

PINNACLE AWARD NOMINATIONS FOR  
QUALITY AND  
PATIENT SAFETY  
2015



Healthcare Association  
of New York State



## INTRODUCTION

The Healthcare Association of New York State (HANYS) is pleased to present this compendium of submissions for the 2015 Pinnacle Award for Quality and Patient Safety.

Hospitals, nursing homes, and home care agencies across the state are in the midst of rapid and comprehensive healthcare transformation. The pace continues to accelerate as government and providers alike seek to achieve the “Triple Aim” of improving health, enhancing care quality, and lowering costs.

As these submissions show, HANYS’ members are committed to continuously improving quality, safety, and efficacy of care, and have made tremendous advances in redesigning the way care is delivered in their communities to meet these goals. Providers are focusing on how to best deliver care across the continuum, and how to best serve populations most in need of compassionate, patient-centered care.

HANYS thanks its members for their generosity in sharing their ideas, experiences, and successes through their Pinnacle Award submissions. We encourage all members to take advantage of the information in this publication as a means to inform and accelerate ongoing efforts to improve quality and patient safety.

Sincerely,



Dennis P. Whalen  
President  
HANYS



Kathleen Ciccone, Dr.P.H., R.N.  
Executive Director  
HANYS Quality Institute

## 2015 WINNERS



### ▼ Post-Acute/Outpatient Provider

#### **Reducing Hospitalization in Long-Term Chronic Critically-III Residents/Patients**

**The Silvercrest Center for Nursing and Rehabilitation, Manhattan**

*Michael Tretola (left), Senior Vice President and Administrator, Denise Lawson-Munroe (center), Director of Performance Improvement, and Loretta McManus, R.N. (right), Vice President, Patient Care Services, receive HANYS' 2015 Pinnacle Award for Quality and Patient Safety for a Post-Acute/Outpatient Provider for The Silvercrest Center for Nursing and Rehabilitation's Reducing Hospitalization of Long-Term, Chronic, Critically III Residents/Patients initiative. The Pinnacle awards were presented during HANYS' 47th Annual Membership Conference on June 25.*



### ▼ Small Hospital (Less than 100 Beds)

#### **Care Transitions Program to Reduce Readmissions**

**University of Vermont Health Network—Elizabethtown Community Hospital**

*Heather Reynolds, Director of Quality Improvement, accepts HANYS' 2015 Pinnacle Award for Quality and Patient Safety for a Small Hospital, on behalf of University of Vermont Health Network—Elizabethtown Community Hospital for its Care Transitions Program to Reduce Readmissions initiative. Presenting the award is HANYS President Dennis Whalen.*



### ▼ System/Large Hospital (More than 100 Beds)

#### **IMPACT: Inpatient Multidisciplinary Pediatric Asthma Care Team**

**Strong Memorial Hospital, University of Rochester Medical Center**

*Accepting the 2015 Pinnacle Award for Quality and Patient Safety for a Large Hospital or Hospital System on behalf of Strong Memorial Hospital for its IMPACT: Inpatient Multidisciplinary Pediatric Asthma Care Team is Eric Biondi (left), Assistant Professor of Pediatrics and a Pediatric Hospitalist at University of Rochester Medicine. Presenting the award is HANYS President Dennis Whalen.*

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CHAPTER 1:

# CLINICAL IMPROVEMENT

## From Bottom to Top—Quality Clinical Indicators

Auburn Community Hospital

### ▼ LESSONS LEARNED

- Sustained improvement requires constant re-education as to “why, what, and how” for core measure and SCIPs for both providers and nursing staff.
- Optimization of the electronic medical record is key for the implementation and sustainment of measures such as computerized provider order entry sets, hard stops, and discharge instructions.
- Providers and nursing staff want to provide evidence-based, quality care to patients.

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### ▼ PROJECT DESCRIPTION

With a change of leadership in Auburn Community Hospital’s quality management department, clinical indicator scores—Core Measures and Surgical Care Improvement Project (SCIP) measures—were reviewed for 2011 and found to be among the lowest in the nation. Understanding that this was not only an implication for the quality of care provided to patients, but also a financial consideration under the Medicare Value-Based Purchasing (VBP) program, a rapid call to action was coordinated by the quality management leadership and led by the chief quality officer and physician champions designated for each risk area. This coordinated team reported to, and was held accountable by, the governing board.

Physician-led performance improvement teams worked diligently to develop systems that would be physician- and nurse-friendly and cover each aspect of the Core Measure and SCIP programs. With sharp and steady implementation of sound evidence-based practices in each area of the clinical indicators, the organization began to see a rise in scores. Two years later, with sustained improvement in clinical indicator scores, a direct correlation was found in a decrease in overall readmission rates, and a sustained decrease in length of stay. Most significantly, Auburn Community Hospital found itself in the 93rd percentile of nationwide VBP, compared to its status as the worst hospital in the nation two years prior.

### ▼ OUTCOMES ACHIEVED

- Evidence-based, patient-centered care is provided to patients.
- The overall readmission rate decreased by 21.2%.
- A direct correlation was found in decreased overall length of stay as Auburn improved the discharge process for patients.
- VBP financial incentives were achieved.
- There is increased pride and achievement in provider and staff performance.

# Standardization of Wound Evaluations and Reduction in Treatment Delays through a Systematic Process Incorporating IT and Digital Imaging

Coney Island Hospital, Brooklyn

## ▼ LESSONS LEARNED

- Technology and education are replicable and transferrable in any and all healthcare facilities.
- A nurse's or physician's evaluation of an ulcer or wound will have some degree of subjective interpretation, whereas an image can demonstrate and confirm the assessment.
- A decline in the number of patients admitted with pressure ulcers and those who develop nosocomial ulcers is attributable to improved communication and sharing of best practices as the patient transitions to different levels of care.

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## ▼ PROJECT DESCRIPTION

As part of the chart review process, Coney Island Hospital identified a knowledge deficit regarding the etiology of wounds and ulcers, and the consistency of subsequent evaluation and treatment. The hospital introduced an information technology (IT) and digital imaging system to facilitate improvement in the assessment and treatment of all wounds, ulcers, and skin conditions.

The program aims to:

- standardize the evaluation and treatment recommendations for wounds, ulcers, and skin conditions;
- develop a specialized multidisciplinary team with certified wound care registered nurses to ensure that every patient with a wound, ulcer, or skin injury is evaluated within 24 hours of admission;
- utilize an electronic software program with a digital image to eliminate subjectivity of the wound description; and
- provide ongoing education to the care team on wound types and current evidence-based treatment.

## ▼ OUTCOMES ACHIEVED

- The IT system provided an accurate baseline objective measurement that facilitated treatment and reduced variation in the assessment process.
- The accuracy of documentation of pressure ulcers and other wounds with a digital image validates and supports the complete objective evaluation.
- The incidence of hospital-acquired pressure ulcers was reduced from 0.71 (90th percentile) to - 0.15 (25th to 50th percentile) from the third quarter of 2013 to the third quarter of 2014 (Source: National Database of Nursing Quality Indicators).
- International and national benchmarking supports that the incidence of nosocomial pressure ulcers at the facility is on a downward trend from 2013 to 2014.

## Step-Down Trauma Transition Program

Erie County Medical Center Corporation, Buffalo

### ▼ LESSONS LEARNED

- Nurses were able to identify key safety metrics for individualized patient care.
- Staff recognized the need for transitions to be strategically planned and based upon the patients' psychological and clinical considerations.
- Patient/family continuum of care anxiety has been reduced and positive communication among nurses and patients has been established.

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### ▼ PROJECT DESCRIPTION

The Step-Down Trauma Transition Program is a quality improvement project created to promote safe patient transfers and improve communication between patients, families, and nurses. The program focused on transfers from Erie County Medical Center's Trauma Intensive Care Unit (TICU) to the step-down trauma floor, 7z2. Before the plan was implemented, nursing staff on 7z2 were not made aware of patient/family preferences and routines. Often the first-time 7z2 nursing staff met transferred patients and their families upon arrival in the step-down unit. This process created unneeded stress, anxiety, and confusion for patients and families.

The basis of the program is a communication toolkit that includes:

- *Verbal/Written Transition Form:* This form, completed by the TICU nurse before the patient transfer, allows for communication of concerns, non-clinical challenges, patient routines, patient challenges, and family customs and preferences. This provides the new nursing team an individualized description.
- *Individual Visitation:* The TICU nurse accompanies the family and patient to the step-down floor and spends time with the new nursing team, establishing transition methods and care plans. During this transitional meeting, all parties are able to ask questions; share clinical information, routines, goals, and spiritual needs; and discuss expectations for step-down care. After the patient has been admitted to the step-down unit, the TICU nurse/manager visits the patient and family to offer further encouragement and support.

### ▼ OUTCOMES ACHIEVED

- Anxiety and confusion are reduced and patient satisfaction for patients and families is increased as measured by a reduction of patient/family complaints.
- Patient safety is enhanced due to better communication.
- Fewer patients are transferred back to the TICU.

# Concurrent Review of Multidisciplinary Stroke Program to Support Excellence in Care

Forest Hills Hospital

## ▼ LESSONS LEARNED

- The multidisciplinary approach has enriched the stroke program by drawing from experts in multiple disciplines who are bound to a common purpose.
- The multidisciplinary approach has provided an opportunity to view processes from different disciplines, remove boundaries, and support collaboration.
- Continuous monitoring and concurrent review provides a timely opportunity for corrective action and feedback to ensure appropriate evidence-based care is provided.

## Contact

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## ▼ PROJECT DESCRIPTION

Forest Hills Hospital used a concurrent review of the critically-timed stroke process indicators to improve the quality of care. Through the use of a Stroke Code, the hospital focused on:

- turnaround-time for door-to-physician assessment;
- door-to-computerized tomography (CT) scan time;
- the door-to-CT scan read time; and
- time-to-tissue plasminogen activator (TPA).

Several other inpatient measures are also required and concurrently reviewed: antithrombotic medication, anticoagulation therapy, deep-vein thrombosis prophylaxis, cholesterol-reducing drugs, and smoking cessation. These therapies are all aimed at reducing death and disability and ultimately improving the lives of the stroke patient.

When comparing the hospital's results of the same indicators to all New York City (NYC) and New York State (NYS) hospitals, Forest Hills Hospital benchmarks positively. To achieve further improvement, all cases presenting with atypical symptoms are reviewed and discussed at the monthly stroke meeting for any learning opportunities.

## ▼ OUTCOMES ACHIEVED

- Seventy-four percent of the acute patients with onset of symptoms within six hours have been assessed by emergency department (ED) physicians within ten minutes, compared to the NYC rate of 59% and NYS rate of 62%.
- Seventy-four percent of the acute patients with onset of symptoms within six hours had brain imaging completed within 25 minutes, compared to the NYC and NYS rates of 60%.
- Seventy-nine percent of acute patients with onset of symptoms within six hours had brain imaging read within 45 minutes, compared to the NYC rate of 63% and NYS rate of 65%.
- All of the hospital's eligible ischemic stroke patients have received TPA within 60 minutes of arriving at the hospital, compared to the NYC rate of 76% and NYS rate of 75%.
- Additional improvements were experienced in seven other stroke measures.

# Improving Quality and Patient Safety in the Operating Room through Remote Video Auditing

Forest Hills Hospital

## ▼ LESSONS LEARNED

- Timely feedback and correction has improved the spirit of the time-out procedure.
- Continued briefs with staff have resulted in open communication.
- Data support physician group commitment.

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## ▼ PROJECT DESCRIPTION

In 2012, a Remote Video Auditing (RVA) program was implemented to enhance the surgical safety checklist, or “time-out,” which requires all staff who are involved in the operative procedure to stop and meet as a team in the operating room with the patient to address all questions and evaluate needs for additional equipment, medications, fluids, or radiological procedures.

The hospital installed cameras with low resolution in the eight operating rooms and the office of the Director of Nursing for the Operating Room, providing the director the ability to monitor the time out in the different operating rooms. This program was enhanced in 2013 to support an interactive exchange among the surgical team. The RVA technology was upgraded to provide real-time data and feedback during the time out. RVA is also used to monitor the overnight terminal cleaning processes. In addition, RVA monitors operating room turnover times between cases. This information provides realistic information to the practitioner about the expected time his or her case will start. This also allows staff the opportunity to speak with patients and families who are waiting to have a surgical procedure, which helps them be involved and feel included in their care. RVA monitoring turnover times can help the surgical team stay on track and may translate into increased revenue.

