DESCRIPTION

Recognizing a need to reduce patient falls resulting in injuries, Kenmore Mercy Hospital reviewed the existing process for identifying high-risk patients and found it was complicated and not routinely followed. Consequently, a simpler strategy was developed. Upon admission, patients identified as a high risk for falls are now given a bright yellow lap blanket and bright yellow non-skid socks to wear throughout their hospital stay. The blanket and socks are kept with patients at all times, including during transfers between departments for testing or rehabilitation. When the patient is in bed, the blanket is placed on the end of the bed.

The result is a highly visible, less cumbersome system for identifying and carefully monitoring patients at high risk for falls. In addition, all

LESSONS LEARNED

- Simplicity is key to ensuring staff participation and patient acceptance of the program.
- Effective communication among departments enhances patient safety.
- Celebrating success with frontline staff keeps them engaged and motivated.

associates know that extra precautions must be taken and patients are encouraged to take the items when discharged to reduce the likelihood of falls at home.

First piloted in January 2009 on a single nursing unit, the program was launched hospital-wide in April 2009 after a hospital-wide education program. Kenmore Mercy is developing a video to celebrate its success and will share it with staff to reinforce this positive outcome.

OUTCOMES

- Kenmore Mercy Hospital achieved a 55% reduction in falls with injury in 2009 compared to 2008.
- This successful strategy will be implemented across three other campuses in the system.



Acute Inpatient Rehabilitation Unit Falls Prevention Program
Mercy Medical Center

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PROJECT DESCRIPTION

In keeping with Mercy Medical Center’s culture of safety, falls prevention monitoring led to a closer look at its acute inpatient rehabilitation population. It was noted that 90% of patients who fell in December 2009 were cerebral vascular accident (CVA) patients. Twenty-two percent of the patients who

LESSONS LEARNED

- Use bed and chair alarms to address impulsive behaviors in right-sided brain injury patients.
- Engage all staff to identify right-sided brain injury patients and implement patient falls prevention strategies.

continued next column

fell had left-sided CVAs, 67% had right-sided CVAs, and 11% had bilateral CVAs. These data led the facility to further study right-sided brain injuries and offer an educational program for staff. As a result, changes were initiated to focus the hospital’s falls prevention program on right-sided brain injury patients.

OUTCOMES

In one month’s time after initiating the revised falls prevention program with a focus on right-sided brain injury, Mercy Medical Center’s fall rate decreased 27% for this population.

LESSONS LEARNED
(continued)

- Include phenomena such as spatial/perceptual control limitations in nursing care plans.



Restraint Use Reduction
Nathan Littauer Hospital and Nursing Home

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PROJECT DESCRIPTION

Nathan Littauer Hospital established a multidisciplinary team, comprised of nursing, rehabilitative medicine, environmental services, nutritional services, and purchasing staff to identify ways to promote patient

safety, enhance the existing Falling Star Program, a patient falls prevention program, and reduce restraint use, consistent with the hospital’s mission to provide safe, high-quality care.

LESSONS LEARNED

- Continuous staff education is necessary to achieve a positive outcome.
- Patient/family education about their role in patient safety is essential.
- Communicate and celebrate successes with staff.

Initiatives included relocation of high-risk patients closer to nursing stations and collaboration with rehabilitative medicine in the use of appropriate occupational therapies and equipment. New equipment was purchased, including beds with alarms to alert staff of patient movement. Patient and family education is accomplished through written information provided on admission and reinforced throughout the stay by the nursing staff.

OUTCOMES

- The restraint rate per 1,000 patient days decreased from 15.4 in 2006 to 5.8 in 2009.
- The patient fall rate per 1,000 patient days decreased from 2.82 in 2006 to .97 in 2009.
- There were no patient injuries in 2009 related to a fall.
- Reducing the use of restraints did not increase the number of patient falls/injuries.
- Falls prevention is everyone’s responsibility. Environmental service, rehabilitative medicine, and nursing staff were instrumental in decreasing the use of restraints.



**Falls Reduction Program—
An Individualized Approach
New York Hospital Queens**

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PROJECT DESCRIPTION

In the past decade, New York Hospital Queens made incremental strides to reduce the rate of inpatient falls; then, in 2008, the facility’s falls and restraint committee created a comprehensive falls reduction program that positively impacted patient safety and significantly reduced the falls rate, injuries, and cost. After reviewing medical literature and analyzing its data, New York

Hospital Queens initiated a program to identify those at risk for falls using a standardized assessment tool. Simultaneously, the facility implemented individualized preventive interventions to meet patient-specific needs.

New York Hospital Queens realized the importance of fostering hospital-wide understanding of the falls reduction program. The “red sock” became a universal symbol for fall risk because each patient identified as “at risk” wears red, non-skid slipper socks, and these patients’ doors and charts bear a picture of red socks. The hospital invested in state-of-the-art patient beds, equipped with bed exit alarms, low-bed position features, and pressure redistribution.

OUTCOMES

New York Hospital Queens achieved a 32% reduction in inpatient patient falls between 2008 and 2009, and a 28% reduction in inpatient injuries resulting from falls during the same period.



**Patient Safety Without Restraints
New York Hospital Queens**

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PROJECT DESCRIPTION

Although New York Hospital Queens’ patient falls were below National Database of Quality

LESSONS LEARNED

- Individualizing preventive interventions to reduce falls is more successful than a “one-size-fits-all” approach.
- Creating a hospital-wide symbol for patients at risk of falls helps heightened awareness of patient safety.
- There is no “cookie cutter” solution for preventing falls.

Indicators (NDNQI) benchmarks in 2008, the facility wanted to reduce the rate by 30% without restraints. To accomplish this goal, New York Hospital Queens developed a performance improvement program that addressed the simultaneous implementation of protocols to reduce falls and use of restraints. The facility started with a daily surveillance and analysis of every restraint and patient fall occurrence. Once the data were gathered and analyzed, the hospital revised its falls prevention protocols, staff education, rounding behaviors, and supervisory activities.

All nursing staff participated and, by the end of 2009, New York Hospital Queens decreased its falls by 30% (including falls with injury) while remaining a restraint-free hospital. During the first three quarters of 2009, restraint usage fell 90% below NDNQI benchmarks and the falls rate remained more than 50% below NDNQI benchmarks.

OUTCOMES

New York Hospital Queens achieved the following:

- the falls rate was reduced below NDNQI benchmarks without the use of restraints;

LESSONS LEARNED

- Patient safety starts with an idea.
- Mittens can be used to prevent removal of medical devices.
- Established practices do not necessarily prove to be good practices. The medical literature supports use of restraints, staff education, documentation, observation, and allowing the patient to move about at intervals. Assessment of alternatives is required. However, these steps often distract the caregiver from exploring new ways to enhance safety.

- professional nurses' geriatric assessment skills were enhanced;
- hourly rounding was implemented; and
- appropriate care is provided for patients at high risk for falls.



Feet First: Enhancing a Culture of Safety to Achieve a Reduction in Patient Falls

St. Francis Hospital—The Heart Center

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PROJECT DESCRIPTION

Although St. Francis Hospital—The Heart Center's patient falls rate in the patient care division is consistently below the national benchmark of 3.5 per 1,000 patient days, the hospital constantly strives to improve. The targeted population consists of many elderly patients who often exhibit polypharmacy, and frequently use anticoagulants, which could complicate injuries sustained during a fall.

The innovative process developed to reduce falls incorporates a multifaceted approach:

- A risk assessment tool is completed every 12 hours, requiring clinical nurses to score patients on their gait, mental status, falls history, use of narcotics/sedatives, hemodynamic status, and other factors. A score of ≤ 18 indicates the patient is at high risk for falls.
- The falls prevention program emphasizes appropriate interventions. The prevention plan

LESSONS LEARNED

- Interdisciplinary collaboration is a highly effective practice for identifying learning opportunities.
- Continuous monitoring and communication is essential to sustain results.
- Patient and family participation is essential for success.

of care lists nursing interventions categorized as Functional, Equipment, Education, and Toileting (FEET).

- Upon admission, patients and families partner with staff and receive a falls contract, which remains posted on patients' bulletin boards for the duration of hospitalization.
- In the event of a patient fall, an interdisciplinary team meets to analyze contributing factors and develop an action plan to prevent further occurrences.

OUTCOMES

In 2009, the rate of falls was 1.0 per 1,000 patient days, down from 1.2 per 1,000 patient days in 2008.



Falls Prevention—Methodology and Initiative

St. Joseph's Hospital, Elmira

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PROJECT DESCRIPTION

St. Joseph's Hospital restructured and reevaluated acute inpatient patient falls prevention strategies after a spike in reported falls in September 2008. This included revamping nursing assessment on admission and post-fall, modeled on the Sparrow Hospital Falls Prevention Program. Several

LESSONS LEARNED

- **Communication and reinforcement of potential risks for patient falls helped all disciplines improve safety measures specific to the patient.**
- **All patients, regardless of age, need to be assessed for fall risk.**
- **Remembering the "3 Ps" (positioning, pain, and "pottying") helps decrease falls.**

committees were created to redesign the falls assessment and educate employees. Education targeted the importance of patient assessment and available interventions. Nursing documentation was monitored for compliance with the assessment and results were shared with nursing units.

In addition, St. Joseph's Hospital:

- purchased additional bed alarms and wander guards;
- placed falls prevention posters in all patient care rooms;
- placed "falling star" posters on patient doors to identify high-risk patients;
- required low beds and fall mats for patients identified as at highest risk for falls;
- educated families about the need to inform staff if a patient is at high risk for a fall; and
- redesigned occurrence reports to include factors contributing to the fall, and post-fall interventions.

OUTCOMES

- St. Joseph's Hospital achieved a 25% decrease in patient falls in 2009.
- There is increased awareness by all about those at risk for falls.
- Families are more informed of the measures implemented to protect patients.
- Medical rounds for patients include the question, "Is there anything I can do for you?"



Falls Prevention Intervention Program

United Memorial Medical Center

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PROJECT DESCRIPTION

In 2009, United Memorial Medical Center determined that its patient falls prevention program did not meet the desired level of quality. After researching various policies and gathering organizational input, the facility developed a new policy and procedure. Hourly nursing rounds were established, which increased communication between staff and patients and reduced the number of times patients get out of bed by themselves, thereby reducing the chance of a fall. Risk assessments using the Morse Fall Scale were used to identify high-risk patients. The organization added identifiers such as pictures of waterfalls and purple wristbands for patients at high risk for falls, which improved communication across medical disciplines. Bed checks are used to warn staff about high-risk patients who may attempt to get out of bed without assistance. The key to United Memorial Medical Center's success is persistence. Staff and patients continuously communicate with one another to inform each other of their needs.

LESSONS LEARNED

- Hourly rounds were the most challenging change for staff, but with persistence, they acclimated to this process.
- A hospital environment is always evolving and it is important for policies and procedures to adjust.
- Visual cues are important risk identifiers for staff and patients.

OUTCOMES

- The rate of patient falls decreased below the benchmark average of 3.14 falls per 1,000 patient days as published by the Maryland Indicator Project, and has been maintained.
- The hospital has become a safer place to work and visit.
- The compliance rate shows that staff successfully adapted to the new policies and procedures.
- Letters from the community confirm that United Memorial Medical Center has advanced quality of care.



PATIENT SAFETY—INFECTION MANAGEMENT

Reduce Surgical Site Infections

Adirondack Medical Center

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PROJECT DESCRIPTION

Adirondack Medical Center implemented a comprehensive surgical site infection reduction program that included:

- revamping flash sterilization in the operating room (OR), including revising flash sterilization log sheets, educating OR staff, purchasing new instrumentation, monitoring, and assigning personnel to facilitate sterilization processes in the OR suite;
- increasing the percentage of pre-operative antibiotics started within 60 minutes of incision by implementing a collaborative process, including a revised OR nurse circulator process, synchronized digital clocks, and documentation of anesthesiology administration; and
- hand hygiene education for staff and patients; and the use of a hand hygiene “superteam” convened to advance health care worker compliance. Pamphlets were given to patients and families and hand hygiene was reinforced during pre-operative teaching.

OUTCOMES

- Flash sterilization usage was reduced 85%.
- The surgical site infection rate declined from 1% in 2008 to 0.8% in 2009, a 20% reduction.

LESSONS LEARNED

- Increasing and sustaining staff education supports success.
- Staff involvement is essential to successful system/methodology review and revision.
- Communicating desired goals and outcomes is essential.

- Incision and deep incision infection rates decreased 50%.
- Statistics demonstrate improved processes and consistency in practice.



Prevent Catheter-Associated Urinary Tract Infections

Beth Israel Medical Center

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PROJECT DESCRIPTION

Catheter-associated urinary tract infections (CAUTIs) are the most common hospital-acquired infection (HAI), and are the leading cause of secondary hospital-acquired bloodstream infections. Beth Israel Medical Center conducted a risk assessment that determined intensive care units (ICUs) were the primary at-risk areas. Multidisciplinary CAUTI teams were formed, led by frontline physician, nursing, and transporter infection prevention

“champions” in the ICUs. After achieving initial

LESSONS LEARNED

- Involvement of frontline champions to assist in risk assessment, develop educational tools, and monitor outcomes allowed staff to take ownership of the program, change the culture, and achieve success without the need for additional resources.
- Support from senior leadership, including the board of trustees, was equally important in effecting change.
- Timely feedback was important in rapidly effecting and sustaining CAUTI reductions.

success in three ICUs, the project expanded throughout the facility.

Starting in 2008, the CAUTI teams implemented programs, practices, and interventions using the Plan-Do-Study-Act (PDSA) methodology, including:

- staff education through computer-based, self-learning modules and a test developed by the champions on catheter use, insertion, and maintenance;
- daily assessment of the need for a urinary catheter with removal during multidisciplinary rounds, and use of automatic stop orders;
- involvement of materials management staff to ensure availability of correct catheter insertion kits on each unit;
- feedback and monitoring of CAUTI rates and catheter usage; and
- root-cause analyses for CAUTIs.