## ▼ OUTCOMES ACHIEVED

- Distractions during time-outs are virtually non-existent because the surgical team is focused.
- All members of the surgical team are encouraged to speak up and raise concerns, without fear of reprisal.
- Compliance to the Surgical Safety Checklist rose from 74% to 99%.
- RVA monitoring of the terminal cleaning from each operating room every 24 hours resulted in an increased compliance from 9.8% to 98%.

# ABCDE Bundle Implementation in a Community Hospital Critical Care Setting

Kenmore Mercy Hospital, Catholic Health

## ▼ LESSONS LEARNED

- Proactive approaches are needed for identification and prevention of patients at risk for delirium.
- Teamwork/communication is essential for the bundle to work. Keeping every team member, including family members, educated on the bundle and involved will best ensure goal achievement.
- Bundles must be ordered on admission and reviewed during rounding to evaluate the bundle elements and the patient progress to both short- and long-term goals.

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## ▼ PROJECT DESCRIPTION

Critical care patients face many challenges—not just the physiologic results of illness, but also the potential complications of life-saving therapies. Both the Society of Critical Care Medicine (SCCM) and the American Association of Critical Care Nurses have identified that patients who have prolonged mechanical ventilation require more sedation, more physical restraint use, have a higher risk for delirium, and face more negative consequences of prolonged immobility such as morbidity and mortality.

The nurses in the intensive care unit (ICU) proposed implementing recommendations from the “Awakening and spontaneous Breathing Coordination, Delirium screening, and Early mobility” (ABCDE) bundle and the SCCM guidelines on pain, agitation, and delirium (PAD) management into the daily protocol of their critical care patients. The ICU nurses presented their recommendations to the Critical Care Council and the administrative team, where a consensus to move forward was achieved.

An inter-professional planning group consisting of ICU nurses, ICU intensivists, respiratory and physical therapists, and administrative advisors developed the workflow for implementation, which was then presented to and approved by the Institution Review Board. Data collection tools were developed and three months of retrospective chart audits were completed for a baseline. Staff education began and included a review of the rationale for implementation, the necessary changes in the day-to-day workflows required, and an opportunity to express additional ideas or concerns.

The week prior to implementation, the staff practiced the Richmond Agitation-Sedation Scale (RASS), Behavioral Pain Scale (BPS), and delirium scales to ensure inter-rater reliability and scale use references were placed in each chart. The bundle was initiated February 17, 2014, and weekly reviews continued for one year.

## ▼ OUTCOMES ACHIEVED

- Patients out of bed increased from 23% to 78%.
- Restraint utilization decreased from 46% to 19%.
- Family presence at the bedside increased from 31% to 90%.
- Ventilator days decreased from 5.53 to 5.26 per 1,000 ventilator days.

# The Impact of Continuous Pulse Oximetry Monitoring with Direct Clinician Notification on a Post-Surgical/Medical-Nursing Floor

Mercy Hospital of Buffalo

## ▼ LESSONS LEARNED

- Direct clinician notification increased surveillance and awareness of changes in patient status prior to life-threatening events and reduced all-cause patient death 88%.
- Narcotic (opioid) administration was modified due to awareness of patient status and recognized risk for respiratory depression.
- An added care advantage: every patient monitored has an overnight oximetry and is screened for obstructive sleep apnea.

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## ▼ PROJECT DESCRIPTION

The Joint Commission and the Centers for Medicare and Medicaid Services (CMS) have recommended continuous monitoring for patients receiving narcotic medications for pain, which can depress the respiratory drive and cause clinical deterioration. Even with frequent assessments, patients still suffer from adverse events.

A safety project team of physician, nursing, and respiratory staff took a multidisciplinary, proactive approach to advance safe care for acute patients on the post-surgical/medical floor. A pulse oximeter was mounted at each bedside and wired to a central monitor at the nursing station, enabling specialized monitoring of all patients admitted to the pilot study floor. Direct nurse notification via pager of clinically significant events promoted early intervention for patients experiencing deteriorating or life-threatening conditions. The oximeters monitored oxygen saturation (SpO<sub>2</sub>) and pulse rate for all patients and monitored respiratory rate for patients meeting criteria.

To minimize nuisance alarms and enhance “actionable alarms” the hospital developed safety-focused alarm criteria. Outcome metrics were established to validate the impact of continuous oximetry monitoring using a 15-month baseline period compared to a 15-month trial period. The hospital monitored patient demographics (age, gender, ethnicity), rapid response team (RRT) activations, transfers to the intensive care unit (ICU) post-RRT, case-mix index (CMI), mortality rate per 1,000 patient days, length of stay, and Naloxone (Narcan) administration events to reverse negative narcotic effects.

## ▼ OUTCOMES ACHIEVED

The 15-month baseline compared to 15-month project trial:

- Mortality decreased 88%; 0.7 to 0.1 per 1,000 patient days. This impact was beyond narcotic-related respiratory depression.
- Patient acuity CMI increased significantly; 1.823 to 1.974. Physicians wanted their sickest patients monitored for safety.
- RRT activations increased significantly; 7.6 to 10.7 per 1,000 patient days, with no change in ICU transfers.

## Code STEMI

Mercy Medical Center, Rockville Centre

### ▼ LESSONS LEARNED

- By involving external partners in this initiative, the staff were able to build collaborative working relationships with EMS and serve a common goal, to improve outcomes for patients.
- Analyzing processes for inefficiencies can lead to a more efficient process.
- Pre-arrival communication with EMS led to an improvement in the transition of care.

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Research shows that quickly restoring blood flow through coronary arteries after an ST elevation myocardial infarction (STEMI), a type of heart attack, can minimize permanent damage to the heart and improve chances of morbidity and mortality. The “door in, door out” (DIDO) time of patients transferring from an emergency department to a catheterization laboratory at another facility is rarely under the recommended threshold of 45 minutes. Long transfer times increase morbidity and mortality as “time is myocardium.”

Mercy Medical Center’s emergency department recognized in 2013 that the facility needed to improve STEMI DIDO times. Knowing it needed to identify the patients sooner and rearrange the process to make it more efficient, the team elected to utilize Lean concepts and value stream mapping to understand the current process.

The team discovered that the process had 12 cumbersome steps, with many opportunities for improvement. This led to the development of a Code STEMI: signs are posted near the triage area to alert patients to notify the triage nurse immediately if they have chest pain or dyspnea. Electrocardiograms (EKGs) are now performed on chest pain patients initially in the triage area, instead of waiting for a bed in the emergency department (ED). A STEMI transfer order set was developed. Before arrival of the emergency medical services (EMS) transfer team, a phone report is given to reduce EMS turnaround times. EMS uses this report to pre-program the medication pumps en-route. Another delay identified was time spent changing the intravenous (IV) tubing due to incompatibility. To further streamline the process, the team asked EMS to use IV connecting tubing that is compatible with the hospital’s setups to allow for quick IV medication exchange on arrival. This approach allows for a “swoop and scoop approach” by EMS and results in a reduction in DIDO times and improved patient care.

### ▼ OUTCOMES ACHIEVED

- Chest pain to EKG times decreased from 24 minutes to 4.75 minutes by the second quarter of 2013, an 80% improvement.
- AMI/EKG times decreased from 29 minutes to 7.89 minutes by the second quarter of 2013, a 73% improvement.
- STEMI DIDO times decreased from 87.6 minutes to 38.4 minutes by the second quarter of 2013, a 56% improvement.

# Improving Timeliness of Patient Evaluation and Nutrition Education to Address Patient-Specific Needs

Mount Sinai Beth Israel, Manhattan

## ▼ LESSONS LEARNED

- It is critical to educate nursing and providers on new initiatives to ensure awareness and compliance, where needed.
- Presenting the data in a monthly fashion helps to track issues (staffing shortages, process failures, etc.), as it necessitates a close examination of performance on a very regular basis.
- In January 2015, the data for timeliness on initial encounter fell just short of the goal. Being able to show this dip to administration allowed for the provision of an additional per diem registered dietitian for the team to cover two simultaneous leaves of absence.

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Beginning in November 2013, to best prioritize initial nutrition assessment and follow-up of patients, Mount Sinai Beth Israel implemented nutrition risk level guidelines to address exactly the timeframe in which patients need to be seen, according to their nutrition risk acuity. The hospital then tracked the timeliness of each patient encounter, both initial assessments and follow-up visits, to ensure it was meeting or exceeding its goal of 90% timeliness.

To ensure timely identification and assessment of pressure ulcer patients, the information technology department distributed a daily roster of all hospitalized patients with pressure ulcers. All dietitians review the roster daily, ensuring that pressure ulcer patients are seen quickly.

To comply with the documentation of patient education in the Interdisciplinary Patient/Family Education Record, Mount Sinai Beth Israel tracks and analyzes the data of each initial nutrition education given, and follow-up education when appropriate. Diet education is always provided to patients on non-transitional therapeutic diets.

## ▼ OUTCOMES ACHIEVED

- Timeliness of nutrition assessments and interventions improved.
- Compliance with documentation of nutrition education requirements improved.
- Overall incidence and severity of pressure ulcers decreased across the institution.

## Influenza Vaccination— A Call for Arms: Roll Up or Mask Up

Mount Sinai Beth Israel, Manhattan

### ▼ LESSONS LEARNED

- Visible top-level leadership commitment to the organizational goal of HCW influenza vaccination was instrumental in this successful strategy for attaining high vaccination rates.
- The aggressive pursuit of a clearly defined goal was important in the achievement of high vaccination rates and overcame challenges related to vaccine efficacy.
- Sharing of vaccination data in multiple venues fostered a shared sense of purpose between labor and management and a sense of pride as vaccination rates improved.

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### ▼ PROJECT DESCRIPTION

Annual influenza vaccination has long been recommended for healthcare workers (HCWs) to reduce morbidity associated with influenza in healthcare settings. However, data have shown that HCW vaccination coverage is suboptimal. During the 2012-2013 flu season, coverage was 72% nationally and 60% for New York State.

Mount Sinai Health System, with more than 37,000 HCWs, used the Plan-Do-Study-Act (PDSA) methodology to address barriers to HCW acceptance of influenza vaccination. One year before the Department of Health (DOH) mandate, masking for those not vaccinated was required at some hospitals. In the hospitals that masked, the vaccination rate was 59% compared to 63% in other hospitals where masking was not required. Mount Sinai learned that a comprehensive vaccination strategy must rely on more than requiring surgical masks for HCWs who decline to get vaccinated.

Strategies used to improve HCW vaccination rates included:

- a clearly defined influenza vaccination goal that was adopted as a priority by the health system's Quality Leadership Council;
- systematic and repetitive education about the benefits and safety of vaccination;
- use of push and pull pods to make vaccine readily accessible;
- visible top-level commitment, including executives and members of the governing board, to promote, encourage, and provide vaccination;
- partnership between labor and management to create a shared sense of purpose and commitment to the vaccination program;
- weekly monitoring of HCW vaccination rates; and
- incentives and recognition when goals were met.

### ▼ OUTCOMES ACHIEVED

- HCW influenza vaccination rates increased in each of the Mount Sinai hospitals since 2012.
- There was a significant increase in the overall HCW vaccination rate, from 60% in the 2012-2013 influenza season to 91% in the 2014-2015 season, which is also much higher than national and DOH reported vaccination rates.
- Vaccination rates increased in all categories of HCWs, with the greatest increase seen in licensed independent practitioners.

# Improving Inpatient Stroke Code-to-Needle TPA Treatment Times

Mount Sinai Beth Israel, Manhattan

## ▼ LESSONS LEARNED

- Teamwork through stroke code, including a team leader, house staff, and nursing staff, is critical.
- Education is essential for house staff and nursing staff.
- Continued monitoring is critical, including self-assessments and identification of problem areas.

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Treating acute stroke that occurs while a patient is in the hospital often takes longer than when a patient arrives to the emergency department (ED) via emergency medical services (EMS) from home with acute stroke, where all the services needed are concentrated and where performance can be perfected with “door-to-needle” times approaching as fast as 20 minutes from patient arrival. This is problematic in hospitals world-wide.

Mount Sinai Beth Israel endeavored to evaluate this process to determine what delays patient treatment and to provide shortened methods of evaluation and preparation to allow speedier treatment.

Methods included:

- retrospective cohort study of the stroke codes that occurred between 2010 and 2013;
- stroke codes ending in tissue plasminogen activator (TPA) administration or endovascular intervention were included (some acute Rx); and
- comparing stroke codes in the emergency room versus inpatient setting, a “p” value of <0.05 was considered statistically significant.

Mount Sinai Beth Israel found that in the inpatient setting there was a significant delay in the time from stroke code to computerized tomography (CT) scan and to TPA administration. The main source of the delay is the time from stroke code to CT. The facility implemented interventions to shorten these delays, including:

- training house staff on the stroke code protocol;
- distributing reference cards with basic stroke code protocol steps for house staff;
- creating a special pharmacy ticket to gain rapid access to IV TPA;
- providing transport elevator access for neurology residents using a special key pass; and
- marking paper orders available in CT scanners for when the computer is down.

## ▼ OUTCOMES ACHIEVED

- Average stroke code-to-TPA treatment time was reduced from 80.3 minutes pre-intervention to 43.25 minutes post-intervention.
- Average stroke-to-CT scan time was reduced from 32.25 minutes pre-intervention to 22.75 minutes post-intervention.

## The Pep Up Protocol—Meeting the Caloric Needs of Critically-Ill Patients

Nassau University Medical Center, East Meadow

### ▼ LESSONS LEARNED

- Optimization of nutrition support requires the coordination of multiple disciplines.
- A nurse champion is necessary for ongoing coordination and education of staff for appropriate protocol implementation.
- Ongoing surveillance of all aspects of the protocol is imperative to maintain desired enteral provision.

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### ▼ PROJECT DESCRIPTION

Nutritional support during critical illness is one of many therapies influencing patient outcomes. Early initiation and optimization can result in a reduction in morbidity and mortality. Nassau University Medical Center's Pep Up Protocol is one initiative with success in meeting the daily caloric needs of this population.

Nassau University Medical Center's participation in board-approved research projects has shaped its evidence-based best practice, and significant positive change has occurred as a result. After completion of the Pep Up trial (Clinical Evaluation Research Unit, Kingston, Ontario), an adaptation of the Pep Up Protocol was created and implemented in Nassau University Medical Center's Medical Intensive Care Unit (MICU). The purpose is to expedite the initiation of nutrition support and adequate caloric intake for critically-ill patients to improve outcomes.

The protocol maintains an emphasis on early enteral access, initiation, formula choice, dosing by volume using patient weight, trophic enteral nutrition during inotropic therapy, built-in method of infusion rate changes based on the actual volume delivered, proactive use of prokinetic agents, and the use of gastric residual volume and diarrhea flow charts.

Barriers to adequate nutritional provision were identified and addressed, resulting in a reduction of variability and a proactive approach to enteral feeding. Physicians are responsible for entering the protocol orders written as a dose volume per day. Nurses adjust the run rates to assure the full nutrition dose is provided within a 24-hour period. The nutrition support goal is for initiation within 48 hours of admission and more than 80% enteral nutrition delivered based on the doctor's order. This interdisciplinary effort has shown a 93% increase from baseline, achieving the facility's goal.

### ▼ OUTCOMES ACHIEVED

- Patients are identified early for initiation of enteral nutrition.
- Appropriate enteral access is obtained.
- An enteral order set is used to initiate the protocol.
- Nurses are empowered to achieve the desired daily goal.
- Actual enteral provision has improved, despite fasting.
- There was a 93% increase from baseline in achieving enteral nutrition delivered based on a physician order.

# Protecting Patients, Employees, and the Communities We Serve: Responding to the Threat of Ebola Virus Disease

North Shore-Long Island Jewish Health System, Great Neck

## ▼ LESSONS LEARNED

- Leadership commitment to protect patients, employees, and the public enabled the health system to fully utilize its resources and expand its normal emergency preparedness plan to include extensive training on EVD.
- A multi-tiered/multi-pronged approach was required to educate staff and ensure employees had the information and skills needed, based on their job description, to recognize and respond appropriately and competently to EVD.
- A detailed plan is required to maintain the ongoing competency of staff for high-risk, low-volume conditions.

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The rapid emergence of Ebola virus disease (EVD) as a serious threat to the New York metropolitan area led to an immediate response by North Shore-LIJ to develop a preparedness plan to meet the needs of patients, employees, and the communities the health system serves while preserving its ability to maintain normal operations at all hospitals and deliver continuous care to all patients. This virus has the potential to spread when the index case is not recognized and managed using strict infection prevention measures.

Health system leadership activated its corporate emergency management structure to assess its preparedness for an EVD epidemic and communicated the need for an EVD preparedness plan to the board of trustees in August 2014. Senior leadership, together with operational and clinical experts from across the health system, and support groups including the Center for Emergency Medical Services (CEMS), emergency department (ED), procurement, laboratory, and quality management, convened to develop an EVD response plan.

## ▼ OUTCOMES ACHIEVED

- More than 45,000 employees were educated on EVD management.
- More than 65,000 individuals took the following courses:
  - EVD management (39,260 individuals)
  - Use of Personal Protective Equipment (PPE) (25,333 individuals)
  - Training Specific for the Specialized Treatment Center (STC) (536 individuals)
- More than 500 training drills were held on donning and doffing PPE at North Shore-LIJ facilities and ambulatory sites using direct observation.
- More than 600 individuals were trained on Level III PPE as part of ongoing emergency preparedness training.
- New York State designated North Shore-LIJ as a regional resource for responding to an EVD case.

# Enhancement of the Clinical Practice Guidelines for All Elective Hip, Knee, and Joint Replacements

Northern Dutchess Hospital, Rhinebeck

## ▼ LESSONS LEARNED

- Non-narcotic pain control allows the patient to fully participate in physical therapy at an earlier stage of recovery.
- Decreased blood loss prevented blood infusions.
- Revised practice guidelines facilitated better outcomes, standardized processes, and an improved patient experience.

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## ▼ PROJECT DESCRIPTION

Northern Dutchess Hospital changed its clinical practice guidelines in three major areas to improve the patient experience, optimize pain control, reduce excessive blood loss, and promote early ambulation in an effort to decrease overall length of stay. Its first program enhancement was the use of Exparel (Bupivacaine liposome) for all total joint replacements in January 2014. Exparel is injected into the joint space prior to closing the incision and provides the patient with up to 72 hours of pain relief. Patients undergoing a total knee replacement also receive an adductor canal block by the anesthesiologist, which provides 24 hours of pain relief and does not impact quadriceps strength or mobility, allowing for early ambulation.

The use of Exparel and the adductor canal block combined with routinely-scheduled intravenous nonsteroidal anti-inflammatory drugs (NSAIDs) reduces the overall use of narcotics and adverse effects associated with narcotic use.

The second improvement was to administer two doses of Tranexemic Acid to patients to reduce the amount of blood loss during surgery and post-operative incisional drainage. This resulted in a decrease in the number of transfusions.

The third change was an evaluation and ambulation by physical therapy four hours post-operatively.

The overall benefit of the improvements made to the clinical practice guidelines is reflected in the significant decrease in length of stay, decreased post-operative pain, increased mobility, improved patient experience, and an increase in the number of patients who are discharged home, as opposed to an inpatient rehabilitation facility. Education was provided to staff through the electronic learning system and inservice education by one of Northern Dutchess Hospital's lead orthopedic surgeons and medical director of anesthesia. Patients and caregivers are educated on clinical practice guidelines during their pre-operative joint replacement class led by the bone and joint coordinator.

## ▼ OUTCOMES ACHIEVED

- Length of stay decreased to 2.2 days for total hip replacements and 1.9 days for total knee replacements in 2014 (3.1 for both in 2012).
- Seventy-five percent of patients are discharged to home (not an inpatient rehabilitation facility). This is a 13% increase since starting the program in 2012.
- The number of blood transfusions has decreased since the program's initiation; 54 in 2012, 17 in 2013, and 15 in 2014.

## SepsUS: A Team Approach to Improving Outcomes

NYU Langone Medical Center, Manhattan

### ▼ LESSONS LEARNED

- Improving sepsis outcomes requires a multidisciplinary team approach and strong support from senior leaders.
- Electronic sepsis alerts assist with early recognition of sepsis.
- Designing a workflow and automating as many practices as possible provides support to all clinicians and has a positive impact on both processes and outcomes.

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### ▼ PROJECT DESCRIPTION

There are approximately 750,000 cases of sepsis in the U.S. each year, with mortality rates for severe sepsis as high as 30% to 50% (Institute for Healthcare Improvement, 2015).

In 2010, NYU Langone Medical Center's emergency department (ED) and medical and surgical intensive care units enrolled in the STOP Sepsis Collaborative. Participation in this initiative heightened our awareness of the need to assemble a hospital-wide, multidisciplinary team with the goal of improving care processes and outcomes for these challenging patients. In 2011, with support from hospital leadership, a sepsis oversight committee was established, which works to develop and disseminate resources that assist in identifying sepsis and supporting best practices.

As early recognition is essential to improving outcomes, the committee set out to collaborate with Medical Center Information Technology (MCIT) to develop an electronic sepsis "alert" that triggers when SIRs criteria are met. To benefit from these "alerts" and since early diagnosis of sepsis and severe sepsis can be difficult due to varied presentations and similarities to other diagnoses, the committee designed an "alert" response workflow that commences with a bedside huddle. Use of a sepsis checklist/algorithm and electronic order set guides the multidisciplinary bedside team through diagnosis and treatment.

To ensure timely administration of antibiotics, Omnicells in the ED and on units were optimized to provide easy access to antibiotics included in the sepsis order set.

### ▼ OUTCOMES ACHIEVED

- Mean length of stay (LOS) for severe sepsis and septic shock patients decreased by 4.92 days since 2012; the LOS index decreased by 24%.
- The mortality index for severe sepsis and septic shock patients decreased by 29% since 2012.

## An Innovative Approach to Delivering Comprehensive Rural Cardiac Care

Olean General Hospital

### ▼ LESSONS LEARNED

- A patient-centered focus helped drive continuous improvement of the hospital's cardiac services.
- Creating a culture of continuous change with consistent monitoring and reporting has been a key factor in sustaining improvement.
- Working together, you can accomplish more than any one entity working alone. This is evidenced through Olean general's partnership with the tertiary health system, emergency medical services providers, and the community.

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In July 2009, Olean General Hospital embarked on a journey to improve outcomes for cardiac patients. The initiative began with the development of the hospital's Chest Pain Center program, which coordinates processes for early recognition, diagnosis, and treatment of patients with acute coronary syndrome (ACS) signs and symptoms. The second stage focused on rural community education and coordination of prehospital care.

Olean General Hospital's goal was to improve cardiac care through timely recognition of symptoms, early activation, emergency medical services (EMS) response, and appropriate prehospital care. Through a series of continuous improvements and the use of Lean A-3 Problem Solving, emergency department patient arrival to electrocardiogram (EKG) read times for patients presenting with signs and symptoms of ACS were reduced from 15 minutes in April 2011 to seven minutes in April 2012, and sustained to date. Patient arrival to Troponin result times were improved from 91 minutes in July 2012 to 37 minutes in September 2013, and sustained. In 2013, the hospital became one of only ten accredited Chest Pain Centers in New York State. This paved the way for the opening of a cardiac catheterization lab in October 2013 as a joint partnership with a tertiary health system, further improving accessibility and timeliness of cardiac care.

Processes were developed to assure timely activation of the ST segment elevation myocardial infarction (STEMI) team through implementation of an electronic notification system along with checklists to expedite patient transfer. Through collaboration with others, systems were developed to facilitate transmission of prehospital EKGs from surrounding counties, allowing for prehospital activation of the STEMI team.

### ▼ OUTCOMES ACHIEVED

- There was a more than 50% reduction in patient arrival-to-first EKG read time.
- The hospital achieved a 71% reduction in patient arrival-to-Troponin result time.
- The national standard for door-to-balloon is 90 minutes, and the national standard for transfer from a non-percutaneous coronary intervention (PCI) facility is 120 minutes. Olean General Hospital's 2014 average door-to-balloon time was 47.4 minutes, and the average door-to-balloon time for transfers from non-PCI facilities was 95.9 minutes.

## Employee Flu Vaccination Acceptance—Improving Annual Rates

Our Lady of Consolation Nursing and Rehabilitative Center,  
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### ▼ LESSONS LEARNED

- The mandating of masks for unvaccinated employees alone did not change the employee flu vaccine acceptance rates.
- Ease of availability and rewards for acceptance had more of an influence on the employee vaccination rates and willingness to participate.
- Flu and vaccine education must be varied to maintain attention and must focus not only on the employee's life at work, but also at home.

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In 2012, based on literature received from The Joint Commission, U.S. Centers for Disease Control and Prevention (CDC), and Centers for Medicare and Medicaid Services (CMS), Our Lady of Consolation created a plan for increasing its annual influenza vaccination acceptance rates.