OUTCOMES

- Appropriate indication for urinary catheters increased from 83% to 100%.
- Urinary catheter duration decreased by three days and utilization decreased from the 64th percentile to the 55th percentile when compared to National Healthcare Safety Network hospital statistics.
- The number of CAUTIs decreased 83% and the rate decreased from 4.6 to 0.5 per 1,000 catheter days.
- Sixty-six percent of patient care areas maintained a zero CAUTI rate after six months.



“All Hands on Deck” Infection Awareness: Embracing a Culture of Safety

Canton-Potsdam Hospital

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PROJECT DESCRIPTION

Canton-Potsdam Hospital initiated a comprehensive antimicrobial stewardship program after senior leadership noted unacceptable infection rates. The hospital's patient safety director and infection prevention officer led a task force comprised of key frontline staff from across the organization. They implemented automated screening systems, improved signage, educated non-clinical staff on their role, and held education sessions for the entire staff and physicians.

Infection rates subsequently plummeted. The hospital went eight consecutive months without a hospital-acquired *C-difficile* infection and had only one case in 2010 to date. The one case was thoroughly investigated and results shared widely; staff interviewed the patient and traced room assignments to identify the cause. The hospital instituted the program as part of its orientation for new employees and newly affiliated physicians. Sharing incidence of cases, reporting investigation results, and widely sharing best

LESSONS LEARNED

- An open mind can make a big difference when effecting change in a surgical environment.
- A multifaceted approach works better than implementing initiatives individually.
- Surgical site infections can be reduced when teamwork is a critical component of the project and the same staff are assigned to these cases.

practices across the organization encouraged a preventive, rather than compliance-oriented, approach to infection prevention.

OUTCOMES

- In 2008, the hospital had 18 cases of hospital-acquired *C-difficile*; in 2009, 14; and year-to-date for 2010, only one.
- Hospital-acquired Methicillin-resistant *Staphylococcus aureus* dropped from five cases in 2009 to zero cases year-to-date in 2010.



A Vascular Access Team Reduces CLABSIs in Critical Care Units
Faxton-St. Luke's Healthcare

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PROJECT DESCRIPTION

In 2008, the incidence of central line-associated bloodstream infection (CLABSI) at Faxton-St. Luke's Healthcare increased, making it a priority for infection prevention. The facility instituted a vascular access team (VAT) that uses best practices to improve patient outcomes.

Formed in 2009, the team proactively assesses patients who will be receiving long-term or high-risk intravascular medications. VAT also tracks quality markers to assess program effectiveness.

LESSONS LEARNED

- A small, core group of nurses with a primary focus on evidence-based central line care can improve outcomes.
- Consistent rounding and daily attention to lines improves outcomes.
- A VAT can be cost effective in many ways.

A CLABSI reduction team was formed with VAT members and infection prevention, critical care, and oncology staff. Initial changes to the care and maintenance of central lines included institution of standardized dressing changes, standardized insertion kits, a Chlorhexidine impregnated disk at the insertion site, and a "Save That Line" campaign focused on providing simple strategies to improve compliance.

The team expanded on the Institute for Healthcare Improvement (IHI) "bundle," initiated in 2005, with daily attention for patients with central lines, consistent care, and maintenance by a core group of nurses certified in vascular access. Daily practice includes timely dressing changes, rounds, timely and appropriate end-cap changes, and review of necessity.

OUTCOMES

- This program resulted in a 73% reduction of CLABSI incidence between 2008 and 2009. The 2008 rate was 2.76 infections per 1,000 device days; the 2009 rate was 0.73 infections per 1,000 device days.
- There were zero CLABSIs between May and November 2009 institution-wide, with an average of 12,000 line days per year.



Journey to Zero Nosocomial Infections
Glen Cove Hospital

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PROJECT DESCRIPTION

Every year, approximately two million people develop central line infections resulting in increased costs, and more importantly, increased morbidity and mortality. Glen Cove Hospital recognized an opportunity for

improvement in 2005 when its central-line associated bloodstream infection (CLABSI) rate in critical care was 6.5/per 1,000 line days. Glen Cove Hospital used Root Cause Analysis and Failure Mode and Effects Analysis methods to identify issues and to prioritize and modify practices. Changes in culture and practice led to excellent outcomes, improved patient safety, decreased length of stay, and cost avoidance.

OUTCOMES

- 812 CLABSI-free days as of March 15, 2010;
- heightened staff awareness of a culture of safety;
- staff recognition that CLABSIs are preventable and unacceptable;
- sustained improvements in hand hygiene;
- increased compliance in use of personal protective equipment;
- adherence to the Institute for Healthcare Improvement CLABSI prevention “bundle”; and
- increased staff pride.

LESSONS LEARNED

- It is important to review the necessity of central lines with daily multidisciplinary rounds.
- Staff must be empowered to achieve culture change.
- Strong leadership participation is necessary to facilitate change.

Reducing Hospital-Acquired Catheter-Associated Urinary Tract Infections

Good Samaritan Hospital/Bon Secours Charity Health System

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PROJECT DESCRIPTION

Good Samaritan Hospital focused on the relationship between pre-packaged bath products and infections. Many studies have shown that prepackaged bath products decrease infection rates in hospitalized patients. The facility successfully prevented catheter-related urinary tract infections (CAUTIs) through adherence to urinary catheter “bundles,” with the additional intervention of daily bathing with prepackaged bath products. A significant reduction in hospital-acquired CAUTIs occurred during the six-month study, compared with the prior six-month period measured. This direct improvement was observed after two adult medical/surgical units switched to the prepackaged bath products and required daily baths for all bed-bound patients on these units.

OUTCOMES

- The facility experienced 3.5 CAUTIs per 1,000 catheter days pre-study, versus 0.5 CAUTIs per

LESSONS LEARNED

- Practical initiatives, such as a pre-packaged bath product to cleanse patients, in addition to compliance with the urinary catheter bundle, proved useful in reducing CAUTIs.
- Staff accepted this bathing product as a superior method for reducing bacterial load for bed-bound patients and decreasing the potential for infection.
- Ease of use drives increased staff compliance.

1,000 catheter days during pre-packaged bath product use.

- Ten CAUTIs were avoided, saving \$30,000.



Using a Multidisciplinary Team Approach to Reduce Nosocomial *Clostridium Difficile*
Long Island Jewish Medical Center

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PROJECT DESCRIPTION

North Shore-Long Island Healthcare System’s priority quality goal is to reduce preventable harm. At an individual hospital site, rising rates of *Clostridium difficile* prompted a quality improvement initiative. Members of the interdisciplinary team created a *Best Practice Manual for Prevention and Control of*

C Diff. The team used a number of key initiatives including proper isolation and training 40 staff members as infection prevention coaches who “spread the word” about best practices to decrease transmission of all infections. As part of the larger initiative, a 39-bed medicine/oncology nursing unit formed an interdisciplinary team for a collaborative approach to this problem. Rapid hypothesis testing with real-time analysis of data (weekly) by frontline staff helped to illustrate the results and quickly effect

LESSONS LEARNED

- Establish a collaborative, interdisciplinary approach to identify barriers and share ownership of the initiative.
- Communication of simple process changes is key to getting “buy-in,” compliance, and sustainability from staff.
- Real-time data collection, analysis, and education of both staff and visitors are key.

change. Members of the patient care team were assigned different tasks to decrease the incidence of *Clostridium difficile*.

OUTCOMES

- The nosocomial *Clostridium difficile* rate for 2007 was 1.50 per 1,000 patient days, compared to 1.82 per 1,000 patient days in 2008, with a high monthly rate of 3.22 observed in the first quarter of the year. Year-to-date in 2009 (post-implementation), the rate was 0.87 per 1,000 patient days.
- In the medical/oncology units, the pre-initiative nosocomial *Clostridium difficile* rate was 1.857 cases per week, with a seven-week post-initiative rate of 0.125 cases per week.



A Multidisciplinary Approach to Reducing Surgical Site Infections in Coronary Bypass Patients
The Mount Sinai Medical Center

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PROJECT DESCRIPTION

Cardiothoracic surgeons at The Mount Sinai Medical Center perform about 450 coronary artery bypass graft (CABG) operations annually. The 30-day thorax surgical site infection rate was 4.6% in 2007, 4.7% in 2008, and 6.3% the first seven months of 2009. The state average and benchmark for this measure in 2009 was 2.1%. A multidisciplinary committee was formed and targeted:

- hair removal and skin preparation;
- sterilization of the surgical site in the operating room;
- antibiotic administration timing;
- scrub, wound irrigation/closure, and gown/glove practice;

- operating room sterility and cleaning between operations; and
- wound covering and post-operative care.

The initiative began in June 2009 with an analysis of publicly reported data. In July, the team met, presented, and discussed cardiothoracic surgeon rounds, with follow-up; and a draft action plan was developed and distributed. The plan was finalized and implemented in August, with results and enhancements in January 2010.

OUTCOMES

Data were analyzed for seven months before and six months after the intervention. The average number of CABG operations per month was the same before and after the intervention (36 per month). Results included:

- the number of total thorax infections decreased from 16 to 5;
- the infection rate decreased from 6.3% to 2.3%;
- deep infections (involving the sternum or visceral organ space) decreased from nine to three;
- the deep infection rate decreased from 3.6% to 1.4%; and
- about seven infections (including five deep infections) were prevented over six months.

LESSONS LEARNED

- A multidisciplinary approach to reducing surgical infection can be highly and immediately effective.
- Successful interventions relied more on adherence to standardized practices than to high-technology solutions.
- Public reporting of data can be a strong stimulus for quality improvement initiatives.

Employee Health Seasonal and H1N1 Influenza Vaccination Initiative New Island Hospital

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PROJECT DESCRIPTION

New Island Hospital approached its annual employee influenza vaccination program with renewed passion in 2009 because of the recent outbreak of H1N1 influenza and anticipation of seasonal influenza prevalence. Using the hospital's "Emergency Preparedness Point of Distribution (POD)

Plan for the Mass

Distribution of Medications/Vaccinations to Employees and their Immediate Family," New Island Hospital launched its influenza vaccination program on September 24, 2009. The initial POD vaccinated 446 of 840 employees (53%). To facilitate further employee vaccination, especially of direct patient caregivers, a "Push" POD methodology (vaccinating directly on the units) was used. The second phase of this H1NI initiative was launched on November 11, 2009 with the hospital president receiving the vaccination at a hospital-wide meeting.

OUTCOMES

- Ninety-two percent of employees (or 769 of 840) were vaccinated against seasonal influenza.

LESSONS LEARNED

- Ongoing staff education and senior staff vaccination (leading by example) remove barriers to vaccination.
- The Push POD methodology increased access to influenza vaccination for patient care staff.
- Weekly communication of departmental vaccination compliance rates facilitated the process.

- Thirty-five percent (295) of employees were vaccinated against H1N1 influenza.
- Eight percent (71) of employees declined influenza vaccination in writing.
- Thirty-eight hospital volunteers and members of the voluntary medical staff were provided influenza vaccination.



Improving the Quality of Patient Care Through an Antimicrobial Management Initiative
New York Hospital Queens

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PROJECT DESCRIPTION

New York Hospital Queens' surveillance showed that 50% of admitted patients receive antibiotics at some point during their hospitalization. Examination of antibiotic utilization revealed that often these antibiotics are unnecessary or are not used optimally. The hospital data highlighted high rates of *Clostridium difficile* infections and the presence of multi-drug resistant organisms (MDROs). The primary goal of this initiative was to optimize clinical outcomes while reducing the risk of toxicity and MDROs. The initiative is a collaborative effort including a clinical pharmacist, infectious disease physicians, a microbiologist, and infection preventionists.

LESSONS LEARNED

- **Combating central line infections is not just a critical care problem.**
- **Implementing a checklist to reduce central line infections has a significant positive impact.**
- **Ongoing monitoring of outcomes and process compliance is critical to success.**

It includes a physician education program, a prospective audit of all antibiotic use, and, as necessary, recommendations to the prescriber. These recommendations included changing the antibiotic, de-escalation, dose optimization, discontinuation, and switching from intravenous to enteral administration. Improvements in length of stay (LOS) and decreased antibiotic days serve as the measurements of the efficacy of this program.

OUTCOMES

New York Hospital Queens achieved the following results:

- significant discontinuation of antibiotics (59.9%);
- no recurrence of infection or readmission among patients where discontinuing antibiotic was recommended;
- decreased LOS to an average of 4.8 days per patient;
- antibiotic use decreased by 5.2 days per patient;
- hospital-acquired *Clostridium difficile* decreased 25%; and
- mortality rates among patients were reduced 50% where the recommendation was accepted.



Improving Health Care Worker Hand Hygiene Compliance in an Intensive Care Unit
North Shore University Hospital

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PROJECT DESCRIPTION

In March 2008, North Shore University Hospital placed video cameras with views of every sink and hand sanitizer dispenser in hallways and patient rooms to record hand hygiene compliance.

Sensors mounted in doorways identified when health care workers entered or exited, indicating hand hygiene events. When video auditors observed health care workers using the hand sanitizer dispenser or washing hands with soap and water, they assigned a “pass” to the event. Auditors reported a “fail” when they observed the practice not being performed. Four months of baseline rates for

hand hygiene compliance were recorded, and on October 6, 2008 the results of the audits were displayed on two electronic boards visible to all staff in the unit. The results were updated every ten minutes with current shift, weekly, and monthly rates. Unit managers also received e-mailed summaries delineating shift, weekly, and monthly rates. Leadership responded to low rates of hand hygiene compliance largely on an aggregate basis, but coached individuals as needed. Hand hygiene compliance increased and has been sustained.