The infection control preventionist created a timeline for progressive improvement of employee vaccination rates, utilizing group and individual education, flu pods, and rewards for participation. Project guidelines were presented to leadership and the interdisciplinary directors for review and acceptance. The goal of the progressive project was to reach 90% acceptance by the year 2020.

In 2013, the state enacted regulations requiring masks to be worn in healthcare settings by employees who did not receive the flu vaccine, but this did not influence the employee vaccination rate. In 2014, the guidelines for scoring under the Nursing Home Quality Initiative (NHQI) were revised to incorporate an expected of 85% employee vaccination rate to receive credit under this system, in addition to immunization report guidelines. This prompted a review of the facility's current practices related to employee flu vaccine acceptance and new interventions were formulated.

### ▼ OUTCOMES ACHIEVED

- The facility increased the employee vaccination rate from 59% in 2013 to 87% in 2014.
- Flu vaccination rates remained positive among residents/patients, above 96% annually. The numbers of residents diagnosed with positive flu have remained minimal during the past three seasons. Even one diagnosis is treated as an outbreak, with protocols initiated for treatment, unit closure, cleaning, and review of infection control practices.
- Mask requirements for employees who did not receive the flu vaccine are strictly adhered to and monitored by management and supervisory staff daily.

# Patient Engagement as a Strategy to Enhance Patient Safety Using an Oral Anticoagulant Therapy Program

Queens Hospital Center, Jamaica

## ▼ LESSONS LEARNED

- Establishing consistent standardized education is an effective patient safety strategy.
- Focusing on active patient/family engagement is an effective patient safety strategy for warfarin, a high-alert medication.
- This multidisciplinary program was successfully implemented with existing staff (pharmacists, nutritionists, nurses, and medical providers) available in most hospital settings.

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Oral anticoagulant therapy (OAT) poses risks and often leads to adverse drug events due to complex dosing, need for monitoring, and inconsistent patient adherence. Medical literature indicates current patient educational strategies related to anticoagulation vary in format and content, lacking standardization of critical information essential for optimized clinical outcomes.

Queens Hospital Center created a comprehensive anticoagulation educational program for patients/families focusing on the importance of international normalized ratio (INR) monitoring throughout the continuum of care, medication adherence, food-drug interactions, potential adverse drug events, and drug-drug interactions with warfarin, a high-alert medication. This program aims to enhance patient safety by providing self-management tools fostering increased engagement of patients and families in their own care.

A multidisciplinary, structured warfarin educational program was provided to 3,059 patients receiving warfarin over a six-year period (January 2009 to December 2014). Patients were assessed for health literacy, barriers to adherence, and warfarin knowledge. They received standardized educational handouts and an adherence tool (pillbox). Comprehension was assessed using the “teach-back” method. Family members, caregivers, and interpreters were utilized, if needed. Monitoring included tracking warfarin-related adverse drug events and hospital readmissions related to bleeding or clot formation.

## ▼ OUTCOMES ACHIEVED

- On health literacy assessment, 28% of patients were unaware of warfarin indication. Eighty-eight percent of these patients were able to demonstrate appropriate knowledge of warfarin therapy after structured education.
- About 17% (528/3,059) of patients required engagement of families and caregivers in the education process.
- Low levels of readmissions related to bleeding or clots and low levels of warfarin-related adverse drug events were noted.
- Year-to-year consistency of data (2009 to 2014) supports the effectiveness of this program.

## Raising Awareness of Febrile Neutropenia

St. Francis Hospital, Roslyn

### ▼ LESSONS LEARNED

- This initiative required a collaborative effort among oncology nurses, ED nurses, physicians, and patients.
- Not all patients presenting to the ED with Red Cards required antibiotic therapy.
- Opportunities were identified to improve antibiotic administration time.

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### ▼ PROJECT DESCRIPTION

Introducing a new oncology patient population into a healthcare system can be challenging for providers, in particular recognizing febrile neutropenia. Chemotherapy-induced febrile neutropenia poses a significant risk of infection and may result in treatment delays or chemotherapy dose reductions. Reduced dose intensity may affect survival and overall quality of life. Oncology patients receiving chemotherapy are at risk of morbidity and mortality from neutropenic sepsis and septic shock as a result of their treatment or disease. Infections occur in 20% to 30% of febrile neutropenic episodes (Freifeld, et al., 2011). Severe sepsis has been a common complication in cancer patients, with an estimated 8.5% of all cancer deaths in the United States.

A challenge for healthcare providers is the fact that neutropenic oncology patients may not present with high fevers despite bacteremia, leading to the assumption that no infection is present. Therefore, care providers may fail to recognize the need for rapid triage and treatment of oncology patients at risk for infection. Additionally, patients may be reluctant to enter the emergency department for fear of exposure to pathogens, contributing to a further delay in treatment.

This project established a hospital-wide rapid neutropenic fever management plan through staff and patient education for oncology patients presenting in the emergency department (ED). In addition to febrile neutropenia education, a collaboration among nurses, clinical nurse specialists, pharmacists, and physicians of inpatient oncology, infusion unit, and the emergency department support using a tool such as a Red Card, to raise awareness of febrile neutropenia.

### ▼ OUTCOMES ACHIEVED

- All registered nurses complied with the Red Card education module.
- A total of 297 Red Cards were distributed to oncology outpatients.
- The 90-minute antibiotic treatment goal was accomplished in ten out of 12 months in 2014.

## The Sepsis Impact Project

St. Joseph's Hospital Health Center, Syracuse

### ▼ LESSONS LEARNED

- Rapid response is needed to better address the need for timely treatment.
- There is a need for ongoing re-education through a sepsis skills drill.
- A more rapid turnover of the lactic acid and implementation of a more rapid response from lab are needed.

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### ▼ PROJECT DESCRIPTION

Starting in the fall of 2013, St. Joseph's Hospital Health Center's quality team worked diligently on an initiative to reduce sepsis mortality rates, which at the time were higher than the national average. Initially, the effort aimed to develop mandatory education for all aspects of patient care, meaning that all people working in the system would be required to complete and answer some key questions on education regarding sepsis care. Using a multidisciplinary approach, St. Joseph's Hospital Health Center compiled key facets of education pertaining not only to physician and nursing care, but all aspects of care delivered. The intravenous (IV) team, phlebotomy, pharmacy, patient care technicians, respiratory and other therapies, and support staff received this education.

Education stressed the importance of early recognition, change in workflow to address a patient at risk, response to best practice order sets, determining the extent of sepsis, recognition of severe sepsis or septic shock, antibiotic utilization, aggressive IV hydration, and continued re-evaluation of the patient treatment plan.

The education was completed in the fourth quarter of 2013 and released for completion to staff in January 2014. Additionally, education was reinforced during education for a hospital-wide electronic medical record (EMR) implementation.

A Best Practice Alert (BPA) was created requiring staff to address at-risk patients, notify the provider, and monitor the response to the BPA.

A sepsis rapid response was also created, referred to as the "Sepsis Call." This allowed a more rapid response to need, with access to lactate levels, cultures, and initiation of the crucial antibiotics within one hour.

### ▼ OUTCOMES ACHIEVED

- Sepsis cases were expected to increase through increased recognition.
- Additionally, overall sepsis mortality was expected to decrease.
- Very soon after education was completed and BPA was launched, a significant decrease in mortality was noted.

## Reducing Door-to-IV TPA Times

Strong Memorial Hospital, Rochester

### ▼ LESSONS LEARNED

- Resistance to change can be overcome by enlisting the assistance of all disciplines involved in patient care.
- Effecting change in a large institution can be slow and requires buy-in from multiple departments and administrative levels.
- Sustaining a change in process and care that involves multiple disciplines and departments requires continual review and feedback.

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### ▼ PROJECT DESCRIPTION

Intravenous Tissue Plasminogen Activator (IV TPA) is the standard of care for treatment of acute ischemic stroke. It is known to be more effective and safer when given as close to onset of symptoms as possible. The national goal has been treatment of 50% of patients within 60 minutes from arrival at the emergency department. The American Heart Association/American Stroke Association recently adopted a more aggressive goal of door-to-treatment within 45 minutes.

Using the expertise of a Lean Six Sigma-trained professional, an interdepartmental group comprised of multiple disciplines was selected to undertake a Kaizen event with the purpose of consistently and safely reducing door-to-needle times. This team underwent Lean training, after which the team deconstructed the process of IV TPA administration using a mock patient experience, external consultants, and direct observation of processes at other institutions.

The team identified delays attributed to:

- multiple exams by different providers;
- patient care provided prior to computerized axial tomography (CT) scan; and
- multimodal imaging prior to TPA administration.

With support from all stakeholders, a new pathway was developed: emergency department (ED) triage to non-contrast CT, to ED critical care for exam and IV TPA initiation, to multimodal CT scan.

### ▼ OUTCOMES ACHIEVED

From 2013 to 2014:

- Mean door-to-TPA times were reduced by 20.2 minutes (63.3 to 43.1 minutes).
- Median treatment times were reduced by 15.5 minutes (57 to 41.5 minutes).
- Door-to-IV TPA in 60 minutes increased from 55.6% of patients to 89.2%.
- Door-to-IV TPA in 45 minutes increased from 27% of patients to 56.8%.

## Implementation of an Intensive Nursing Care Unit (INCU)

Unity Health System, Rochester

### ▼ LESSONS LEARNED

- Nursing as a discipline, distinct from medicine, encompasses a unique body of knowledge and practice.
- Rightsizing the balance of medical/surgical and nursing care required by each patient optimizes patient outcomes and satisfaction, as well as resource utilization and provider and staff satisfaction.
- This initiative reinforces and validates that nursing care and the setting of appropriate staffing to level-of-care requirements are fundamental to the success of a patient/family-centered care model.
- A unit that empowers a nursing discipline culture fosters autonomy, excellence, and pride.

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### ▼ PROJECT DESCRIPTION

A multi-year renovation project at Unity Health System initially included plans for a 12-bed intensive medical care unit that would expand the critical care unit and be medically covered by intensivists. The plan was later re-evaluated based on hospital occupancy, trends, and efficiency of patient flow, and an alternative proposal was approved to create a 12-bed INCU. This unit would provide intensive nursing care for patients whose needs exceed the routine 5:1 nurse-to-patient staffing pattern on a general medical/surgical unit, but could greatly benefit from enhanced nursing care within a 3:1 nurse-to-patient staffing pattern.

Although labor costs would exceed a routine medical/surgical unit by creating a 3:1 nurse-to-patient staffing pattern, the hospital would save more than \$1 million annually by not requiring enhanced intensivist coverage for the 12 additional beds.

Criteria were defined and the proposal was vetted and accepted by physician leadership and hospital administration. Patients could access the INCU through admission from emergency department, transfer from a medical/surgical unit, or transfer from ICU after medical stability had been determined.

The unit opened in May 2014.

### ▼ OUTCOMES ACHIEVED

Outcomes have exceeded expectations, including:

- reduced patient harm, and increased satisfaction among patients, families, staff, and providers;
- recognition as the “best practice” model in the hospital;
- for patients at greatest risk, the INCU has achieved zero harm events in the following areas: falls with injury; stage 3, stage 4, or unstageable pressure ulcers; and hypoglycemic events (high-risk medication focus); and
- INCU patient satisfaction survey results (top box scores) are in the national 90th percentile.

CHAPTER 2:

# ENHANCING CULTURE AND LEADERSHIP

# Promoting a Culture of Patient-Centered Care Through an Interdisciplinary Labor/Management Partnership

Bronx-Lebanon Hospital Center

## ▼ LESSONS LEARNED

- Spreading and sustaining culture change has required buy-in, transparency, accountability, and dedication—both within and across disciplines, and from the bottom to the top of the organization.
- Staff satisfaction is the foundation of patient satisfaction. When front-line workers are engaged and empowered, they become enthusiastic about creating a culture of service excellence.
- The hospital was innovative in helping each employee offer his/her unique skills to PCC, involving employees in video production, role playing, and peer education, based on their interests and abilities.

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## ▼ PROJECT DESCRIPTION

In 2012, Bronx-Lebanon Hospital Center's senior executives united with union leaders from 1199 Service Employees International Union (SEIU) Healthcare Workers East and the Committee of Interns and Residents to launch a culture change initiative called the Patient-Centered Care (PCC) Program.

The PCC Program combines training with unit-based, interdisciplinary performance improvement projects to educate staff about how each employee contributes to patient satisfaction and supports the hospital's overall performance. PCC engages interdisciplinary teams in tests of change (Plan-Do-Study-Act) to maximize responsiveness to patients' needs and aims to improve communication, teamwork, work processes, and labor/management relations within and across disciplines.

As a result of the PCC Program, employees at all levels have the structures and tools they need to actively participate in and lead quality improvement efforts. Now in its third year, the hospital's labor and management partners are investing heavily in continuing to spread and sustain the PCC Program, with the ultimate goal of system-wide adoption.

## ▼ OUTCOMES ACHIEVED

The PCC Program has:

- strengthened interdisciplinary communication and teamwork;
- strengthened labor/management collaboration;
- cultivated front-line leaders;
- improved work processes;
- improved worker engagement, morale, and satisfaction;
- educated staff about the changing healthcare environment;
- improved staff responsiveness to patient needs; and
- improved patient satisfaction and safety.

# The Huddle Effect: Improving Patient Care by Improving Communication and Staff Satisfaction

Metropolitan Hospital Center/New York Medical College, Manhattan

## ▼ LESSONS LEARNED

- The huddles every two hours speed up the work of improvement teams.
- Huddles enable teams to have frequent but short briefings so that they can stay informed, review work, make plans, and move ahead rapidly.
- They allow fuller participation of front-line staff who often find it impossible to get away for the conventional hour-long improvement team meetings.

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Metropolitan Hospital Center found that emergency department (ED) staff often felt underappreciated and disconnected from both clinical and administrative leadership, with an overall satisfaction rate of only 47%. Staff reported that they lacked role definition and administrative support, and experienced inconsistent communication between team members. In a fast-paced ED, communication among staff members is crucial to providing effective and efficient care to critically ill patients, and low morale adversely affects patient care and productivity. Metropolitan Hospital Center developed a huddle as a plan to improve communication, teamwork, and staff satisfaction in the ED.

The hospital conducted five-minute huddles with each of two teams every two hours in the ED. In addition to physicians and nurses, administrators, patient care assistants, clerks, hospital police officers, and transporters were included in the huddles to increase communication between team members, clarify each staff member's role, increase awareness and accountability, and develop leadership. The target was to implement 12 huddles per day to decrease occurrence reports and improve staff satisfaction from a baseline of 47% to 75%.

## ▼ OUTCOMES ACHIEVED

- Staff satisfaction improved in all fields queried after huddle, from 45% to 79%.
- Staff assessment of communication between physicians and nurses improved (59% to 78%), along with the volume of occurrence reports (11.8 per month to three per month), and the resolution of disagreements between team members in the ED improved (59% to 77%).
- Staff reported satisfaction with communications increased across the board, with the greatest increases amongst transporters and triage nurses, key members of the care team who are too often overlooked in improvement efforts.
- In the 11-month period prior to huddles, 236 per 1,000 patients per month left without being seen. After huddles began, the number had dropped to 135/1,000 per month, a decrease of 42.8%.
- The waiting time for admission decreased from 115 minutes to 96 minutes, and triage-to-exit time for admitted patients decreased from six hours to five hours and 15 minutes.

## Employee Incident/Accident Reductions

Mount Sinai Beth Israel, Manhattan

### ▼ LESSONS LEARNED

- The education program was successful in reducing employee incidents/accidents.
- The use of fun educational materials to increase employee enthusiasm can increase employee knowledge.
- The implementation of a formalized program to de-escalate potentially violent situations is helpful in avoiding instances of staff harm and injury.

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### ▼ PROJECT DESCRIPTION

Beginning in 2011, Mount Sinai Beth Israel's environmental health and safety department began a hospital-wide initiative to reduce employee incidents and accidents. The goal was to increase the safety and well-being of employees, while increasing employee satisfaction and reducing absences.

The environmental health and safety department began conducting "Safety Fairs" at various hospital sites in 2011, which were well attended by staff. They developed a series of interactive trainings, assessed staff knowledge, and developed department-specific education according to knowledge gaps identified through assessments. Topics included accident prevention and chemical, equipment, and fire safety. Additional materials were created to increase employee enthusiasm and awareness, including safety terminology crossword puzzles and "Wanted" posters regarding potentially unsafe equipment. Additional employee safety initiatives undertaken include the implementation of the Safety Team Assessment Response (S.T.A.R.) Code Program to de-escalate disruptive situations before they become potentially violent. Implementation of this program began in 2012.

### ▼ OUTCOMES ACHIEVED

- Staff awareness of potential safety issues and concerns increased.
- The number of employee incidents/injuries was reduced 32% from 2012 to 2014.
- The Occupational Safety and Health Administration incident rate was reduced to 2.38 in 2013 (63% below the Department of Labor National benchmark).

# Using “A Day of Work” In-Situ Simulation Program to Improve the Patient Experience

North Central Bronx Hospital

## ▼ LESSONS LEARNED

- A key method to improve the patient experience is through the thoughtful deployment of in-situ simulation.
- In-situ simulation identified important areas of workflow improvement that would have been missed by standard approaches such as “walk-thru” prior to re-opening.
- Giving staff who had not worked together before, in an environment they had not seen before, the opportunity to practice together before the re-opening improved staff confidence and the culture of safety.

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In August 2013, the inpatient obstetrical services within North Central Bronx Hospital were suspended because the hospital was no longer confident that it could provide a safe level of staffing. Patients were directed to appropriate care. The remainder of the hospital continued to deliver patient care. After an extensive renovation and the hiring of more than 20 new staff within the obstetrics/genecology (OB/GYN) department, the unit re-opened in the fall of 2014. Conducted over several days, all hospital staff involved in the care of pregnant and postpartum women (including OB/GYN, anesthesia, pediatrics, blood bank, emergency department, patient escort, and hospital police) experienced an eight-hour simulated “Day of Work” on the newly reconfigured unit prior to re-opening. The activity included simulation of common emergencies that involved multiple physical locations of the hospital.

The simulation program was very well received by the staff and community; the program was published through a videotape and print feature in a prime internationally-circulated newspaper. In-situ simulation has been incorporated into the functioning unit on a consistent basis, with a focus on continued improvement of teamwork and communication as well as to provide education on new/updated policies.

## ▼ OUTCOMES ACHIEVED

- The patient experience, including overall hospital rating and likelihood to recommend, improved significantly.
- Workflow within the unit was carefully examined and areas of improvement, both structural and process, were identified and addressed.
- Relationships with existing services were reinvigorated, and a culture of safety (“mistakes have led to positive change”) was reinforced.
- Delivery outcomes markedly improved after re-opening.

# “First, Do No Harm”: Building a Comprehensive Patient Safety Program

Orange Regional Medical Center, Middletown

## ▼ LESSONS LEARNED

- Sponsorship and involvement of the board and hospital executive leadership is critical.
- A rigorous and comprehensive approach to the reporting of patient safety, coupled with a Just Culture, increases transparency while reducing fear of reprisals.
- Engaging front-line staff and physicians and having them drive safety programs is essential in attaining sustainable change.

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## ▼ PROJECT DESCRIPTION

“First, Do No Harm” is an aim Orange Regional Medical Center has worked diligently on for more than three years. During this period, many transformational programs have been implemented. These include making patient safety a “non-negotiable” annual board priority, and setting and monitoring key metrics on “never events,” Patient Safety Indicator (PSI) 90, and the harm index. A Quality/Safety Occurrence Alert System was established to standardize the process for identification, communication, resolution, and reporting of occurrences and near misses. Middle management and executives conduct weekly reviews of all reported occurrences. The medical center also instituted concurrent monitoring of complications and mortalities.

A Just Culture model was implemented to evaluate events, educate, and increase awareness of systems failures. Orange Regional Medical Center designed root cause analysis and failure modes and effects analysis processes, and initiated annual administration of the Agency for Healthcare Research and Quality (AHRQ) Culture of Safety Survey. The hospital implemented “culture of safety” projects on all patient care units, led by front-line staff. The hospital implemented patient safety recognition programs, including “Good Catch,” Annual Patient Safety Academy Awards, and multidisciplinary safety grand rounds.

In addition, TeamSTEPPS® Teamworks was established across care settings, and multiple patient safety education programs were implemented, including new employee orientations, an annual leadership academy, and a patient safety coach program for front-line staff. Patient safety education is also integrated into medical student and residency training programs.

## ▼ OUTCOMES ACHIEVED

- PSI 90 Composite Index improved by 96.3%.
- Overall “Perception of Safety” (AHRQ) increased by 25.5%.
- Observed over expected (O/E) sepsis mortalities decreased by 56.8%, and sepsis composite (process) score increased by 53.2%.
- O/E stroke mortalities decreased by 87.8%.
- 54.8% increase in tissue plasminogen activator (TPA) administered to eligible patients.
- O/E heart failure mortalities decreased by 67.2%.
- O/E pneumonia mortalities decreased by 24.1%.

## Daily Safety Check

### Rochester Regional Health System

#### ▼ LESSONS LEARNED

- Leadership support in establishing a non-punitive environment and daily reporting accountability was vital in the success of this initiative.
- Educating and engaging all team members develops a stronger, safer, more collaborative culture of safety.
- Providing tools to simplify the process of gathering and tracking reported data is essential for engagement and sustainment.

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#### ▼ PROJECT DESCRIPTION

One of Rochester Regional Health System's long-term care facilities starts each day with Daily Safety Check, an affiliate-wide huddle that taps into the perspectives and wisdom of front-line team members by providing an actionable forum for identifying factors that might affect operations and/or put patients at risk.

Facilitated by senior leaders, Daily Safety Check uses a reporting structure that sets a non-punitive tone to encourage candor and an open exchange of ideas. The leaders guide system improvements through proven high-reliability principles that specifically identify potential challenges in order to best address them (these include preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise).

The launch of Daily Safety Check at the long-term care facility saw clear benefits that quickly inspired expansion plans to other system affiliates. This real-time method has improved the organization's ability to identify problems, prioritize work, improve communication, and ensure a comprehensive understanding of safety.

#### ▼ OUTCOMES ACHIEVED

- Harm to residents decreased, as evidenced by fewer serious safety events and an increase in days between such events.
- The rate of falls decreased, with a maintained rate well below the affiliate goal of 8.5% per 1,000 patient days.
- More risks are reported.
- The health system achieved marked reductions from 2013 to 2014 in workers' compensation claims (38 to 20) and team member injury reports (151 to 123).

## PACE Patient Safety Champions

Rochester Regional Health System

### ▼ LESSONS LEARNED

- True cultural transformation requires front-line team member engagement and leadership-driven motivation.
- Leaders must make safety a priority by allowing staff to take the time to plan and communicate safety initiatives.
- Creative learning opportunities inspire out-of-the-box thinking and drive quality and safety efforts

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To engage team members in safety-supportive language and behavior across disciplines, locations, and hierarchy, Rochester Regional Health System's nationally-accredited Program of All-inclusive Care for the Elderly (PACE) provides highly coordinated services that allow frail seniors to continue living safely at home. An internal team took responsibility for developing, implementing, and sustaining the PACE Patient Safety Champion initiative that had already proven highly effective in other areas within the diverse health system.

The system-wide Patient Safety Champions program, launched in 2012, included collaboration among all affiliates and roles to drive improvement and sustain a culture of safety. The health system began adapting this model for its PACE program in September 2013 by identifying front-line team members from each site and establishing monthly meetings for these Champions. Using a modified "train-the-trainer" model, modules were created, grounded in safety science education theory and system design focus. Through fun, interactive, and engaging sessions, networking and synergizing was encouraged and developed across these disparate groups.

Regardless of their job-specific responsibilities, Champions are challenged to keep patient safety top-of-mind at all times. They reward and encourage team members for following safe practices; teach fellow team members about safe practices that can impact participants and team members alike; lead and participate in system, affiliate, and department initiatives; and promote a culture of innovative thinking that helps the entire affiliate embrace its responsibility for patient safety.

### ▼ OUTCOMES ACHIEVED

- Rates of falls with injuries and pressure ulcers/wounds decreased.
- Safe patient handling injuries decreased.
- Front-line team member engagement increased.
- These achievements are particularly notable for occurring during a period of unprecedented program growth.

## Organizational Morning Huddle

Schuyler Hospital, Montour Falls

### ▼ LESSONS LEARNED

- A template was added to provide consistent information for each huddle every time.
- Keep it short. Repetition is essential.
- Set at a specific time each day.