OUTCOMES

- With continuous real-time feedback, hand hygiene exceeded 85.7%, for 14 months.
- The weekly compliance rate for physicians (70.5%) was lower than that of other health care providers (87.4%).
- Rates during the day shift (81.9%) were lower than during the night shift (88.4%).

LESSONS LEARNED

- Remote video auditing without feedback does not significantly change hand hygiene compliance.
- Video cameras and continuous feedback produced a significant and sustained improvement in hand hygiene compliance.
- Sustained hand hygiene compliance may have a temporal association with fewer health care-acquired infections.

Decreasing Incidence of Upper Extremity Deep Venous Thrombus *Plainview Hospital*

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PROJECT DESCRIPTION

Peripherally inserted central catheters (PICCs) are convenient, safe, and cost-effective in both the inpatient and outpatient settings. The incidence of PICC usage has increased dramatically over the years. Plainview Hospital focused its efforts and strategies on preventing upper extremity deep-vein thrombosis (UEDVT) in those patients who have indwelling PICC lines. A proactive risk assessment determined the PICC process needed improvement. A multi-disciplinary team was established and included representation from physicians, nurses, radiology, and quality management departments. Improvements to the PICC process included establishing The Joint Commission’s 2010 Patient Safety Goal requirements for central venous catheters, a re-design of the organization’s current PICC process, reinforcement of proper PICC care, recommendations for PICC insertions, and process improvements. These strategies led to a major reduction in the development of UEDVTs, and decreased the number of central line bloodstream infections.

LESSONS LEARNED

- The size of the PICC lumen can contribute to the development of an UEDVT.
- Inserting a catheter tip into the axillo-subclavian or innominate vein is associated with a higher incidence of UEDVT.
- Utilizing a double lumen catheter instead of a triple can decrease the incidence of central line bloodstream infections.



OUTCOMES

- The number of PICC UEDVTs decreased from 26 in 2008 to four in 2009.
- Compliance with completion of PICC consents improved from 61% in May 2009 to 98% in August 2009.
- There was a significant decrease in the number of PICCs inserted, from 902 in 2008 to 677 in 2009.
- Revision of the PICC checklist and PICC insertion note improved compliance with completion of the catheter insertion note: from 17% in May 2009 to 98% in August 2009.



Using the Medication Administration Record to Improve Immunization Rates

Putnam Hospital Center

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PROJECT DESCRIPTION

Putnam Hospital Center undertook an initiative to improve pneumococcal and influenza immunization rates, which were 87% and 76%, respectively, in 2007. A screening mechanism was developed to identify patients who met the criteria for immunization. This led to the development of a protocol for assessment and standing orders. This protocol approved by the medical staff allows the vaccine to be given by nursing staff based on the results of the assessment process. The assessment information is transcribed to the medication administration record by the pharmacist and serves as a flag for the nursing staff, telling them to proceed with immunization if indicated, or not if contraindicated.

OUTCOMES

- Compliance with core measures increased from 87% to 92% for pneumococcal vaccine and from 76% to 97% for seasonal influenza vaccine.
- The hospital developed informational text alerts placed on the medication administration record by the pharmacist to assist in communicating and tracking immunization status throughout the patient stay.
- A standing vaccination order and pre-printed order form were implemented.

LESSONS LEARNED

- Consistency in follow-up was improved by incorporating tracking into the medication administration record.
- The success of this program depended on an effective system for “hard-wiring” communication between departments and external caregivers.
- Involving medical, nursing, and pharmacy “champions” assured a successful outcome.



Hardwiring Patient Safety: Eliminating Health Care-Acquired Infections

Rochester General Health System

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PROJECT DESCRIPTION

By aligning goals to eliminate health care-acquired infections (HAIs) and by linking these goals to performance measurement and compensation, Rochester General Health System was able to achieve rapid, significant reductions in health care-acquired infections. The organization established a system-wide goal requiring 80% of all

affiliate-specific infection prevention goals to be met. Each affiliate evaluated its annual data to identify specific infections or processes affecting HAIs and with support of system “champions,” developed challenging improvement goals specific to address each issue. Many affiliates set goals to decrease specific HAI rates. For example, the behavioral health network focused on hand hygiene and employee influenza immunization rates. Departments such as housekeeping and dietary identified process improvements such as isolation practices and cleaning techniques.

Progress toward these goals is measured according to pre-determined scales linked to compensation. Monthly scorecards and 90-day action plans were used to support and align leadership and resources within the system.

OUTCOMES

- The system achieved 86% of all the affiliate-specific infection-related goals, exceeding its target by 6%.
- Five of seven affiliates met at least 80% of their work unit goals.
- Thirty-six of the 42 unit infection control goals were met.

LESSONS LEARNED

- Unit goals must be linked to the performance of each unit to be meaningful.
- Clinical and non-clinical area goals can be specific to one’s work, yet align to clinical system goals.
- Data must be standardized and transparent to all leaders.

Reducing Infections in the Orthopedic Total Hip and Total Knee Arthroplasty Population Rochester General Health System

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PROJECT DESCRIPTION

Recognizing the need to decrease post-operative infections in orthopedic total joint patients, Rochester General Hospital convened a multidisciplinary clinical group to develop and implement an aggressive infection control plan, including Methicillin-resistant *Staphylococcus aureus* (MRSA).

LESSONS LEARNED

- A multidisciplinary approach ensures protocol compliance and encourages staff participation.
- Standardization of processes improved clinical outcomes for patients.
- Hardwiring protocols and pathways into day-to-day work helps improve patient safety and clinical outcomes.

The infection reduction plan was implemented on April 1, 2009 and requires all orthopedic surgery patients are nasally cultured for MRSA colonization prior to or upon admission for orthopedic services. Colonized patients are placed on “contact isolation” to prevent transmission. Patients are also nasally cultured for MRSA on discharge day. All orthopedic patients receive Mupirocin nasally twice each day until discharge, with elective patients receiving their first dose on the morning of their surgery.

Elements of environmental planning included appropriate placement of alcohol hand gels, disinfectant wipes in each room and on portable equipment, designated thermometers for each patient unit, and Chlorhexadine pre-operative skin preparation cloths both the night before and morning of surgery.

OUTCOMES

- By the fourth quarter of 2009, compliance with Mupirocin administration and MRSA swabbing reached 90%.
- Zero MRSA infections in orthopedic total joint surgical patients were reported between March 2009 and March 2010.
- The hospital saved \$50,000 for each MRSA infection avoided in orthopedic total joint surgery patients.



Hospital Point of Dispensing Exercise to Test Response to a Public Health Emergency

St. Elizabeth Medical Center

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PROJECT DESCRIPTION

St. Elizabeth Medical Center executed a unique plan to meet seasonal influenza management and mass emergency objectives. The organization coordinated a mass prophylaxis program that included direct mailings to target populations, staff education, patient screening and documentation, and administration of vaccine through standing medical

LESSONS LEARNED

- Activation of the hospital incident command system helped ensure effective management of the program.
- The location of the vaccination site played an important role in effective and efficient management and distribution of prophylaxis.
- It is important to include a mental health team in the vaccination program to address psycho-social issues.

orders. Upon completion, staff returned to normal operations, were redeployed, and an evaluator was assigned to analyze the process and assess inventory management. In addition, internal and external site security and communication functions such as barriers, radios, and signage were reviewed.

OUTCOMES

- Out of a pool of about 3,000 eligible people, 1,202 participants were vaccinated during a 12-hour period.
- On average, the vaccination process took 6.4 minutes, from the time an individual arrived at the registration station until he or she exited.
- Appropriate vaccination strategies were implemented in a timely manner upon onset of the event (just-in-time training).
- Quick and efficient vaccine administration resulted in short wait times.
- Security and access controls were very effective.



Reducing Hospital-Acquired Infections in the Intensive Care Unit by Using Chlorhexidine Bathing and Oral Rinse

St. Elizabeth Medical Center

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PROJECT DESCRIPTION

St. Elizabeth Medical Center’s medical-surgical and cardiothoracic intensive care units (ICUs) have made reducing hospital-acquired infections (HAIs) a priority for many years. However, results have not been consistent. When bathing with chlorhexidine (CHG) exclusively became a recommended treatment in 2009 for ICU patients,

St. Elizabeth Medical Center conducted a trial to determine if reducing skin and mouth flora would decrease the incidence of HAIs. Starting in June 2009, CHG cloths and mouth rinse were added to patients' oral care regimen and administered every 12 hours (oral care without CHG is administered every four hours). The facility compared the incidence of hospital-acquired ventilator-associated pneumonia (VAP) and central line-associated bloodstream infection (CLABSI) before and after the intervention.

LESSONS LEARNED

- Patients were satisfied with the cloths and did not miss soap and water baths.
- Surveillance and feedback to staff is critical to sustain results.
- VAP and CLABSI rates fell after implementing CHG hygiene into the patient care regimen.

OUTCOMES

- Overall, ICU HAIs decreased 9% in the three months following the introduction of CHG compared to the preceding three months, with the number decreasing from 32 to 29.
- Overall, VAP decreased 81.8%, from 11 cases in 2008 to just two the following year.
- Overall, CLABSI in the ICU decreased 57.1% in 2009, from seven cases in 2008 to three the following year.
- HAIs caused by Methicillin-resistant *Staphylococcus aureus* (MRSA) decreased 83% in the ICU, from six in 2008 to one in 2009.



Reducing Surgical Site Infections After Knee and Hip Replacement Surgery

St. Elizabeth Medical Center

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PROJECT DESCRIPTION

Recognizing the devastating and costly impact of surgical site infections in patients undergoing knee and hip replacement, St. Elizabeth Medical Center implemented a "bundle" approach to eliminate infections, reduce length of stay, and improve

overall outcomes. The orthopedic team initiated evidence-based standards and innovative technology including active pre-operative culture surveillance for Methicillin-resistant *Staphylococcus aureus* (MRSA) for all patients; nasal administration of Mupirocin for those with positive cultures; substitution of Vancomycin for pre-operative antibiotic for these patients; isolation upon admission to minimize transmission between patients in the unit; use of Chlorhexidine cloths for pre-operative skin preparation the evening before and morning of surgery; and application of Nanocrystalline silver dressings on all incisions. Antibiotic bone cement with Tobramycin was used for patients undergoing total knee replacement.

Electronic surveillance alerts infection control staff to reportable infections and enhances feedback to surgeons and staff to sustain results.

LESSONS LEARNED

- An open mind can make a big difference when effecting change in a surgical atmosphere.
- A multifaceted approach works better than implementing initiatives individually.
- A team-based approach to infection control is critical for success.

OUTCOMES

- St. Elizabeth Medical Center significantly reduced the surgical site infection rate for hip replacement surgery (from 3.3% in 2004 to zero in 2007, 2008, and 2009).
- The overall infection rate for knee and hip replacement surgery decreased from 1.6% in 2004 to 0.3% in 2009 (zero in 2008).
- No wound infections caused by MRSA were reported after the bundle was implemented in 2007.
- Average length of stay was reduced by 1.05 days for this population.
- More than \$250,000 was saved between 2006 and 2009.



Meeting Methicillin-Resistant *Staphylococcus Aureus* Head-On St. Mary's Hospital

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PROJECT DESCRIPTION

In 2007, St. Mary's Hospital saw a remarkable increase in both community and hospital-acquired Methicillin-resistant *Staphylococcus aureus* (MRSA) infections. The hospital launched an initiative to identify and treat community-acquired colonized or infected MRSA admissions and to decrease hospital-acquired MRSA infections by 20% within one year.

Data were analyzed to identify high-volume/high-risk cases. Despite the relatively low numbers (180 per year), St. Mary's Hospital opted to consider total joint surgeries as high-risk procedures, as these represented the highest number of hospital-acquired MRSA infections. Intensive care unit (ICU) admissions (390 per year) met the high-volume/high-risk test. Together, these areas net an estimated 15.7 new MRSA-identified

patients per year, with a potential cost savings of \$36,000 per prevented hospital-acquired MRSA infection.

Early identification and isolation of MRSA carriers and isolation of these patients reduces transmission to other patients. The screening program also increased awareness and compliance with standard hygiene measures such as hand disinfection, isolation, and appropriate use of personal protective equipment (PPE).

OUTCOMES

- The hospital-acquired MRSA rate before program implementation (January 2005 - October 2007) was 3.66 per 1,000 discharges.
- The hospital-acquired MRSA rate one year post-program implementation (November 2007 - October 2008) was 2.57 per 1,000 discharges.
- Implementation of the MRSA program resulted in a 29.78% reduction in hospital-acquired MRSA, exceeding the hospital's goal.



LESSONS LEARNED

- Increased staff awareness results in early recognition.
- Continuous feedback, information sharing, and real-time audits contribute to a sense of staff ownership and pride in the program results.
- Staff made real progress in "breaking old habits" regarding specific isolation techniques and gained a better understanding of MRSA transmission routes.

A Catheter-Associated Urinary Tract Infection Prevention Team Models Best Practices and Improves Outcomes

St. Peter's Hospital

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PROJECT DESCRIPTION

Catheter-associated urinary tract infections (CAUTIs) are the most common health care-associated infection in the United States. The Institute for Healthcare Improvement (IHI) provided bundles of protocols that are proven to decrease CAUTIs. St. Peter's Hospital developed a multidisciplinary CAUTI prevention team to implement the IHI bundle's insertion, management, and early removal strategies to prevent CAUTIs. Following national and international clinical practice guidelines, the team focused on device placement, aseptic technique, and management and removal of unnecessary catheters. Initial strategies included education, competency assessment, and use of a reminder form.

As a result, there has not been a CAUTI for nine months on the pilot unit. A combination of nurse-driven audits, physician reminders, and staff education relative to urinary catheter aseptic technique and management succeeded in reducing the duration of urinary catheters and the incidence of CAUTI.

LESSONS LEARNED

- Newer nurses require mentoring from senior nurses to develop the confidence to remove urinary catheters.
- Frontline nurse "champions" are key to reducing CAUTI.
- Nurses respond positively to the protocol and the autonomy it provides.

OUTCOMES

- Inappropriate catheters were identified and removed before 48 hours.
- There was a sustained reduced incidence of CAUTI.
- The protocol was easy to use and increased collaboration with physicians, while improving patient, nurse, and physician satisfaction.
- The hospital realized savings by reducing CAUTIs.



Central Line Infection Reduction—Not Just in ICUs

Strong Memorial Hospital/University of Rochester Medical Center

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PROJECT DESCRIPTION

When comparative information was made available through the National Healthcare Safety Network, Strong Memorial Hospital identified central line-associated blood-stream infections (CLABSIs) as a significant hospital-acquired infection concern. In January 2008, a multidisciplinary team was convened to focus on reducing CLABSIs in the intensive care units (ICUs). The team reviewed performance data collected by Strong's infection control practitioners, along with the literature on best practices and piloted new products. Line

LESSONS LEARNED

- Combating central line infections is not just a critical care problem.
- Checklists have a significant positive impact in reducing CLABSIs.
- Ongoing monitoring of outcomes and process compliance is critical to success.

insertion and maintenance “bundles” were developed from the adult and pediatric ICUs.

The team then focused on educating residents and staff and revised the blood culture policy to minimize the risk of contamination. Line insertion forms were also revised to include a checklist for each element in the bundle. A system was developed to monitor bundle compliance. Implementation of the bundles was then extended beyond the ICUs to acute care floors where patients with long dwelling central lines receive care. To ensure continued progress, data are reviewed weekly by hospital leadership and the governing board.

OUTCOMES

- Strong Memorial Hospital had 51 fewer CLABSIs in 2009 than in 2008.
- There was a significant reduction in the numbers of CLABSIs in all ICUs.
- The medical ICU went six months without a CLABSI.
- The hospital achieved a 15% reduction in CLABSIs on its ten acute care floors.



**MRSA Active Surveillance Program
Unity Health System**

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PROJECT DESCRIPTION

In this initiative, Unity Health System focused on reducing joint replacement surgical site infections. An active screening and surveillance program was implemented for all patients scheduled for elective total joint replacement surgery. Scheduled patients visit the surgical pre-testing unit several weeks before surgery where they are nasally swabbed for a bacterial culture. The nurse provides education about Methicillan-

resistant *Staphylococcus aureus* (MRSA) and its potential impact on care and recovery, providing patients a hospital-developed MRSA educational pamphlet. When a positive MRSA culture is identified, a surgical pre-testing staff person contacts the physician, surgery is scheduled as the last case of the day, infection prevention is notified, and the chart is flagged. Upon admission, the patient is put on contact precautions and is administered Vancomycin as a substitute for prophylaxis.

OUTCOMES

- Before active surveillance (2005-2007), the number of joint replacement surgeries was 3,224 and there were five related MRSA infections, for a rate of 1.55 per 1,000 joint replacement surgeries.
- Post-active surveillance (2008-2009), there were 2,440 joint replacement surgeries and zero MRSA infections.



LESSONS LEARNED

- Identifying patients with MRSA infections before admission enables timely implementation of infection prevention strategies.
- Evidence-based prophylactic use of antibiotics is key.
- Educating patients, families, providers, and staff before, during, and after surgery increases MRSA awareness and promotes infection control.

A New Approach to Promote Associate Wellness During Influenza Season

Westfield Memorial Hospital

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PROJECT DESCRIPTION

Westfield Memorial Hospital set a goal to improve the health and wellness of hospital associates by promoting a seasonal influenza vaccination administration program and instituting infection

control measures to prevent the spread of influenza. In fall 2009, Westfield Memorial Hospital's associates attended a mandatory education training program presented by the infection control department. Objectives for this training were to review the hospital's pandemic guidelines, institute infection control measures to prevent influenza, and coordinate effective strategies to stop the spread of influenza among patients, visitors, and staff, and increase vaccination rates among associates.

The training increased staff awareness of techniques for preventing the influenza virus, including vigilance with patients and visitors, appropriate respiratory protocols, and meticulous hand hygiene.

OUTCOMES

- In 2008, 60% of associates were immunized with seasonal influenza vaccine and 18% had documented "Declination of Vaccination Administration."

LESSONS LEARNED

Staff education can achieve high vaccination rates. Through this initiative's educational focus, Westfield Memorial Hospital was able to increase its influenza vaccination/declination rate to 100%.

- In 2009, 89% of associates were immunized with seasonal influenza vaccine and 11% had documented "Declination of Vaccination Administration."

"Question the Foley"—Sustained Reduction in Catheter-Associated Urinary Tract Infections

White Plains Hospital Center

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PROJECT DESCRIPTION

Foley catheters serve a variety of clinical purposes, but are often left in place for prolonged periods, leading to the development of catheter-associated urinary tract infections (CAUTIs).

White Plains

Hospital Center's

Nursing Division spearheaded "Question the Foley," an organization-wide campaign to combat the problem of prolonged dwell times for Foley catheters and to decrease overall incidence of hospital-acquired UTIs. A series of specific criteria for maintaining a Foley catheter was outlined under the "Question the Foley" umbrella, providing nurses a standardized framework to review indications for continuing the use of Foley catheters and steps to initiate removal when a patient no longer meets the criteria for keeping a Foley catheter in place.

LESSONS LEARNED

- Use of specific, evidence-based criteria increases success.
- Nurse-driven processes ensure continuity and consistency.
- Daily surveillance, monitoring, and accountability are essential.

OUTCOMES

- In 2007 (before the initiative), the facility had 110 CAUTIs.
- In 2008, there were 53 CAUTIs (18,588 catheter days, 4,273 catheterized patients, and 4.3 average dwell days).
- In 2009, the total fell to 13 CAUTIs (15,513 catheter days, 4,174 catheterized patients, and 3.7 average dwell days).



**Reducing *Clostridium Difficile* Risk
Wyoming County Community Health
System**

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PROJECT DESCRIPTION

In the early months of 2009, *Clostridium difficile* rates were climbing at Wyoming County Community Hospital. The infection preventionist wanted to establish a protocol that would proactively mitigate the risk of contracting *Clostridium difficile*

for all patients. An interdisciplinary team was established and a protocol was developed. A screening tool, standing orders, patient education material, and in-service education of staff were promptly developed.

Reducing environmental risks for contamination became a priority, focusing on hand-washing techniques, isolation precautions, and

appropriate sanitation procedures. The dietician screens for risk and initiates standing orders for at-risk patients.

OUTCOMES

- The *Clostridium difficile* rate dropped from 2.4 per 1,000 patient care days at the project's start in early 2008 to 1.3 per 1,000 patient care days in 2009.
- Individualized education helped the hospital achieve widespread patient and resident acceptance.



LESSONS LEARNED

- There is great value in using evidence-based research.
- The dietary and housekeeping departments are key to addressing this clinical issue.
- An interdisciplinary team with common goals is needed to achieve success.

PATIENT SAFETY—MEDICATIONS

Increasing Safety for Patients with Immune-Mediated, Heparin-Induced Thrombocytopenia

Huntington Hospital/North Shore-Long Island Jewish Health System

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PROJECT DESCRIPTION

Heparinoids serve as the cornerstone of venous thromboembolism (VTE) prevention and are administered to 77% of all inpatients at Huntington Hospital. However, immune-mediated heparin-induced thrombocytopenia may occur in 1% to 5% of patients receiving heparin products. A direct thrombin inhibitor (DTI) must be administered promptly to prevent complications. When thrombocytopenia is observed in patients receiving heparin, it is a challenge to distinguish immune-mediated heparin-induced thrombocytopenia from other, more common causes. The high cost of testing and treatment, along with potential side effects of DTIs, make it desirable to reduce variation in treatment by applying evidence-based approaches. A workgroup developed an evidence-based algorithm in the

LESSONS LEARNED

- A “proof of concept” was established for standardizing care with electronic clinical decision support tools to improve outcomes.
- Immune-mediated heparin-induced thrombocytopenia is a high-volume, high-risk, and high-cost problem; wide implementation of the methodology improved safety and efficiency, while reducing costs.
- Multidisciplinary collaboration is crucial in developing, testing, and implementing process change.

electronic clinical decision-support tool that uses laboratory and clinical data to prompt the physician to order the optimal testing and management protocols for suspected heparin-induced thrombocytopenia. In a second phase, the hospital evaluated the care of 56 patients managed with its electronic decision support tool (EDST) to ensure efficacy.

OUTCOMES

Overuse impact:

- Total heparin-induced platelet antibody (HIPA) tests decreased 55.6%, while negative HIPA assays decreased 84.0%.
- Serotonin release assay testing decreased 25%.
- Unnecessary argatroban courses decreased from six in 2008 to zero in 2009.

Underuse/safety impact:

- Total argatroban use increased by 41% in the post-implementation period, reflecting fewer “under-use” errors than were detected during the baseline phase.
- Under-use outliers decreased from seven patients to zero.



Improving Medication Safety *New Island Hospital*

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PROJECT DESCRIPTION

Recognizing the positive impact safe medication administration can have on the overall culture of patient safety, New Island Hospital secured a clinical pharmacist to spearhead a medication safety program to decrease inappropriate use of intravenous (IV) antibiotic therapy. Efforts were aimed at improving compliance with hospital policy outlining clinical criteria for “Intravenous

to Oral Antibiotic Switch.” The initiative, which targeted patients receiving IV antibiotic therapy for five days, requires the clinical pharmacist to collaborate with physicians to assess the clinical appropriateness of IV therapy, IV/oral conversion, or discontinuing therapy. The Senti 7 system was used to connect clinical laboratory information with the patient’s pharmacy profile, to alert pharmacists to abnormal values affecting the patient’s medication regime.

LESSONS LEARNED

- Physician-pharmacist collaboration enhances medication management and safety.
- Appropriate utilization of IV antibiotic therapy reduces risk of *Clostridium difficile* infections.
- Linking laboratory and pharmacy information systems positively impacts the management of patient-specific regimens.

OUTCOMES

- New Island Hospital achieved a four-fold increase in IV-to-oral antibiotic conversion between the third quarter of 2008 and third quarter of 2009.
- The program achieved a 56% decrease in the rate of *Clostridium difficile* infections between the fourth quarter of 2008 and fourth quarter of 2009.
- There was a 65% increase in pharmacy/physician interventions between the fourth quarter of 2008 and fourth quarter of 2009.



One Process, One List, Universal Access: Internal Electronic Medication Reconciliation
The Mount Sinai Medical Center

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PROJECT DESCRIPTION

Medicare’s core heart failure discharge instructions include a composite score requiring all six elements (activity, diet, follow-up, worsening symptoms, weight monitoring, and a reconciled list of discharge medications) to achieve a positive outcome. Before implementing its Electronic Medication Reconciliation Process (eMed Rec), The Mount Sinai Medical Center conducted a monthly drill-down and analysis and identified medication reconciliation as the primary driver of non-compliance. Recognizing the need for transformational change, senior leadership dedicated information technology resources to develop an electronic medication reconciliation system. Using the Define, Measure, Analyze, Improve, and Control (DMAIC) approach, the eMed Rec team implemented electronic medication reconciliation that achieved significant positive change.

LESSONS LEARNED

- Electronic systems must be user-friendly and compatible with work flow.
- Electronic systems alone do not guarantee 100% compliance and do not eliminate the need for provider vigilance.
- DMAIC can serve as an effective model for improving organizational performance.

OUTCOMES

- Medication reconciliation defects as a percent of total defects decreased from 45% (July-

December 2006) to 10% (July-December 2009), a 77% reduction.

- Medication as the unique driver in non-compliant cases decreased from 49% to 21%, a 56% reduction.
- Performance on Medicare's heart failure measure improved from 68% in the second quarter of 2009 to 85% in the fourth quarter of 2009.



Antibiotic Stewardship: Reducing Multi Drug-Resistant Organisms *Northeast Health*

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PROJECT DESCRIPTION

In May 2009, Northeast Health convened the first meeting of its antibiotic stewardship committee to address variations in prescribing practices and drug utilization in different locations within the health system. A full-time pharmacist was hired to focus on antibiotic surveillance, concurrent review and intervention, and staff education. Standardized order forms were implemented for pre-operative, post-operative, and site-specific treatment. The committee determined the program could save \$180,000 in 2010. Additional formulary restrictions are anticipated to increase this number substantially, and help prevent the emergence of multi-drug resistant organisms.

LESSONS LEARNED

- Staff education and restricting antibiotic agents appear to be the most effective strategies for reducing emergence of multi-drug resistance.
- Daily prospective audits and feedback are essential for monitoring antibiotic use.

OUTCOMES

In 2009, the following goals were accomplished:

- Directed order sets were created and mandated for antibiotic administration.
- Antibiotic orders must be renewed with the pharmacist after four days.
- The pharmacist can now convert the route of administration for several different antibiotics after 48 hours of intravenous (IV) treatment without a physician's order, based on certain criteria.
- Use of Trigecycline is now restricted.
- Zosyn is administered every eight hours instead of every six, and infused by IV pumps over four hours to improve bioavailability and reduce costs.
- The pharmacy can measure aminoglycoside levels without a physician's order; calls are made to physicians when levels are below or above a therapeutic range.