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### ▼ PROJECT DESCRIPTION

In healthcare organizations, the ability to function as a team is critical to success and vital to the quality of care and the safety of patients and staff. In spring 2012, Schuyler Hospital conducted its first Agency for Healthcare Research and Quality (AHRQ) *Culture of Safety Survey*, the results of which helped the hospital focus efforts on opportunities to improve. One opportunity was teamwork across units. AHRQ results for teamwork across units were reported at 52%, which was 12% below New York State Partnership for Patients (NYSPFP) and national mean scores. The outcomes for quality and patient safety also identified falls with injury and catheter-associated urinary tract infections as two clinical quality indicators in which outcomes could be improved by enhancing teamwork between units.

In September 2013, at the recommendation of its TeamSTEPPS® trainers, Schuyler Hospital implemented the daily morning huddle. At 8:30 a.m., all patient care departments attend a brief conference call. The following items are included in the call, which usually lasts no longer than five minutes: the medical/surgical unit reports on census, discharges, admissions (including expected surgical patients), number of available beds, staffing, Foley catheters, restraints, alarms, and whether hallways are clear. The emergency department reports on census, admissions, and staffing. Surgical services reports on scheduling surgical cases, staffing, surgical admissions planned, and fluoroscopy cases. Respiratory therapy reports on medical gases, suction functionality, and outpatient room availability. Radiology reports on planned contrast injections for both computerized tomography and magnetic resonance imaging. The nursing supervisor reports on the occupancy of the morgue, that hallways are clear, and any hand-offs from night supervisor that need to be addressed. All departments report any anticipated risks or safety concerns.

### ▼ OUTCOMES ACHIEVED

- Use of Foley catheters is trending down.
- Communication across departments has improved.
- Use of resources is maximized throughout the organization.
- There has been a decrease in the number of falls with injury.

## Prayer Huddles—A Partnership Between Nursing and Spiritual Care

Sisters of Charity Hospital, Buffalo

### ▼ LESSONS LEARNED

- Include ancillary departments in the huddles—this increases the sense of teamwork.
- Even when extremely busy, staff will make time for a prayer huddle.
- Patients and families enjoyed joining with the staff to participate in the prayer huddle—be sure to include them in the opportunity.

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### ▼ PROJECT DESCRIPTION

Research links nursing spirituality to “organizational citizenship behavior,” which is associated with greater nurse connection to both the patient and organization, resulting in enhanced patient outcomes. National literature reveals a stronger focus on the need for nurses to participate in self-care as the transformation of healthcare creates additional stress on its front-line care providers. With this in mind, Sisters of Charity Hospital decided to take a new approach to improving associate satisfaction, knowing that this also links to improved patient satisfaction and outcomes.

The 24/7 presence of the professional nurse, as well as the nursing educational foundation—with a focus on holistic care of mind, body, and spirit—suggests that nurses who have a strong sense of spirituality may have greater organizational commitment. Developing a greater “partnership” between nursing and spiritual care to support nursing staff spiritual needs can create a higher sense of purpose and connectedness. The idea of a “prayer huddle” was to nurture the spiritual well-being of associates in a manner that would validate the importance of their delivery of patient care and enhance the connection to the organization’s mission and values. The rounds, which consisted of a member of leadership and spiritual care rounding on the units, offer an opportunity to huddle and pray together. Because the staff come from different religious and non-religious backgrounds, the focus was on inclusivity and spirituality rather than religion. The sessions included a meditation from a Buddhist monk, St. Paul’s words, a Judean prayer, the story of the Good Samaritan, and a Muslim blessing.

### ▼ OUTCOMES ACHIEVED

- The huddles created a greater sense of teamwork, which is critical for safety.
- This program established an opportunity for associate recognition by leadership, particularly on the night shift, which has less access to leadership.
- The prayer huddles help connect care provider work directly to organizational mission.
- Culture of Safety scores improved.
- Patient satisfaction scores improved: overall patient rating of satisfaction improved from 70.9% in 2013 to 72.1% year-to date (November 2014).

# Improving Teamwork in Perioperative Services through Crew Resource Management and Debrief Reporting

St. Francis Hospital, Roslyn

## ▼ LESSONS LEARNED

- Effective teamwork and a culture of safety are not only driven by education, but by the participation and empowerment of all involved.
- High reliability occurs through standardization and consensus of those involved. Staff-developed tools work best.
- Integration of staff on the CRM Committee allowed staff an opportunity to voice their concerns and empowered their creativity to develop and implement sustainable and robust process improvement.

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## ▼ PROJECT DESCRIPTION

St. Francis Hospital's perioperative services team identified an opportunity to improve its performance in the care of the surgical patients in the pre-, intra-, and post-operative phases. The project began with the selection of a vendor who had the ability to assist and support the hospital in implementation of the project through assessment of needs and initiatives to improve efficiency and communication. A steering committee was formed, including physician champions and project coordinators. A Leadership Development Program was held and a mission statement was created: "Deliver safe, consistent, and superior quality of care through respectful teamwork."

A risk assessment was conducted, which identified improvement opportunities and existing strengths of the perioperative services program.

The Agency for Healthcare Research and Quality (AHRQ) *Patient Safety Culture Survey* was administered to perioperative staff, surgeons, anesthesiologists, and support services personnel. Teamwork Skills Workshops were conducted for all perioperative services staff, including ancillary and support services. This was followed by *Hardwire Safety Tools* workshops. Two new tools were designed: the *Debrief and Debrief Follow-up Report*, and the "Expectations Card." Metrics were selected to assess the project's success and identify continuing challenges. An electronic debrief reporting system was created to track the number of debriefs performed, the issues reported during debrief, the assignment of the issue for resolution, and an indication if feedback was required.

## ▼ OUTCOMES ACHIEVED

- Communication was improved by consistent use of the standardized handoff and debrief tools.
- The facility analyzed and resolved issues identified in the debrief.
- There are fewer issues concerning behavior, equipment malfunction, instrumentation, and preference cards.

# Strong Interdisciplinary Communication and Collaboration Positively Impact Patient Outcomes and Staff Satisfaction

Zucker Hillside Hospital, Glen Oaks

## ▼ LESSONS LEARNED

- Team cohesiveness has a positive impact on patient care and staff engagement outcomes on an inpatient psychiatric mental health unit.
- Innovative techniques on the management of aggressive patients enhance safety.
- Strong administrative and unit-based leadership is required to make sustainable organizational changes.

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## ▼ PROJECT DESCRIPTION

Zucker Hillside Hospital, a 222-bed inpatient facility, opened a new 20-bed unit in January 2013. Staffed with a mix of interdisciplinary professionals drawn from pre-existing departments, the unit experienced increasing levels of aggression, injury to staff and patients, restraints, and overtime costs related to high utilization of constant observation (CO). The admission of several extremely violent patients compromised the overall feeling of safety on the unit, leading to staff absenteeism, lack of continuity of care, and breakdowns in communication.

An intervention was developed based on Betty Neuman's Healthcare Systems Model and the TeamSTEPPS® Concept. A multidisciplinary leadership initiative to transform the environment of care included the scheduling of brainstorming sessions, modification to the team structure, enhancement of TeamSTEPPS tools and strategies, the development of a unit-specific team aggression prevention plan, utilization of patient engagement specialists, and the production of a patient care video on de-escalation starring multidisciplinary team members from the unit.

## ▼ OUTCOMES ACHIEVED

- Restraint use was reduced 85%.
- Use of seclusion was reduced 75%.
- There was a 39% reduction in constant observation expenditure, for a savings of \$93,450.
- The employee engagement survey indicated the highest score in the hospital.

CHAPTER 3:

# IMPROVEMENT ACROSS THE CONTINUUM OF CARE

## Improving Organizational Efficiencies Using a Safety Huddle Approach

Arnot Ogden Medical Center, Elmira

### ▼ LESSONS LEARNED

- Take care of things first that most impact quality care.
- Accountability will increase staff and organization efficiency.
- Continuous updates and monitoring reduce redundancy.

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### ▼ PROJECT DESCRIPTION

Core members from each healthcare area at Arnot Ogden Medical Center meet every morning for ten minutes to discuss safety issues and updates, and high priority items that will improve efficiencies in the next 24 hours. This is a very productive approach to increase organizational efficiencies toward patient safety and satisfaction.

### ▼ OUTCOMES ACHIEVED

Through the safety huddle approach, Arnot Ogden Medical Center has achieved:

- prompt reaction to safety issues;
- more accountability toward healthcare patient safety; and
- improved organization efficiencies through continuous monitoring.

# Identification and Management of Behavioral Health Needs in the Home Setting

Catholic Home Care, Farmingdale

## ▼ LESSONS LEARNED

- As a result of a more formalized behavioral health team, the agency was better equipped to address the specific needs of its patient population.
- The culture of the agency regarding mental health had to change.
- The term “psychiatric nurse” was changed to “behavioral health nurse,” and the “psychiatric” program was changed to the “behavioral health” program to decrease the stigma attached to the word “psychiatric.”
- Improved staff engagement led to increased referrals to the program.
- Staff needed education on completing the PHQ-2 and when to refer their patients to the behavioral health team for follow up. Once staff were on board, the number of patients referred to the behavioral health program increased, as did the number of patients whose depression improved through early intervention.

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## ▼ PROJECT DESCRIPTION

Depression has proven to be a major contributor to a host of disabilities and/or co-morbidities. It is often under-recognized, overlooked, or dismissed by healthcare professionals and, therefore, inadequately treated. The consequence was a cost of \$83.1 billion (Source: United States Preventative Services Task Force 2009).

Catholic Home Care implemented a program aimed at early recognition of mood disorders, specifically depression. Best practice standards for the agency include:

- Depression screening is conducted for all patients over age 18 as part of the admission process—patients were screened using the Patient Health Questionnaire Two (PHQ-2).
- Patients who scored a three or above on this scale are referred to the behavioral health team for evaluation.
- The behavioral health team visits the patient in his/her home and completes either the more comprehensive PHQ-9 for those age 64 and less, or the Geriatric Depression Scale for those patients who are 65 and older. The outcome of these assessments is reported to the physician for initiation of treatment for depression. Additional home visits are made based upon patient needs and physician orders.
- At discharge, patients are screened again using the same depression scale to determine if their depression severity has lessened. Patients in the behavioral health program demonstrated an overall decrease in severity of depression utilizing these scales.

## ▼ OUTCOMES ACHIEVED

- Catholic Home Care realized a steady increase in the number of patients identified for the behavioral health program. In total, 2,739 patients were referred to the behavioral health program from first quarter 2013 through fourth quarter 2014.
- For those patients who had at least two visits by a behavioral health nurse, 83.6% had an improvement in their depression score.

# Community-Based Care Transitions Program: Pharmacy Services and Collaboration to Improve Patient Continuum of Care

Highland Hospital, Rochester

## ▼ LESSONS LEARNED

- Pharmacy intervention significantly contributes to readmission rate reduction.
- A more thorough discharge medication reconciliation process ensures a safer discharge.
- Better communication and collaboration improves quality of care.

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## ▼ PROJECT DESCRIPTION

In July 2012, a city-wide collaborative team including representation from pharmacy, social work, and home healthcare agencies was formed with the goal of reducing all-cause 30-day readmissions in the Medicare fee-for-service population. The pharmacy intervention initiative involves collaboration with medical providers, transition coaches, and field home health nurses to ensure a safe discharge and continuity of care. The discharge summary is reviewed by the pharmacist to ensure accuracy and completeness of patient instructions, medication list, follow-up lab orders, prescriptions for new medications, and follow-up provider appointments.

During a discharge counseling session, the pharmacist provides and reviews with the patient, family member, or caregiver an updated medication list, and will also ensure the patient has adequate supplies of all home medications. Through collaboration with Highland Hospital's outpatient pharmacy, discharge prescriptions are delivered to the bedside to ease patient difficulties in receiving medications as they transition home. When necessary, the pharmacist will also reach out to primary care providers to address significant changes that may require prompt follow-up.

Additionally, pharmacists have worked with local home healthcare agencies to provide handoffs to field nurses and transitions coaches scheduled to visit patients in their homes. These agencies will review medication-related priorities that should be addressed soon after discharge and items to discuss during the patient's follow-up primary care visit.

Selected patients receive a follow-up telephone call from a pharmacist within five days of discharge to confirm understanding of medication changes and ensure access to needed medications has been achieved.

## ▼ OUTCOMES ACHIEVED

- Over 21 months, there was an estimated 28% reduction in all-cause 30-day readmission rates for patients who received a pharmacy intervention compared to those who did not.
- The enrollee group was identified as a top performer in all three core measures: enrollment, all-cause readmission rate reduction, and enrollee readmission rate reduction.
- Group performance measure analysis estimates a 29% reduction in readmission rates among enrollees through July 2014.