Implementation of a Robotic Medication Dispensing System *Olean General Hospital/Upper Allegheny Health System*

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PROJECT DESCRIPTION

On average, Olean General Hospital administers 2,600 doses of medication each day. The challenge in medication management is to plan a distribution system that is as error-free as possible, using standardized processes and appropriate technologies. Medication availability at the point of care is critical to timely administration. Steps in the drug distribution process that require someone to read a medication name or confirm a dosage are subject to error. Electronic verification

of medication administration using bar-code technology has been shown to reduce medication errors at the point of care. Using bar code verification at every step in the medication distribution process provides redundancy, eliminates errors, and allows inventory to be tracked throughout the system. The hospital implemented scanning technology throughout its distribution system, installed a robotic dispensing system in the pharmacy, and deployed computer-controlled medication carts with automated dispensing cabinets on all nursing units. This system allows inventory to be tracked and delivered to medication carts with bar code verification at each step, providing nurses with an adequate supply of medications at the point of care.

LESSONS LEARNED

- Implementation of a hospital-wide change with complex processes requires dedicated time and resources.
- Repetition of communication, education, and feedback to all stakeholders is needed to inculcate new policies, procedures, and processes.
- Technology alone does not guarantee quality.

OUTCOMES

- Picking errors were reduced by 98% and cabinet fill errors decreased 94%.
- Drug inventory stored on the nursing units was reduced by \$112,000.



Recognizing Ways to Improve the Interdisciplinary Reporting of Pre-Empted Medication Errors
St. Charles Hospital

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PROJECT DESCRIPTION

Medication error reporting at St. Charles Hospital is an interdisciplinary process. Beginning in 2004, team members began to explore ways to recognize and improve the reporting of avoided errors.

While traditional reporting via the formal occurrence reporting system and other venues was encouraged, the team determined that certain categories of clinical interventions performed by pharmacy and the medication administration record (MAR) could appropriately be recognized as pre-empted medication errors. The facility implemented a facility-wide electronic MAR. The conversion to an electronic record that is generated daily, in conjunction with the use of the “Hard Stop,” placed emphasis for transcription on the pharmacist instead of the nurse transcription on each unit. The nurse is now required to review the printed MAR for transcription omissions or discrepancies. The pharmacy developed and improved the tracking of clinical interventions, which occur before medications are dispensed.

OUTCOMES

- The workflow process for both nursing and pharmacy staff was simplified.

LESSONS LEARNED

- A system of checks and balances is critical when the medication ordering process includes both electronic and paper components.
- Incorporating staff suggestions improved buy-in and utilization.

- MAR communication changes included adding categories for incorrect or missing allergy information, printing the order number attributed to the profile entry on the MAR, and allowing the pharmacy to access the specific order in question immediately.
- Improved capture of clinical intervention data was achieved by refining the intervention categories and developing an electronic database.



Creating a Culture of Medication Safety

St. James Mercy Hospital

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PROJECT DESCRIPTION

St. James Mercy Hospital's journey to a culture of medication safety is a multifaceted, non-punitive approach that fostered significant and lasting gains. Hospital leaders invested in technology and systems to help reach specified goals, such as implementation of a bedside medication verification system that uses bar-coding. Staff scan bar codes on the patient's wristband and on the medication to assure the proper medication is being given to the proper patient. A computer at the bedside assists the nurse with bedside charting and documentation, using an electronic medication administration record and a

LESSONS LEARNED

- Technology alone does not improve medication safety; clinical expertise of the staff is essential.
- Data collection and evaluation are key to establishing success and measuring milestones.
- Dedicated clinical and non-clinical resources must be represented on the team.

wireless connection. This initiative required disciplined cooperation from the members of the multidisciplinary committee to meet St. James Mercy Hospital's objectives to:

- decrease medication-related errors;
- redesign workflows;
- computerize medication administration records; and
- involve end-users in selection of hardware.

OUTCOMES

Results of the bar-coding project include:

- the overall number of medication errors decreased 44% from 2008 to 2009;
- the number of omitted medication errors declined 28% from 2008 to 2009;
- the number of wrong dosage of medication decreased 38% from 2008 to 2009; and
- the electronic medication administration record is accessible to all clinicians.



Anticoagulation Nomograms: Not One Size Fits All

WCA Hospital

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PROJECT DESCRIPTION

WCA Hospital's medical staff identified the need for weight-based, disease process-related nomograms for anticoagulation. A multidisciplinary team reviewed best practices gathered from a wide range of sources, provided input on

LESSONS LEARNED

- Best practices research and involvement of local experts is essential for success.
- An ongoing discussion following initial implementation increases the likelihood of utilization.

the content and ease of use, and developed three disease-specific heparin nomograms in cardiac, neurologic, and deep vein thrombophlebitis/pulmonary, with standing orders for Warfarin and Enoxaparin. After extensive education of physicians, nursing, pharmacy and laboratory staff, the order sets were implemented.

Physicians now use nomograms for anticoagulation tailored to each patient's disease process and weight. Pharmacy staff are responsible for consistent weight-based dosing per the nomograms, and medication administration records include any ongoing lab tests to be completed. Nomograms specify maximum initial and maintenance dosing, enabling nurses to easily check subsequent dosing changes prompted by laboratory results. The pharmacy also works in conjunction with the laboratory to assure completion of appropriate tests and dosing changes.

OUTCOMES

- Safer, more effective anticoagulation treatment is based on each patient's diagnosis and weight.
- Follow-up laboratory testing is assured when it is built into the nomogram.
- Ongoing staff education regarding the availability and benefit of using the anticoagulation order sets increased utilization 66%.



PATIENT SAFETY—PRESSURE ULCERS

Skin Saver Team Initiative—Helping Hands

Beth Israel Medical Center

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PROJECT DESCRIPTION

The wound ostomy continence nurses at Beth Israel Medical Center's two campuses collaborated to develop a pressure ulcer prevention initiative. A number of goals were identified, such as sharing best practices with bedside staff; improving communication between nurses and patient care associates (PCAs); and tapping into the knowledge, talents, and committed work each group provides. Confusion about accountability for certain tasks was discovered. During handoffs, communication between nurses and PCAs about which patients were at risk for pressure ulcers was often missed. As a result, efforts to protect patients from pressure ulcers were sometimes disjointed.

This initiative consisted of an all-day educational program that focused on a team-based approach to patient care that increased staff satisfaction and improved patient outcomes. After training, registered nurses and PCAs returned to their units as experts in pressure ulcer prevention.

LESSONS LEARNED

- Ongoing unit-based education, especially by peers, enhances compliance with best practice protocols.
- PCAs must be recognized as vital members of the team.
- Risk status and planned interventions for pressure ulcer prevention must be included in handoffs.

OUTCOMES

- Beth Israel achieved a sustained reduction in hospital-acquired pressure ulcers.
- Peer-to-peer, unit-based education increased hospital-wide awareness.
- The Skin Saver team participated in prevalence and incidence surveys, and initiated unit-based quality improvement projects to prevent pressure ulcers.



A Team Approach to Pressure Ulcer Prevention Using “Wound Care Champions”

Erie County Medical Center

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PROJECT DESCRIPTION

Erie County Medical Center implemented an interdisciplinary pressure ulcer prevention program that changed the model for wound care by developing “Wound Care Champions” on all nursing units on all shifts. Clinical and educational support was provided by

adding a wound ostomy nurse practitioner who partnered with a wound clinician to lead training for frontline staff on staging and prevention strategies. Education on pressure ulcer staging and prevention methods, and support for clinical rounds was extended to physicians and residents to promote early identification and

LESSONS LEARNED

- Implementation of prevention measures can result in a significant decrease of full thickness pressure ulcers.
- Pre-admission areas require prevention measures (positioning and/or pressure relief devices) to reduce incidence and severity of pressure ulcers.

documentation of pressure ulcers, and initiation of interventions. The program was supported by administration and the board of directors, who allocated capital resources to purchase 250 new beds with pressure relief surfaces, establishing a new standard throughout the acute care and intensive care units.

A multidisciplinary team that included nurses, physicians, physical therapists, dieticians, informatics, and patient safety staff identified at-risk patients and implemented early prevention strategies. A revised standard of care incorporated evidence-based practices requiring frequent assessments utilizing the Braden scale and bedside rounding every two hours to trigger changes in the patient's plan of care, toileting, and repositioning.

OUTCOMES

- The prevalence of hospital-acquired pressure ulcers (HAPUs) decreased 67% post-implementation.
- Monthly audits indicated sustained HAPU incidence rates of less than two per 1,000 patient days.
- Completion of Braden risk assessment on admission achieved 100% compliance.
- Inclusion of pressure ulcer prevention in care plans or care of patient with a pressure ulcer reached 99% compliance.



Decreasing the Incidence of Hospital-Acquired Pressure Ulcers
Olean General Hospital

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PROJECT DESCRIPTION

Olean General Hospital noted the hospital was above the national benchmark for preventing hospital-acquired Stage I and II pressure ulcers,

according to the National Database of Nursing Quality Indicators. To address this issue, the hospital developed a comprehensive wound and skin care program.

A certified wound care nurse began tracking pressure ulcer incidence using the national Institute for Healthcare Improvement pressure ulcer improvement methodology. Decreasing the number of hospital-acquired pressure

ulcers by 50% was established as a goal and targeted by interventions including:

- concurrent surveillance of at-risk patients by a wound care nurse;
- provision of skin care education programs to nursing staff;
- forming a multidisciplinary skin care team;
- development and implementation of evidence-based skin care protocols, a reference manual, and order sets;
- providing pressure-reducing mattresses on inpatient units; and
- development and implementation of a patient education brochure about prevention of pressure ulcers.

OUTCOMES

The incidence of hospital-acquired pressure ulcers decreased 90%, from 13.67 per 1,000 patient days to 1.27 per 1,000 patient days as a result of the program.

LESSONS LEARNED

- A multidisciplinary team including nursing, physicians, wound care nurses, pharmacy staff, and nutrition staff optimizes pressure ulcer prevention.
- An evidence-based skin care protocol directed by a wound care nurse ensures consistency in patients' care and prevents pressure ulcers.
- Pressure ulcer metrics collected by trained staff provide valid measures for monitoring improvement.

Reducing the Incidence of Nosocomial Pressure Ulcers *Plainview Hospital/Syosset Hospital*

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PROJECT DESCRIPTION

In 2009, Plainview Hospital began an initiative to accurately identify community-acquired and nosocomial pressure ulcers; provide appropriate, cost-effective treatment; and collect data for comparison with other validated databases. The hospital's ultimate goal was to improve outcomes by reducing the incidence of facility-acquired pressure ulcers from 2.0% to 1.5%.

The hospital recognized its high-risk, high-volume population—patients from the community including those who reside in nursing homes, rehabilitation facilities, and group homes. Approximately 65% of the hospital's population is older than 70 years. To succeed, the nursing process was restructured following a review of current literature and clinical practice guidelines. A multidimensional initiative was introduced that included nursing education, team building, and standardization.

LESSONS LEARNED

- Nurses value education. Recognizing improvement in the nursing process, they continue to seek knowledge and feedback.
- Use validated tools to promote critical thinking and encourage individualization of a patient's care plan.
- Regular reporting of data and trends to the performance improvement coordinating group supports success.

OUTCOMES

- The facility reduced nosocomial pressure ulcers to 1%, well below the national average of 5.3%.
- A standardized formula was used to permit comparison of the hospital's results with nationally recognized databases.
- A wound care algorithm promoted 100% compliance with product selection.
- Costs of rented wound care surfaces were reduced 50%.
- Documentation of pressure ulcers at the time of admission improved by 50%.



Pressure Ulcer Prevention *St. Charles Hospital*

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PROJECT DESCRIPTION

St. Charles Hospital's pressure ulcer prevention initiative used annual point prevalence survey results as benchmarks for improvement. Objectives of the pressure ulcer prevention program include:

- improve identification of patients at risk for skin breakdown on admission;

LESSONS LEARNED

- Online education is a successful method to disseminate information, ensure compliance, and accommodate staff schedules.
- Discrepancies exist in the general understanding of interventions for patients at risk.
- Inter-rater reliability and fear of reporting pressure ulcers contribute to variability in outcomes.

- implement interventions to prevent pressure ulcers, focusing on the support surface, turning/positioning the patient, and nutrition; and
- decrease the rate of facility-acquired pressure ulcers.

OUTCOMES

- The facility-acquired pressure ulcer incidence rate decreased from 15% in 2005 to 3.3% in 2009.
- The initiative increased availability of and access to resources for prevention.
- The frequency of risk assessments and implementation of interventions increased.
- Standardized education and incorporated pressure ulcer prevention topics are now part of the annual nursing skills fair.
- Revised forms, including pre-printed physician orders, were used to facilitate implementation and documentation of prevention measures and treatment.



Maintaining Patient Skin Integrity Using Nursing Interventions and Clinical Nurse S.K.I.N. Champions St. Francis Hospital—The Heart Center

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PROJECT DESCRIPTION

St. Francis Hospital—The Heart Center reviewed the evidence and decided to use a skin care “bundle” of interventions to reduce hospital-acquired pressure ulcers. The implementation promoted teamwork, as support personnel assisted professional nurses with turning, positioning, and addressing basic comfort care measures. The skin care bundle was initiated in the critical care unit (CCU) to leverage the experience of CCU nurses in preventing pressure ulcers and in providing care to high-risk

populations. The skin care bundle was implemented hospital-wide in the fourth quarter of 2008.

In addition to the skin care bundle, the S.K.I.N. Champions initiative was implemented, which requires a three-month commitment for staff nurses on each patient care unit to become S.K.I.N. Champions. The nurses commit to participate in ed-

ucational seminars, support their peers, and model best practices in pressure ulcer prevention. In combination, these two innovative initiatives dramatically reduced the incidence of hospital-acquired pressure ulcers.

OUTCOMES

- In 2008, 1,005 patients were evaluated, with an overall 5.47 rate of hospital-acquired pressure ulcers per 1,000 patient days.
- In 2009, 1,121 patients were evaluated, with an overall 2.4 rate of hospital-acquired pressure ulcers per 1,000 patient days, a decrease of 56% between 2008 and 2009.