## Cardiac Care Across the Continuum

Nassau University Medical Center, East Meadow

### ▼ LESSONS LEARNED

- Administration support is imperative for a successful program.
- Partnering with a dedicated transitional care team that coordinates each individual patient's specific needs provides a seamless transition from hospital to home.
- Front-line staff education is critical, as they are key people responsible for providing patients with guideline-directed therapy.

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### ▼ PROJECT DESCRIPTION

Nassau University Medical Center's (NUMC) cardiology department implemented a comprehensive program to enhance the care of patients with heart failure (HF) during hospitalization through transition to home. An algorithm for diagnosing acute decompensated heart failure was developed and identified patients are given extensive education on disease management. Patients are referred to a case manager/social worker and the transition of care team for additional services such as arranging for housing, transportation, and follow-up care to other disciplines.

Once discharged, patients are called within 48 to 72 hours by NUMC's heart failure nurse to assess general well-being, in addition to signs and symptoms of heart failure. The nurse practitioner sees patients post-discharge in the NUMC heart failure clinic and reinforces heart failure education at the initial and subsequent follow-up visits.

NUMC's focus on improving performance and patient outcomes in cardiovascular services is evident through a reduction in readmission rates from 29% to 27.5%. Costs avoided totaled \$1,503,186 in averted readmissions. The average length of stay for NUMC heart failure patients was reduced from 6.1 days to 5 days. As per the Centers for Medicare and Medicaid Services, NUMC's risk-adjusted, standardized heart failure mortality decreased from 13.8% to 12.6%.

### ▼ OUTCOMES ACHIEVED

- The mortality for Medicare heart failure patients decreased.
- The readmission rate for Medicare patients decreased.
- Average length of stay decreased.
- NUMC received the American Heart Association Gold Plus and Target HF Honor Roll Award for continuum of care, from inpatient to outpatient.

# Improving Inpatient Rehabilitation Facility Patient Care and Satisfaction through Management of Patient Expectations

St. Charles Hospital, Port Jefferson

## ▼ LESSONS LEARNED

- Addressing knowledge deficits of team member roles proved to be very helpful in improving communication from the team to the patient and family.
- Many patients consistently identified particular pieces of information that were more important to know upon admission to the IRF, which was primarily related to the clarification of information received prior to admission.
- Current information and processes related to educating patients and families on what to expect were identified as having too much information, making it difficult for patients and their families to comprehend.

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## ▼ PROJECT DESCRIPTION

Patients who are aware of the rehabilitation process demonstrate increased compliance and often have better outcomes than those who are not sufficiently aware of what to expect. The inpatient rehabilitation facility (IRF) organized a Six Sigma project to assist in the improvement process for patient satisfaction.

The goal was to meet patient expectations in preparing, orienting, and educating patients regarding what the IRF admission will entail. Educational materials were reviewed and revised by the multidisciplinary team, comprising physicians, nurses, physical and occupational therapists, speech language pathologists, nursing assistants, and rehabilitation aides. All were trained on the critical educational points that must be communicated upon admission to improve the patient's experience. A challenge facing the IRF was the large proportion of patients in the post-acute environment who are admitted from other inpatient hospitals. The program's objective was to offer information to those external referral sources to better provide patients with information on what to expect from the rehabilitation program. The basic principles the team embraced were to ensure that expectations were clearly defined among the multidisciplinary team and communicated effectively to the patient and family. To ensure sustainability, staff must continue to use these tools and processes.

## ▼ OUTCOMES ACHIEVED

- In the first year of implementing new processes and educational material (March 2013-March 2014), the top box response to "Staff explained what stay would be like" increased from 48.5% to 52.9%, putting the IRF in the 60th percentile nationwide, versus the 33rd percentile.
- Over the same period, the IRF's "Likelihood to recommend" top box score increased from 77.3% to 82.8%, moving it from the 49th percentile to the 74th percentile.

## Partnering for Excellence: Achieving the Extraordinary

St. Peter's Health Partners, Albany

### ▼ LESSONS LEARNED

- Onboarding providers to the initiative's goals was essential to culture change.
- Engaging community groups (payers, continuing care sites, social services, etc.) allowed St. Peter's to address external barriers to achieving care goals.
- Creating display boards for staff allowed St. Peter's to share information on performance and sustain results.

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### ▼ PROJECT DESCRIPTION

Partnering for Excellence is an initiative aimed at synchronizing care coordination and care transition across a healthcare system as a result of a merger. The goal was to develop a new care delivery model that redesigned patient flow and how information and resources moved through the system.

The initiative integrated physicians, clinicians, and non-clinical staff to a key goal (progression of care) with a focus on patient experience, quality, safety, and sustainability. Critical components to success were:

- developing reliable processes so staff could “work smarter, not harder;”
- promoting evidence-based best practices across the system; and
- responding to changes in a dynamic healthcare environment.

Partnering for Excellence took the system's vision and goals and made them a priority for all by:

- deploying a new care coordination model where new roles were employed to progress patient care and patient flow into and out of the acute hospital level of care;
- setting an expectation that clinical and non-clinical staff would work on process improvement projects that were:
  - aligned with themes set forth by leadership,
  - rooted in the Plan-Do-Check-Act methodology, and
  - shared with like departments across the organization;
- implementing bi-weekly operational rounding in which senior leaders engaged front-line staff on improvement projects—this increased teamwork and communication by empowering front-line staff to question how things are done and engage leaders in solving problems together; and
- making data accessible, visible, and understandable for the system as a whole and within each specific department through the use of display boards on the units.

### ▼ OUTCOMES ACHIEVED

- More than 6,000 employees participated in Partnering for Excellence.
- More than 750 process improvement projects focused on progression of care, patient experience, quality, and safety. A reduction in average total falls and catheter-associated urinary tract infection rates, and reductions in average length of stay days are examples of measurable improvements.

## Improving Patient Safety Through Video Monitoring

Sunnyview Rehabilitation Hospital, Schenectady

### ▼ LESSONS LEARNED

Video monitoring can

- prevent falls,
- lead to cost savings, and
- increase family and staff satisfaction.

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### ▼ PROJECT DESCRIPTION

Falls are a major safety issue in rehabilitation settings. Patients receive mixed messages—try to do it on your own, but don't do anything in your room without calling for assistance. Many interventions are documented in the literature for reducing falls risk, including sitters, bed/chair alarms, purposeful hourly rounding, toileting programs, activity rooms, low beds, and fall mats. Although these were implemented at Sunnyview, they are not effective in decreasing the fall rate. In September 2014, the facility implemented a video monitoring system. Ten in-room mounted cameras and five portable cameras were purchased. Sunnyview focused efforts on the brain injury unit, as this unit has the highest fall rate, and mounted eight cameras on this unit.

### ▼ OUTCOMES ACHIEVED

- The average hospital-wide rate of falls decreased from 6.34 per 1,000 patient days to 4.48 falls per 1,000 patient-days.
- The average brain injury unit fall rate decreased from 10.23 per 1,000 patient days to 7.12 falls per 1,000 patient days.
- Sitter (one staff member for one patient) usage has declined, resulting in \$49,830 in savings over the first four months.
- Family/caregiver and staff satisfaction have increased.
- The program has led to identification of other significant clinical issues (seizures) which enables a faster staff response.

# Reducing Hospitalization in Long-Term, Chronic, Critically-III Residents/Patients

The Silvercrest Center for Nursing and Rehabilitation,  
Manhattan

## ▼ LESSONS LEARNED

- Reduction in hospitalization is achievable through teamwork, empowerment of ancillary staff, and physician buy-in.
- Improved critical thinking by licensed personnel has strengthened the management of residents in-house. This has resulted in residents and family members gaining more confidence in the facility's ability to treat clinically complex conditions on-site.
- Process improvements in one area often lead to unanticipated secondary benefits (e.g., cost savings).

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## ▼ PROJECT DESCRIPTION

Reducing hospitalization has been incorporated in the facility's culture and performance improvement process due to the high patient acuity, hospitalization, and 30-day readmission rates that are above benchmark, especially in the ventilator/respiratory population.

Two interdisciplinary Project Work Groups (PWGs) were created in 2013 with the goal of reducing hospitalization by 20% through the early identification and management of changes in condition, and when appropriate, providing palliative care. The Hospitalization PWG reviewed all hospital transfers weekly and made recommendations for improvements in clinical practice and documentation for diagnoses (e.g., respiratory distress), most frequently associated with hospitalization. The Palliative Care PWG reviewed and enhanced the existing program.

## ▼ OUTCOMES ACHIEVED

- Hospital transfers were reduced 31%.
- Hospital admissions decreased 30%.
- Thirty-day hospital re-admissions were reduced by 34%.
- Ventilator-dependent resident hospitalizations decreased 43%.
- Ventilator-dependent resident 30-day readmissions were reduced by 54%.
- The hospitalization rate per 1,000 patient days was reduced from 5.1 to 3.4.
- Acute changes in condition resulting in a hospital transfer decreased from 49% to 10%.

## System-Wide Care Coordination

United Health Services, Johnson City

### ▼ LESSONS LEARNED

- A well-defined, user-friendly method for risk stratification of patients and well-defined, reportable health outcome metrics are critical for success.
- Reviewing data identified patients who could benefit from outreach services. More outreach equals more patient volume.
- The largest return on investment can be realized when working with patients who fall into the medium risk category.

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### ▼ PROJECT DESCRIPTION

In order to meet its vision, “to provide exceptional value in the delivery of coordinated, patient centered care,” United Health Services implemented a system-wide care coordination program to ease patient transitions from acute to post-acute care settings.

With the goal of overarching, seamless care coordination in mind, United Health Services looked at existing programs that had components of care coordination, including Medicaid Health Home (MHH) and the Patient Centered Medical Home; disease management programs; and specialty programs, including a Cardiac Navigator, a Transitional Care Management program, and Stopping Elderly Accidents, Deaths, and Injuries (STEADI). United Health Services also considered meaningful use of electronic health records, and developed tools such as the patient risk assessment and “dashboards” to monitor patient outcomes to assist in identifying gaps in care coordination. The use of the electronic medical records was expanded so that each of the programs could be documented in the patient’s medical record, thereby reducing duplication and expanding the continuum of care offered to patients.

Ultimately, United Health Services developed a hybrid model using existing care coordination programs like MHH and STEADI, and continued to work with both embedded care coordinators and a centralized care coordination model. Initial data indicate that patient outcomes have improved.

### ▼ OUTCOMES ACHIEVED

- Thirty-day readmission rates for congestive heart failure patients working with the cardiac navigator decreased from 22% to 8%.
- Hospitalization rates for MHH were reduced by 45% and emergency room visits decreased by 56%.
- The number of hospitalizations due to fall risk decreased from 15 to nine annually.
- Hospitalization for those in transitional care management decreased 19%.

CHAPTER 4:

# IMPROVING ORGANIZATIONAL EFFICIENCY

## Increasing Efficiency and Satisfaction in the Emergency Department

A.O. Fox Memorial Hospital, Oneonta

### ▼ LESSONS LEARNED

- A multifaceted team approach works best to achieve increased patient satisfaction.
- Small, incremental progress is more sustainable than large jumps in scores.

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### ▼ PROJECT DESCRIPTION

A.O. Fox Memorial Hospital's unit practice council in the emergency department (ED) identified the need for improvement relating to patient satisfaction and long waiting times for seeing a provider. A task group was formed to review the process for registration in the ED, and a decision was made to implement bedside registration. This was a collaborative team effort between the registration staff, care providers, and ED nursing staff.

With this initiative, patients are immediately brought to a bed once they have checked in at the lobby. This has enabled the patient to be evaluated by the provider in a much more efficient manner, which has resulted in decreased wait time for patients, greater patient satisfaction, and less patients who have left without being seen by the medical provider. Along with this initiative, the unit practice council team implemented the use of white boards in the ED to better communicate with patients. The unit practice council continues to monitor patient satisfaction and continuously make changes for improvement. Currently, the council is working on a team discharge approach and hand-offs in the ED.

### ▼ OUTCOMES ACHIEVED

- The number of patients who left the ED without being seen due to wait time decreased by 37% (394 in 2013 to 144 in 2014).
- The overall score for patient satisfaction in the ED increased steadily from 52.4% to 68.5% between 2013 and 2014.
- The time for patients' arrival to discharge in the ED decreased by 36% overall.
- The time for patients to be seen by a medical provider decreased from 63 minutes to 19 minutes between 2013 and 2014.