LESSONS LEARNED

- Empowering staff to make decisions is important.
- Education on prevention of pressure ulcers must be consistent and accessible.
- Leadership support for appropriate staffing levels and resources is essential for success.
- Collaboration among members of the interdisciplinary team must be encouraged.

SPECIALTY—EMERGENCY SERVICES

Emergency Department Quality Improvement Peer Review Process *Aurelia Osborn Fox Memorial Hospital*

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PROJECT DESCRIPTION

Aurelia Osborn Fox Memorial Hospital identified opportunities for improvement during its recent implementation of electronic documentation in the emergency department (ED). Initially, the nursing director for the ED reviewed documentation, and compliance with

documentation requirements such as allergies, medication history, and intravenous (IV) start and stop times were low. An estimated \$900,000 was lost each year in billable services because of poor documentation of IV insertion.

The ED nursing staff began a nursing peer review program without links to supervisory review or disciplinary processes. Every two weeks, nurses are assigned charts to review based on their work status. Full-time nurses are asked to review six charts; part-time nurses are assigned a chart for every shift worked. While initially hesitant to critique each other, the nurses became adept at the chart review process and documentation improved dramatically.

LESSONS LEARNED

- Changes and improvements are easier to facilitate when critiques come from peers.
- Separating peer review from performance evaluation helped change the culture of “fear of retribution” to one of empowerment and teamwork.
- Simple documentation can save thousands of dollars.

OUTCOMES

- Within three months, the compliance rate for documentation of allergies improved from 65% to 100%.
- Compliance with documentation of medication history improved from 70% to 96%.
- Compliance with documentation of IV start time improved from less than 50% to 95%, which enabled the hospital to accurately bill for the service.



Emergency Department Efficiency Improvement Project *Ellis Medicine*

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PROJECT DESCRIPTION

In response to the state’s Commission on Health Care Facilities in the 21st Century, Ellis Medicine consolidated two hospitals, which resulted in a significant increase in emergency department (ED) wait times at the larger facility. That facility undertook initiatives to reduce wait times and improve patient satisfaction, including constructing 17 new ED treatment rooms, moving an 82-bed

LESSONS LEARNED

- Patients are hard to predict—when the hospitals consolidated, patients moved to the larger ED even though the smaller one remained open.
- Size counts—the higher patient volumes could not have been handled without the additional examination rooms and beds.
- Collaborative “patient flow meetings” and innovations such as “physician in triage” measurably improved efficiency.

skilled nursing facility to another campus, and opening 70 new inpatient beds in that space.

Operational changes included adding additional physician and nursing staff, streamlining the triage and registration process, expanding the hours of case managers in the ED, and conducting thrice-weekly “patient flow meetings” with the chief operating officer and ED, admitting, nursing, and case management staff. A 12-hour “physician in triage” program was implemented for early assessment of patients. In addition, the ED collaborates with the family health clinic to ensure that patients without primary care and insurance receive follow-up care.

OUTCOMES

- Wait times (triage to physician) declined from a high of 135 minutes in June 2008 to 46 minutes in February 2010.
- Time for disposition to floor declined from nearly 200 minutes in June 2008 to about 70 minutes in December 2009.
- Press Ganey patient satisfaction scores rose from a zero percentile in June 2008 to the 65th percentile in December 2009.



**Emergency Department
Overcrowding Response Plan
Faxton-St. Luke’s Healthcare**

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PROJECT DESCRIPTION

Faxton-St. Luke’s Healthcare used a valid, reliable method to identify emergency department (ED) and hospital overcrowding and initiate a hospital-wide response plan. The National Emergency Department Overcrowding Score (NEDOCS) was linked to the charge nurses’ computer in the ED and was made available to all staff. The response plan identifies specific roles and functions at

various score levels up to and including notification of the administrator on call. The ED charge nurse calculates the score every four hours; every two hours if the score is between 141 and 180. When the level changes, the ED uses the “patient throughput response plan” for level-specific

responsibilities. Each level within the response plan requires a specific hospital-wide response related to departmental operations, bed capacity, supplies, and communications. At the point of reaching “dangerously overcrowded,” the ED charge nurse notifies the nursing supervisor, who develops a plan of action with the administrator.

OUTCOMES

- Within one month of using the plan, Faxton-St. Luke’s decreased the ED length of stay (LOS) by an hour.
- The organization created a hospital-wide response to ED overcrowding, including service level agreements with clinical engineering, environmental, linen services, and transport staff.
- Patient and employee satisfaction increased.



LESSONS LEARNED

- A decreased LOS increased patient satisfaction.
- Service level agreements from support services play a vital role in patient “throughput.”
- Recognizing the ED as the “front door,” the hospital supports ED throughput improvement.

Mid-Track: Solving the Emergency Severity Index Patient Timely Treatment Conundrum

Good Samaritan Hospital Medical Center

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PROJECT DESCRIPTION

Good Samaritan Hospital Medical Center was honored to be chosen to participate in a national collaborative to improve patient flow and reduce emergency department (ED) overcrowding. Patients entering an overcrowded ED face longer wait times for care, which often results in people leaving without being seen (LWBS). Good Samaritan determined that Emergency Severity Index (ESI) 3 (mid-severity) patients had the longest wait times and high LWBS rates. Under this initiative,

a designated physician manages the diagnostic phase for these patients directly after their triage. The patients are treated in the ambulatory surgery unit located directly over the ED and their care is directed by that same physician and coordinated by nurse practitioners. This clinically-driven team approach is highly successful in reducing wait times and the LWBS rate for ESI 3 patients. This innovative and effective care deliv-

LESSONS LEARNED

- Processes took longer than expected because of the need to address nuances of a new model of health care delivery.
- The multidisciplinary approach highlighted the essential functions and contributions of every team member.
- Through proper measurement techniques, the variability of patient flow (the peaks and troughs) can be identified, which allows for staff planning, thereby improving operational efficiency.

ery system will be permanently incorporated into the operating procedures for patients presenting at the ED.

OUTCOMES

- The LWBS rate for all mid-severity patients fell by 36%, and by 42% for the study group.
- The overall LWBS rate was reduced by nearly 24%.
- ED patient satisfaction has improved significantly.



Rapid Medical Evaluation: Improving the Emergency Department Patient Experience

Highland Hospital/University of Rochester Medical Center

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PROJECT DESCRIPTION

In 2009, Highland Hospital's emergency department (ED) was revamped, which decreased bed capacity, contributing to a high number of ambulance diversion hours, left without being seen (LWBS) rates above stan-

dards, and low patient satisfaction scores. A patient care delivery model was designed to reduce the queuing phenomenon by eliminating time spent by a patient waiting for a bed; a physician to see, exam, and treat the patient; and the nurse "to do" orders and care. Under the new rapid

LESSONS LEARNED

- An area specifically designed to accommodate the program is essential.
- Clearly establish criteria for patients who can be seen in the rapid medical evaluation area.
- Staff must be committed to the program's success.

medical evaluation program, a physician assistant and a registered nurse are available in a specially designed self-contained area near the front of the ED. This enables the patient to receive a rapid medical evaluation upon arrival, enabling patients with minor conditions to be treated and discharged rapidly.

For patients with minor conditions, simple diagnostics such as x-rays or laboratory tests are completed while the patients are in a comfortable waiting area. Patients with complex conditions are seen by the physician assistant. Orders are then undertaken by the assigned nurse before moving the patient into the main emergency room and assigning him or her to medical staff members best able to continue care. The process is designed so that patients do not occupy the treatment bed in the rapid medical evaluation area for more than 30 minutes.

OUTCOMES

From February 2009 to February 2010:

- ambulance diversion hours decreased from 77 hours to 33 hours;
- the LWBS rate decreased from 3.75% to 1.5%;
- patient satisfaction scores increased from the 12th to the 89th percentile; and
- length of stay for low-acuity patients decreased from 149 minutes to 90 minutes.



Improving Emergency Department Patient Flow Through HANYS' ECHO Collaborative

Orange Regional Medical Center

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PROJECT DESCRIPTION

Before this initiative, Orange Regional Medical Center's patient flow process was facilitated by

departments and individuals working independently to do whatever it took to get patients an available bed, without being fully aware of available resources or activities in other areas of the hospital that strain the hospital and increase emergency department (ED) length of stay and diversion time. Orange Regional Medical Center assembled an interdisciplinary, collaborative team to identify improvement opportunities and initiate corrective actions to decrease the ED length of stay and diversion hours.

- The hospital established daily interdisciplinary team member bed management meetings for assessing, planning, and evaluating hospital patient flow.
- Vacant space in the hospital is used to care for newly admitted patients when inpatient units are full.
- Agreeable admitted patients are sent to a partner campus, instead of holding them in the ED during high inpatient capacity periods.
- A timely "admission orders to inpatient bed" practice was instituted, with a goal of one hour.

LESSONS LEARNED

- Standardizing the language and format of bed management communication boards on all inpatient units was key to facilitating immediate recognition of bed availability.
- Using hospital resources (i.e., case management, transport, and housekeeping) effectively and vacant space is critical to ED decompression during high-volume periods.
- An interdisciplinary approach at the daily bed management meeting is vital in facilitating timely patient movement from the ED to the admitting unit.

OUTCOMES

- ED diversion hours were reduced from 190 total hours in 2008 to five total hours in 2009.
- Admitted patients' mean length of stay decreased from 329 minutes in April 2009 to 293 minutes in December 2009.
- ED patient satisfaction scores improved, from an average score of 53% in 2008 to a score of 80% for fourth quarter of 2009.
- The ED employee engagement score increased from 3.63 in 2008 to 3.89 in 2009.



Reducing Length of Stay in the Emergency Department's Minor Treatment Area to 60 Minutes *Samaritan Medical Center*

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PROJECT DESCRIPTION

In response to complaints regarding long lengths of stay in Samaritan Medical Center's minor treatment area (MTA), the facility set a goal to reduce the length of stay (LOS) to 60 minutes by the end of 2009. After reviewing data related to LOS components, an interdisciplinary team identified four distinct process time

LESSONS LEARNED

- Using an interdisciplinary team ensured that all departments were committed to the goal.
- Soliciting ideas from staff and involving them in implementation strategies identified real opportunities for LOS reduction.
- Establishing quarterly time targets enabled staff to achieve and celebrate success incrementally.

measurement points, and selected leaders for each:

- arrival to triage (nursing and patient registration);
- triage to bed (nursing);
- bed to care complete (laboratory, radiology, and providers); and
- care complete to discharge (nursing).

The ED uses the MedHost documentation system and parameters for these measurements and results reported during weekly meetings. A work-group of staff from each area was identified to brainstorm ideas for the action plans. This group met three times during the year and helped implement 32 initiatives that led to the success of this project. These initiatives were piloted using 90-day action plans; those contributing to a decrease in LOS were adopted.

OUTCOMES

LOS decreased over three quarters, from 160 minutes during the first week of March 2009 to 74 minutes during the last measurement week of December 2009.



Maintaining the Momentum on Patient Throughput *South Nassau Communities Hospital*

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PROJECT DESCRIPTION

To address patient flow throughout the facility, South Nassau Communities Hospital analyzed interdepartmental processes on patient admission, staffing, registration, bed turnaround time, patient discharge, and transport and placement. Operational and systems-based initiatives were designed to increase efficiency and

timeliness, including enhancement of the bed demand escalation plan and hiring a bed coordinator and assistant director of nursing oversight for patient throughput. Daily tactical bed board care coordination team meetings were held to identify patient placement needs and discharge barriers. An emergency department (ED) patient tracking dashboard provides a quick view of patient diagnostics and disposition.

LESSONS LEARNED

- Successful throughput initiatives require everyone’s participation across the continuum of care.
- Expansion of throughput initiatives requires inclusion tactics to improve smoothing of operating room schedules.
- Supporting staff work/lifestyle balance optimizes staff satisfaction, performance, and engagement.

Additional initiatives included:

- devising specific cardiac monitoring admission criteria, resulting in increased availability of cardiac monitors;
- cohorting hospitalist admissions on a dedicated unit;
- bedside patient registration in the ED; and
- execution of critical care nurse bedside hand-offs of care reports in the ED.

OUTCOMES

- The hospital achieved a 27% increase in favorable patient responses (Hospital Consumer Assessment of Healthcare Providers and Systems “Time Spent in ED” question).
- The initiative resulted in a 19% decrease in total average time in the ED, with a 30% decrease in time from “ED to critical care patient transfer” over three months, a 24% decrease from “time of admit to arrival on

unit” over six months, and a 16% decrease in “ED treat and release” time over six months.

- The hospital achieved a 28% decrease in “red” (total bed capacity) hours in 2009.
- Average daily availability of cardiac monitors increased since inception of the admission criteria.



Implementation of an Electronic Medical Record System with CPOE in Urgent Care

Thompson Health

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PROJECT DESCRIPTION

In 2009, Thompson Health’s emergency department (ED) added computerized physician order entry (CPOE) to the electronic medical record system. The director of emergency and outpatient services took on the role of the physician champion, establishing the basic design and coding of the order sets based on ED physician consensus. The project went live in four months. Then the urgent care department implemented an electronic medication administration records system with CPOE. The physician “champion” adjusted the software templates to meet urgent care needs. This went live in two months.

LESSONS LEARNED

- To succeed, the project must be mandatory.
- All users must adopt the new system on the go-live date.
- A physician champion is essential.
- The product must be robust, easy to use, and supplied by a company that provides service excellence for implementation and ongoing support.

Among the most significant benefits realized was immediate communication of orders and interventions to the nurses, leading to better outcomes. Because of the new changes:

- the urgent care center increased hours and tripled volume without adding staff;
- satisfaction of health care providers and end users has improved;
- orders, progress notes, and discharge instructions are legible and available immediately; and
- the patient receives a typed list of medications and appropriate educational information at discharge.

OUTCOMES

- All nursing staff use a computerized system, allowing immediate access to medical information for all patients.
- The initiative enhanced communication among all health care providers in the delivery of medical care.
- This initiative improved compliance in meeting and exceeding regulations, and increased work flow process efficiency.



SPECIALTY—HOME CARE

Home Care Demonstration Project to Reduce Hospital Readmissions Brookhaven Memorial Hospital Medical Center Home Health Agency

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PROJECT DESCRIPTION

Brookhaven Memorial Medical Center set a goal to increase home care referral and telehealth care models to address variations in 30-day readmission rates for patients with pulmonary diseases. Brookhaven's home health agency accepted these patients, with full provision of home care services and added telehealth monitoring to proactively manage symptoms before emergent need. Patients who did not accept telehealth were still seen in the standard manner with intermittent in-home visits. Those that accepted telehealth were seen for fewer in-home visits. Telehealth patients had scales, blood pressure cuffs, pulse oximeters, and stethoscopes in their homes, as well as interactive visual computers. Patients took their vital signs and sent them to the nurse daily via computer connection. Patients whose vital signs varied out of prescribed range were contacted by the nurse more frequently than those whose vital signs were stable.

LESSONS LEARNED

- Telehealth should be used as a standard of care, not an option for the patient to refuse or accept.
- Rapidly advancing technology requires the ability to exchange equipment; therefore, leasing is preferable to buying.
- Telehealth is an efficient use of nursing staff.

OUTCOMES

The readmission rates for chronic pulmonary obstructive disease were consistently lower for telehealth home care.



SPECIALTY—MATERNAL-CHILD SERVICES

Providing a Brighter Future for Infants—Improving Hepatitis B Vaccination Rates to Newborns
Brooks Memorial Hospital Medical Center Home Health Agency

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PROJECT DESCRIPTION

Brooks Memorial Hospital's obstetrics department began an initiative to ensure that newborns are vaccinated for Hepatitis B without delay.

The Centers for Disease Control and Prevention (CDC) emphasizes the importance of vaccination of newborns at birth. CDC believes that the birth dose of the Hepatitis vaccine provides early protection for the infant who may be at risk after the perinatal period, and infants who receive the birth dose have higher rates of finishing the complete series on time. In the United States, one of five babies born to mothers with Hepatitis B do not receive the treatment known to prevent infection in newborns. Given within 24 hours of birth, Hepatitis B vaccine and

LESSONS LEARNED

- In 2009, 100% of all eligible newborns were vaccinated for Hepatitis B upon delivery in the birthing room or in the nursery immediately after cesarean section.
- The Department of Health awarded the obstetrics department a Certificate of Excellence for vaccinating more than 90% of all eligible newborns with the birth dose of the Hepatitis vaccine.
- Longstanding policies are not always the best practice.
- Success is measured by the number of patients cared for in an optimal manner, not just the number of patients.
- Evidence-based medicine optimizes outcomes.

immunoglobulin can protect 85% to 95% of newborns from infection, even if they were exposed at birth. About 90% of children who contract Hepatitis B infection go on to have chronic infections.

OUTCOMES

- Before the birth, parents are educated about Hepatitis B and the vaccine and give consent for vaccination.
- The vaccine is available and ready to administer immediately after birth in the delivery room or upon entry to the newborn nursery if the birth is by cesarean section.



Improving Patient Safety in Obstetrics Using Crew Resources Management

Catholic Health Services of Long Island

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PROJECT DESCRIPTION

In 2005, Catholic Health Services of Long Island's perinatal service experienced a cluster of adverse events. A task force was convened to develop a strategic plan for performance improvement in the 6,500 deliveries per year perinatal service line. Studies suggest that as many as 50% of obstetrical mistakes are preventable by implementing high reliability safety processes. After researching options, the task force selected the Crew Resource Management (CRM) model as the method for change.

A core team received CRM education and trained more than 235 clinicians. Principles around communication, team structure, situation monitoring, mutual support, and team behavior were adopted, along with team rounding

and huddles on each patient. Blame-free debriefings were conducted following near-miss or adverse events. Emergency drills were conducted to sharpen critical incident awareness and response.

OUTCOMES

- Adverse events were reduced between 26% and 42%.
- The severity index of events dropped between 9% and 17%.
- Malpractice claims were reduced by 66%.
- Unexpected admissions to the neonatal intensive care unit declined by more than 60%.
- Staff perception of safety culture increased 50%.
- Results have been sustained for 36 months.
- No additional costs were incurred after initial training expenses.

LESSONS LEARNED

- There is an inverse association between frequency of adverse events and level of team training achieved in obstetrical care.
- Objective measurement of care outcomes with a tight feedback loop to staff reinforces training and sustains its impression on behavior.
- Liability reduction is achievable in high-risk clinical areas.



Twice-Daily Labor and Delivery Multidisciplinary Board Rounds
St. Barnabas Hospital

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PROJECT DESCRIPTION

Since 2007, St. Barnabas Hospital’s labor and delivery team (including the assigned

anesthesiologist, neonatology staff, students, nurses, ancillaries, and invited guests) has engaged in discussion and planning with the labor and delivery patient board twice daily (10 a.m. and 8 p.m.). All patients are discussed in detail, including an in-depth review of fetal tracings, as needed. Clinical concerns such as obesity, asthma, hypertension, and other comorbidities are reviewed and

the implications discussed with all disciplines. Nurses present the latest information about their patients’ conditions. Social issues or other conditions that may delay discharge or affect post-delivery/post-birth care are also reviewed.

Board rounds serve as a generic “huddle” before scheduled operating room cases begin. If a pre-term, ill, unstable, or very large infant is anticipated within a short time, the delivery team may ask to delay a scheduled case until the other delivery has occurred. In cases of morbidly obese patients, options for pain control, airway management, and anesthesia for operative delivery are discussed. Post-delivery management of patients with significant comorbidities is reviewed and suggestions are made. For cases of anticipated difficulties, individual roles of participants may be assigned in advance at board rounds. This has been shown to improve the efficiency of responders in emergencies.

LESSONS LEARNED

- The quality of rounds is only as good as the information presented.
- Missing persons at rounds, especially nurses, lead to a significantly increased chance for incomplete or erroneous information being passed along.
- All participants in rounds must feel comfortable asking questions, including those that challenge the current management.

OUTCOMES

- St. Barnabas Hospital enhanced “situational awareness,” resulting in faster response times in emergencies and greater efficiency of responders.
- The hospital standardized the language used when presenting patients.
- The learning needs of staff are regularly reviewed so that the organization can focus future educational efforts on perceived deficits.
- Board rounds have helped to bring about a culture change conducive to using CRM techniques and principles.



Perinatal Simulation: Building a Culture of Teamwork and Safety in Obstetrics

Strong Memorial Hospital/University of Rochester Medical Center

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PROJECT DESCRIPTION

Strong Memorial Hospital identified team training as a key component for building a culture of safety in medicine. Communication and organizational culture are routinely cited as barriers to effective communication and teamwork in obstetrics. The addition of an innovative perinatal simulation program enabled Strong to enhance its culture of safety and improve quality care in obstetrics.

Key leaders from the obstetric and neonatal departments first collaborated in 2007 to develop an interdisciplinary simulation-based team training (SBTT) program to augment perinatal safety. SBTT focuses on improving communication, teamwork, and quality in obstetrics. Strong holds 25 interdisciplinary high-fidelity SBTT

sessions each year, featuring a simulated video recorded event and a team debriefing. The goal of the debriefing is to link team training tools and strategies to team performance and to identify opportunities for improvement.

OUTCOMES

- The “safety climate” score on the safety attitude questionnaire improved from 68% in 2007 to 78% in 2009.
- The “teamwork climate” score on safety attitude questionnaire improved from 58% in 2007 to 72% in 2009.
- The facility’s Press Ganey Obstetric/Gynecology Service score improved from less than the 80th percentile in 2008 to the 99th percentile in 2009.

LESSONS LEARNED

- **Simulation-based training is an innovative adult learning tool that can reinforce and teach team training components.**
- **Laboratory-based simulation training enables providers from different departments and disciplines to train in a safe educational environment.**
- **The majority of participants ask for simulation every six months; currently, the organization offers it once a year to capture 79% of the obstetric staff.**



Code H Obstetrical Hemorrhage—Development of a Team Approach Winthrop-University Hospital

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PROJECT DESCRIPTION

Hemorrhage is the leading cause of maternal mortality. Health care providers can prevent maternal deaths by improving recognition of

excessive blood loss, since blood loss is frequently underestimated and response to hemorrhage requires a rapid and coordinated approach. Winthrop-

University Hospital established a multidisciplinary task force that developed and implemented strategies including staff education on estimation of blood loss, response to hemorrhage, establishment of a massive transfusion protocol, and facilitation of the release of blood products and laboratory results. In addition, a “Code H” cart was created containing emergency equipment and a reference manual with emergency contact numbers, diagrams of emergency maneuvers, and medication information.

OUTCOMES

- Staff recognize and respond to significant blood loss sooner.
- A team approach fosters better defined roles, communication, and patient-focused nursing care.
- The blood bank’s response to blood product requests is more timely and efficient.
- Nurses feel supported because they can activate Code H.
- Hemorrhages are reviewed with specified data criteria for process improvement follow-up.

LESSONS LEARNED

- Never stop monitoring processes and training all members of the multidisciplinary team.
- Interventions to abate hemorrhage occur sooner when Code H is called.
- Chart review reveals multiple risks present in most hemorrhages, some developing during labor.

Got Milk? Vital Human Milk for Premature Infants
Winthrop-University Hospital

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PROJECT DESCRIPTION

Recognizing that Nassau County has one of the highest preterm birthrates in the state, Winthrop-University Hospital began an initiative to foster the use of breast milk for preterm infants. Compared to their full term counterparts, pre-term infants are at considerable risk for increased morbidity and mortality, including learning disabilities, cerebral palsy, sensory deficits, respiratory illnesses, and gastrointestinal illnesses.

Mothers’ own milk (MOM) programs have demonstrated nutritional, gastrointestinal, immunological, developmental, and psychological benefits for pre-term infants. Breastfed pre-term infants have lower rates of ear, respiratory, and gastrointestinal infections, and lower mortality rates. In addition, breastfed pre-term infants are discharged earlier from the neonatal intensive care unit (NICU).

This project’s goal was to increase the amount of MOM and provide donor milk in the NICU. This was achieved by providing a dedicated NICU lactation consultant, educating nurses and residents, using “premie” pumps/insurance-covered rental pumps, and donor milk.

LESSONS LEARNED

- Awareness and a single message to mothers are essential.
- A dedicated lactation consultant increases awareness for families, nurses, and medical staff.
- Donor milk provides a viable option.



OUTCOMES

This initiative:

- increased the percentage of mothers providing MOM from 73% to 93%;
- increased MOM production using the premie pump; and
- increased insurance reimbursement for breast pump rentals, decreasing the program's cost.



SPECIALTY—MENTAL HEALTH

Criminal Justice Treatment Program to Enhance Addiction Treatment and Public Safety

Eastern Long Island Hospital

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PROJECT DESCRIPTION

This innovative collaboration between criminal justice organizations and Eastern Long Island Hospital’s behavioral health treatment continuum focused on:

- treatment groups within the county correctional facilities;
- providing a clinical advisor to local drug courts; and
- hospital services providing primary treatment and assessment for the county’s re-entry program.

LESSONS LEARNED

- Cognitive behavioral therapy creates positive changes in criminal thinking.
- Education for behavioral health staff regarding criminality and criminal thinking is imperative for the successful treatment of offenders.
- Appropriate use of drug court sanctions within the psycho-social profile is successful in reducing recidivism.

Treatment at county correctional facilities consisted of weekly groups and ongoing drop-in sessions for both men and women that challenge criminal thinking and stress cognitive behavioral changes. The drug court clinical advisor is a member of the treatment team for the Regional Intervention Court (RIC) who sits twice weekly with the judge, coordinator, and probation officer to review and design the court’s treatment assessment and plan. The re-entry task force and hospital collaboration facilitates appropriate behavioral health treatment

and case management for individuals being released from incarceration and those who are at risk of parole violation due to substance abuse.

OUTCOMES

- Treatment groups were provided within two correctional facilities for three years.
- About 880 inmates per year were served in both correctional facilities.
- There were four graduating classes from the RIC. Graduation criteria included a minimum of one-year of court compliance and continuous sobriety.
- The hospital-based behavioral health continuum treated 156 parolees.



SPECIALTY—OUTPATIENT SERVICES

Reversing the Ravages of Chronic Wounds: A Community-Based Approach

Claxton-Hepburn Medical Center

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PROJECT DESCRIPTION

Claxton-Hepburn Medical Center responded to a community need for effective, comprehensive wound services by opening a dedicated wound healing center.

Claxton-Hepburn's rural community has a high incidence of diabetes and obesity, with a subsequently high rate of non-healing wounds. Before opening the wound healing center, patients either lived

with chronic wounds or traveled more than 100 miles to the nearest center. The center uses evidence-based clinical pathways and treatment protocols, and continuous review of best practices with a multidisciplinary team approach led by trained physicians. Treatment protocols incorporate traditional wound treatments, hyperbaric oxygen therapy, use of tissue of human or bio-engineered origin, growth factor therapy, and negative pressure wound therapy. Claxton-Hepburn Medical Center also individualized treatment plans to meet the physiological needs of each patient. The facility works closely with a

LESSONS LEARNED

- A rural community can successfully develop a comprehensive wound healing center that provides protocol-based, state-of-the-art wound healing services.
- An evidence-based program aimed at healing patients can be cost effective and lead to individual patient success.
- A multidisciplinary physician-led approach to wound care significantly enhances patients' quality of life.

certified diabetes educator and nutritionists to ensure patients are able to manage their comorbid conditions. The center collects data to monitor, track, trend, and improve heal rates and patient satisfaction.

OUTCOMES

- Claxton-Hepburn Medical Center more than doubled the number of patient encounters from 2007 to 2009.
- Sixteen-week heal rates were 76% in 2007, 87% in 2008, and 94% in 2009.
- Overall wound heal rates were unavailable in 2007, 73% in 2008, and 85% in 2009.
- The amputation rate was 1%.



Appropriate Control of Sample Medications in Hospital-Owned Physician Practices

Jones Memorial Hospital

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PROJECT DESCRIPTION

Dispensing sample medications from physician practices not only allows the patient to begin therapy sooner by receiving the medication at the conclusion of the office visit, but it enables the practitioner to determine the patient's tolerance to the medication and dose before giving the patient a prescription for a complete regimen. There was no standardized process to control, dispense, and recall medication samples in Jones Memorial Hospital's physician practices. Following the Failure Mode and Effects Analysis (FMEA) process, the original process was flow-charted and potential failures were identified. The "failures" were redesigned and the final process includes these steps:

- A point person for each practice ensures that each sample medication is appropriately signed into the sample medication room log.
- A new three-part script pad was developed—one part goes to the patient, one for the patient’s record, and one for the log.
- The script copy for the log enables the point person to adjust the balance of the medication to reflect the correct number of medications that are left on the shelf.
- Inventory is reconciled with each script written. Expired medications are sent back to the pharmacy with the log. In addition, once the lot is depleted, the log is sent back to the pharmacy.

LESSONS LEARNED

Before this initiative:

- Medications were being dropped off with no determination of need in the practice.
- The process to document the sample medication dispensed contained too many steps and required documentation in three different locations, creating an inaccurate inventory.
- The pharmacy did not have knowledge of what was in stock.

OUTCOMES

- This initiative achieved 100% accurate inventory of sample medications in five out of six practices.
- There is 100% recall ability after the log is sent to the pharmacy.
- The practices completed 100% documentation reflecting what is given to each patient, including dose, route, and education.



Decreasing the Dialysis Catheter-Associated Bacteremia Rate

Rochester General Hospital Dialysis Center

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PROJECT DESCRIPTION

The risk of death from bacteremia infection is high for patients undergoing dialysis because their immune systems are compromised due to a variety of renal factors and other comorbidities.

Rochester General Hospital began quality improvement work in this area, using Centers for Disease Control and Prevention (CDC) data on bacteremia rates. The nursing

leadership at Rochester General Hospital’s dialysis center worked closely with infection control, infectious disease, and pharmacy staff to review the evidence and modify procedures to ensure best practices. The following interventions were implemented between 2003 and 2009:

- alcohol scrub of connections prior to opening;
- excluding technicians from exit site care;
- in-service education of nursing staff and annual competency observation;
- using Biopatch dressing at exit site;
- changing to citrate lock instead of 10,000-unit heparin locks drawn from multiple vials by a registered nurse; and

LESSONS LEARNED

- Ongoing training and competency observation make a difference in assuring best care and outcomes.
- The decrease in cost from hospitalizations and subsequent maintenance of treatment volume in the outpatient setting more than offset the additional supply expense.
- Collaboration between involved departments is necessary to support and assure best practices.

- changing to Gentamycin/citrate locks.

This project makes a clear statement that Rochester General Hospital puts patient safety first. Despite the significant increase in supply costs involved with several of the above interventions, there was absolute support to move forward.

OUTCOMES

- Post-intervention, the bacteremia rate was below the CDC benchmark for all of 2009.
- There were fewer hospitalizations of dialysis outpatients related to catheter bacteremia.
- Mortality rates are below the national average for hemodialysis patients.



Defy Diabetes! Seton Health

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PROJECT DESCRIPTION

Seton Health's Defy Diabetes program provides training and a curriculum to faith community nurses located in churches in high-risk communities. This education has led to pulpit talks, screening health fairs, and a four-class "Healthy Living Series" with a holistic body, mind, and spirit perspective. This was followed by monthly support groups where participants' blood pressure, body mass index (BMI), waist circumference, and weight were measured. Participants also completed self-empowerment and self-care surveys. The intent is to help people with diabetes and those at risk of developing diabetes make modest lifestyle changes that can prevent progression or delay the onset of Type 2 diabetes.

Defy Diabetes also targeted improving diabetes care and patient outcomes delivered by health care providers. Defy Diabetes engages the primary care health system to improve outcomes by promoting the American Diabetes Association (ADA) guidelines through the role of diabetes nurse "champions." Providers receive ongoing education and support from the Defy Diabetes team and their nurse

champions. A unique chart assessment tool provides individual feedback to providers.

OUTCOMES

In the faith communities:

- More than 1,000 people heard pulpit talks, 18 health fairs with screenings and 65 Healthy Living classes were held, and there are 78 ongoing support groups.
- Research is underway to measure improved health status (measuring BMI, waist circumference, weight, blood pressure, self-care activities, etc.).

In the physician offices:

- Thirty-two provider teams were engaged, 14 nurse champions were trained, a random sample of 1,230 medical charts were audited, and there were seven successful applications (to date) for the National Commission for Quality Assurance Diabetes Recognition Program.

LESSONS LEARNED

- The "train the trainer" model, although time-intensive, is effective.
- The church and the faith community nurses are extremely powerful as sustainable and effective providers of diabetes education.
- The diabetes nurse champion is very effective as a transformative agent within the health care delivery system.



SPECIALTY—PRIMARY CARE

Patient-Centered Medical Home for Diabetes Management *The Brooklyn Hospital Center*

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PROJECT DESCRIPTION

The Brooklyn Hospital Center responded to the diabetes crisis with an initiative designed to test the impact of multilingual, culturally appropriate, comprehensive diabetes education on outcome measures in African American and Latinos with Type 2 diabetes, and to evaluate the effectiveness of self-awareness intervention in promoting diabetes self-care. A

study in *Diabetic Care* found that fewer than 10% of New Yorkers with diabetes are controlling their disease. Diabetes disproportionately affects black, Latino, and low-income New Yorkers. These disparities are evident in diabetes prevalence, hospitalization, and mortality rates. In these neighborhoods, diabetic health literacy remains extremely poor. In Brooklyn, 80% of adults with diabetes report having had a glycosylated hemoglobin (HbA1C) test in the past year; however, only 16% of these adults know their HbA1C levels.

LESSONS LEARNED

- A multidisciplinary diabetes education program that is culturally appropriate in terms of language, social emphasis, nutritional guidance, and acknowledgment of cultural health beliefs improves outcomes.
- Application of the patient-centered medical home concept to manage chronic disease improves compliance with various aspects of diabetes management.

Regular medical monitoring and patient self-management can dramatically reduce morbidity and mortality. Physical activity and appropriate nutrition have been shown to reduce the disease progression in those at highest risk by 60%. Controlling HbA1C, blood pressure, cholesterol, and smoking is key.

OUTCOMES

- Eighty-four percent of the intervention group had an HbA1c level of less than 9.0, compared with 45% in all of New York City.
- Sixty-five percent of the intervention group had blood pressure of less than 130/80, compared with 50% in all of New York City.
- Sixty-seven percent of the intervention group had less than a 100 level of low-density lipoprotein cholesterol, compared with 35% in all of New York City.
- Eighty-six percent of the intervention group received aspirin, compared with 23% in all of New York City.



SPECIALTY—REHABILITATION/LONG-TERM CARE

Medication Administration Compliance Initiative *Mountainside Residential Care Center*

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PROJECT DESCRIPTION

Mountainside Residential Care Center implemented an electronic medical record medication administration system in March 2009 and began to run reports that revealed that medications were being given outside the one-hour time-frame. Baseline data showed that, on average, 10.75% of the medications were given late on the two units (ranging from 8% to 14% late) for the day and night shifts. An interdisciplinary team began to brainstorm ideas to improve medication administration compliance, with a goal of less than 10% given late. The team determined that a process redesign would be necessary to improve the compliance rate. The new restructuring took effect in November 2009.

OUTCOMES

There was significant improvement in medications administered within the one-hour time-frame, with secondary gains in:

LESSONS LEARNED

- With the focus on patient safety, the facility was able to restructure the nursing staff, even with staff hesitation about the anticipated changes.
- The need for communication can never be underestimated and needs to be consistently reinforced during any transition.
- Staff required constant encouragement that the facility would not allow staff to “fail” with the new system and that the process would be continually evaluated.

- consistent observation of skin conditions with designated treatment nurses;
- efficient use of current full-time staff and an increase in staff productivity;
- appropriate use of per diem staff; and
- facility cost savings due to efficiency gained from staff restructuring.



Reducing Catheter-Associated Urinary Tract Infections *Stern Family Center for Extended Care and Rehabilitation/North Shore-Long Island Jewish Health System*

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Control Coordinator; (516) 562-8191; jfilardi@nshs.edu

PROJECT DESCRIPTION

The Stern Family Center for Extended Care and Rehabilitation experienced a marked increase in facility-acquired catheter-associated urinary tract infections (CAUTIs) in 2006. These findings were presented and discussed at monthly performance improvement coordinating group meetings. A task force was formed and a facility-wide approach was initiated to:

- review and revise policies and procedures;
- provide interdisciplinary staff education;

LESSONS LEARNED

- Compliance with the standard of practice exemplifies optimum outcomes.
- Facility-acquired CAUTI can be reduced through education, adherence to policy and procedure, and close monitoring.
- LOS and Medicare costs are reduced by decreasing infections, laboratory diagnostics, and medication usage.

- revise the standard of practice to effect the removal of catheters within 24 hours;
- assess patients upon admission for continued catheter use within 24 hours, if indicated;
- promote a culture of safety by infection control staff enforcing and monitoring appropriate hand hygiene;
- provide frequent and adequate perineal care;
- insert indwelling catheters using an aseptic technique;
- change indwelling catheters monthly;
- maintain urinary drainage bags below the level of the bladder;
- use a clean receptacle to empty the drainage bag;
- monitor indications for indwelling catheter use;
- use trial voiding when appropriate; and
- monitor post-void residual.

OUTCOMES

- Over three years, the Stern Center reduced facility-acquired CAUTIs by 75%.
- This increased patient satisfaction while decreasing length of stay (LOS) and the cost of treatment and medical supplies.
- Nursing staff efficiency was enhanced.
- Antimicrobial usage was reduced.



Reduction in Catheter-Related Bloodstream Infections in a Pediatric Post-Acute Setting
St. Mary’s Hospital for Children

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PROJECT DESCRIPTION

St. Mary’s Hospital for Children is in its second year of a collaboration with the National Association of Children’s Hospitals and Related Institutions (NACHRI) to decrease central line-associated bloodstream infections (CLABSI) in children who reside in a pediatric post-acute setting. The Centers for Disease Control and Prevention’s National Healthcare Safety Network (NHSN) established national benchmarks for neonatal and pediatric intensive care units, but those benchmarks do not represent St. Mary’s long-term patients. The team began by establishing nationally accepted definitions for data collection, tracking, and reporting infection rates. The next step involved a careful review of standards of care and clinical practice guidelines. The team concurred that the most common cause of infection for this population is contamination at the skin level. Once the skin is contaminated, organisms move into the tract of the catheter, contaminate the catheter hub, and ultimately move into the patient’s bloodstream. This project focused on preventing the contamination of the skin and subsequently, the catheter.

LESSONS LEARNED

- Specialty hospitals have a longer length of stay, increasing the likelihood of acquiring a health care-associated infection.
- Maintaining a sterile field contributes significantly to decreasing CLABSIs.
- Ongoing evaluation of new and existing products associated with central lines is essential to the process.
- Collaboration with similar facilities helps align standards of care and establish realistic benchmarks and best practices.

OUTCOMES

- Criteria were established to define one formula for calculating rates.
- Overall infection rates decreased.
- Total parenteral nutrition was identified as a contributing factor for increased infections that must be evaluated separately.
- A consolidated kit was created to maintain a sterile field.
- When cleaning the hub of a catheter, alcohol and betadine were replaced with Chlorhexadine.
- Policies related to practice and products were revised.



Reducing Facility-Acquired *Clostridium Difficile*-Associated Disease

Stern Family Center for Extended Care and Rehabilitation/North Shore-Long Island Jewish Health System

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PROJECT DESCRIPTION

The Stern Family Center for Extended Care and Rehabilitation experienced a marked increase in facility-acquired *Clostridium Difficile*-Associated Disease (CDAD) during second quarter of 2008. The infection control committee formed a sub-committee to improve performance. Based on the sub-committee findings, a facility-wide approach to reduce CDAD was adopted:

- A terminal clean team (“T-Team”) was created with trained environmental personnel and each T-Team member was issued additional uniforms that were laundered onsite.
- A cleaning checklist was developed for the two-step, two-person, 1½-hour cleaning process.

- Environmental services staff schedule a minimum of one T-Team member for each day of the week.
- Hand hygiene is reinforced and monitored regularly.
- Facility-wide communications included periodic infection control updates by e-mail, and a nursing alert to environmental services when precautions were discontinued or in advance of discharge.
- The use of quinolone antimicrobials was limited.
- Maintenance staff painted rooms and replaced ceiling tiles.
- Administration increased the environmental services budget.

LESSONS LEARNED

- Continuous, open communication and compliance with best practices improves outcomes.
- Facility-acquired CDAD can be reduced through education, adherence to policies and procedures, and close monitoring of feedback.
- Length of stay and Medicare costs can be reduced by eliminating infections—an estimated savings of \$3,000 to \$7,000 per infection.

OUTCOMES

- The Stern Center achieved a 33% reduction in facility-acquired CDAD.
- The environmental staff’s self-esteem has improved because of this initiative.
- Success was recognized by an employee party and an article and photo in the facility newsletter.



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