## Bio-Medical Engineering Performance Improvement Project

Brookhaven Memorial Hospital Medical Center, Patchogue

### ▼ LESSONS LEARNED

- ISO standards can be applied to healthcare, outside of typical manufacturing certification.
- Proper management of calibration is a completely effective means of assuring proper accuracy of medical equipment used to diagnose and treat patients.
- Once established, a NIST calibration program is relatively easy to maintain. The structure of the program is extremely important (protocols, re-certification).

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### ▼ PROJECT DESCRIPTION

In 2012, the Brookhaven Memorial Hospital Medical Center Bio-medical Engineering Department launched a performance improvement (PI) initiative to ensure that equipment used to calibrate and test all medical equipment is traceable to standards of the National Institute of Standards and Technology (NIST) in Washington, D.C.

The process began with a complete documentation and evaluation of the department's existing test equipment. It was determined that a substantial quantity of new equipment would be necessary to satisfy the requirements of the initiative.

For ease and continuity, a single vendor was selected for obtaining the equipment. To make the determination, specific capabilities were outlined, and customized test protocols for new equipment were prepared. This information was then put into Brookhaven's Asset Management System. To prevent damage to equipment during shipping, an annual schedule was set up to have an independent company come on-site to provide the calibration services. A master test equipment spreadsheet was designed to document purchase dates and calibration dates, providing a snapshot of test equipment status.

In addition to maintaining NIST compliance, this initiative put Brookhaven on course for successfully obtaining International Standards Organization (ISO) 9001 Certification in 2014.

### ▼ OUTCOMES ACHIEVED

- The calibration program has now passed the scrutiny of three consecutive Det Norske Veritas (DNV) accreditation surveys, with accolades during the last survey in August 2014.
- The hospital earned ISO 9001 certification in 2014.
- Absolute traceability has been maintained for all tests done on medical equipment (the exact piece of test equipment can be traced to the specific test done on a particular date).
- Brookhaven's nursing staff are assured that equipment is accurate and that results can be used to properly care for patients.

# An Expedited Long Spine Board Removal Protocol to Decrease the Time Patients Remain Immobilized in the Emergency Department

Crouse Hospital, Syracuse

## ▼ LESSONS LEARNED

- The use of a nursing-driven protocol to remove a patient from an EMS long spine board is successful in decreasing the time a patient spends immobilized.
- A collaborative approach with EMS on performance improvement measures positively improves relationships with pre-hospital care EMS partners.
- Allowing nurses to function at their skillset with provider backup, if needed, strengthens ED team bonds.

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As part of an Emergency Medical Service (EMS)/Hospital/National Medical Manufacturer Collaborative Lean Six Sigma Greenbelt program, Crouse Hospital identified an improvement opportunity: to allow emergency department (ED) registered nurses (RNs) to initiate a designed protocol to assess and remove patients from EMS long spine boards.

The team included members from EMS agencies, the hospital, and a leading local national medical manufacturer. The work transitioned into the hospital's ED operations structure for implementation. The protocol was developed, reviewed, and approved by the physician team. The hospital ED RNs were trained on the protocol and their skills were assessed with teach-back and a hands-on, practical competency evaluation.

Once the ED RN's competency with the protocol and proper spinal immobilization techniques and safe movement of immobilized patient was reached, the ED RN could then enlist the help of other ED staff members and the EMS providers to initiate the expedited EMS long spine board removal protocol. This allowed the nurses to work at their skillset and partner with EMS providers to work collaboratively to safely transfer the patient off the EMS long spine board. RNs that did not feel comfortable for any reason were empowered to call the provider to the bedside to assist and help with the assessment of the patient.

## ▼ OUTCOMES ACHIEVED

- Time patients spent on EMS long board was decreased by 49 minutes (79%), from a baseline of 62 minutes to 13 minutes.
- A decrease of 43 minutes (decrease of 69%) from the baseline of 62 minutes to 19 minutes was maintained at one year with an increase in ED volume.
- The decrease of 43 minutes (decrease of 69%) from the baseline of 62 minutes to 19 minutes was maintained at the 18-month mark with additional increase in ED volume.
- Patient and family satisfaction increased.

## E-Assignment Board

Erie County Medical Center Corporation, Buffalo

### ▼ LESSONS LEARNED

- Improved communication across all constituencies reduces confusion, wasted time, and improves the patient experience.
- Patient safety is enhanced for providers and families.
- Patient care team efficiency is enhanced due to open communication lines throughout the nursing unit.

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### ▼ PROJECT DESCRIPTION

The E-Assignment Board project was implemented to ensure consistent, up-to-date information is available to families and the clinical team at Erie County Medical Center. The board was created for 7 Zone 2, a step-down trauma/surgical floor, to enhance communication and enable visitors and the interdisciplinary team to quickly and easily identify the nurses visually and by name. The board became a primary communication tool used to display patient assignments (beds, attending physician, nurse, etc.), contact information, and clinical information. This tool has demonstrated an overall improvement in the patient and family experience.

The E-Assignment board is a 42-inch TV screen located in the nurses' station and includes:

- location of patient; and
- name and picture of members of the care team (physicians, nurses, aid, and secretary) assigned to the patient.

The most valuable components of the E-Assignment board are the pictures of the patient's care team. This enables visitors and families to quickly and easily identify members of the care team. The E-Assignment board eases patients' and families' concerns about who is taking care of them.

### ▼ OUTCOMES ACHIEVED

- Enhanced patient safety—care team member easily and quickly identified.
- Enhanced patient quality of life—visitors are relaxed and satisfied when they visit, and are able to spend as much time visiting as possible.
- Increased efficiency and decreased interruptions at the central nursing information station.

# Remote Video Auditing with Real-Time Feedback in the Operating Room to Improve Safety and Efficiency

North Shore-Long Island Jewish Medical Center, New Hyde Park

## ▼ LESSONS LEARNED

- RVA ensures consistent practice of surgical time-out practice and the OR cleaning process.
- Consistent feedback provides optimal results over occasional observation.
- Leadership engagement and multidisciplinary collaboration leads to more successful project implementation and sustainability.

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## ▼ PROJECT DESCRIPTION

North Shore-Long Island Jewish Medical Center implemented remote video auditing (RVA) to monitor surgical procedures to improve quality and efficiency in the operating room (OR). The RVA process involves a third-party video auditor in a remote location watching real-time footage via low-resolution cameras (ensuring patient privacy) of surgical procedures to ensure compliance with protocols pertaining to surgical time-outs, room turnover time, and sterilization practices. A “pass” or “fail” was assigned to measure compliance based on established criteria.

To measure the efficacy of RVA, the project had three main components:

- A baseline period was measured without the OR staff being aware that they were being measured and monitored remotely.
- All ORs were made aware that they were being monitored, but only half of the ORs were provided feedback, which was given via electronic display boards and sent as email or text alerts within three minutes of each audit start. The feedback included room status changes and safety alerts, such as “time-out failed,” “drape down,” and “next patient in OR.” The feedback enabled the OR team to address any delays or safety non-compliance.
- The last phase of the project involved all ORs receiving the real-time feedback.

## ▼ OUTCOMES

- Time Out: Compliance increased from 14% to 95%
- Sign-in: Compliance increased from 21% to 85%
- Sign-out: Compliance increased from 32% to 80%
- Terminal Clean: Compliance increased from 35% to 99%
- Turnover Time: 10.4 minutes were gained per OR per day
- First Case Start: 3.1 minutes were gained per OR per day
- Surgeon Satisfaction: increased 11% over two years

## Value-Based Management: “Dwell Time”

NYU Langone Medical Center, Manhattan

### ▼ LESSONS LEARNED

- Establishing metrics with shared departmental responsibility helps to align different departments around a goal.
- Real-time data help clinicians identify breakdowns in the process and/or additional areas of opportunity.
- Involving front-line staff in project workgroups helps to foster enhanced communication between different departments.

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### ▼ PROJECT DESCRIPTION

In the fall of 2013, NYU Langone Medical Center’s chief executive officer charged senior leadership with the goal of reducing inpatient Medicare loss by 50% within three years. The chief medical officer led a task force to identify opportunities throughout the organization to decrease costs while improving the quality of care for patients. The task force identified opportunities to help decrease Medicare loss within corporate services, operations, clinical resource utilization, length of stay, revenue cycle, and supply chain. The ongoing oversight of these projects was branded the Value-Based Management (VBM) initiative.

One opportunity identified within operations and clinical resource utilization was decreasing delays in transferring patients to a different level of care once they are ready to progress. Due to high occupancy, these delays were frequent in the medical intensive care unit (MICU), a resource-intensive patient care setting.

An interdisciplinary workgroup, including Patient Placement & Progression (P3) leadership, MICU physician and nursing leadership, Epic medical leadership and analysts, and hospital operations, worked to identify reasons for MICU “dwell time”—the time between when a transfer order is placed by a MICU provider to when a bed is assigned by P3. The workgroup identified the number of opportunities to reduce the MICU “dwell time,” developed a unit-based ICU “dwell time” dashboard to monitor progress in real-time, and educated staff about the impact of “dwell time” on patient care.

### ▼ OUTCOMES ACHIEVED

- Between May and December 2014, average inpatient Medicare loss per case decreased by 29%, and ICU length of stay for MICU patients decreased by 23%.
- Between May 2014 and February 2015, average MICU “dwell time” decreased by 55% and median MICU “dwell time” decreased by 71%.
- All of the above improvements were achieved as inpatient occupancy increased from 89% in May 2014 to 92% in February 2015.

## Metabolic Screening Turnaround Time

Oneida Healthcare

### ▼ LESSONS LEARNED

- With staff engaged through regular feedback, they were motivated to help in the process to improve turnaround time.
- Staff used critical thinking skills to understand how the turnaround time can impact the outcome of test results.
- Consider opportunities outside the inpatient setting.

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### ▼ PROJECT DESCRIPTION

In January 2014, Oneida Healthcare identified an opportunity for improving the average turnaround time (TAT) for newborn metabolic screening tests to meet the goal of less than two days. An initial investigation showed that specimens were being drawn before midnight, adding an extra day to every test. Upon further investigation, Oneida Healthcare found that some outlier cases were re-draws that were performed in the outpatient lab, with specimens being sent to the New York State Wadsworth Lab in Albany via regular mail. This also increased TAT.

The maternity unit undertook the following initiatives to improve blood draw-to-shipment TAT:

- Education was provided to all registered nurses (RNs) and ward secretaries concerning the newborn metabolic screening regulatory guidelines.
- RNs draw the specimens after midnight and deliver the specimens to the ward secretary after the required dry time has elapsed.
- For outpatient specimens, lab personnel were instructed to deliver all specimens in person to the maternity unit so they can be shipped via UPS.
- The ward secretary ensures data entry is complete and specimens are labeled for UPS pick-up that same day (since there is no UPS service on Sunday, specimens from that day are sent on Monday).
- The ward secretaries were instructed to report delays in UPS pickups and responses from the New York State Newborn Screening Program.
- The ward secretaries maintain a metabolic screening log that includes the newborn date of birth (DOB), blood draw date, UPS pick-up date, and any delays. This log is reviewed daily by the ward secretary to ensure timely completion of the process.
- The nurse manager reviews the log and investigates any delays to identify further opportunities for improvement.
- The nurse manager updates the newborn metabolic screening policy to reflect the above changes.
- The Newborn Screening Quality Indicator “Specimen Turnaround Time Report” provided by the New York State Department of Health has been added to the pediatric process improvement indicators.

These initiatives have resulted in a decrease of one to two days in the newborn screening test turnaround time and brought Oneida into compliance with its goal.

### ▼ OUTCOMES ACHIEVED

- Turnaround time decreased from 3.38 days to 2.05 days.
- There was a steady decrease in unsatisfactory specimens in 2014.

# Emergency Department Process Improvement Project

Our Lady of Lourdes Memorial Hospital, Binghamton

## ▼ LESSONS LEARNED

- Successful process improvement for the ED required engagement and cooperation of the hospital care delivery team, not just the ED, which may in turn identify opportunities for other service areas.
- The introduction of some process improvements, such as the “Dynamic Doc” dictation system, may create a new disruption in service, so it is important to anticipate and recognize these disruptions to stay on course.
- Success depends on the support of all team members. Data transparency holds everyone accountable and may even create some healthy competition among the providers to do the right thing for each patient.

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## ▼ PROJECT DESCRIPTION

Our Lady of Lourdes Memorial Hospital’s emergency department (ED) was newly renovated in 2010 and, at that time, saw approximately 41,000 patients annually. ED leadership recognized that patient flow metrics did not meet acceptable standards and Net Promoter Scores (NPS) reflected a lack of patient loyalty to the ED.

A multidisciplinary team comprised of ED and inpatient physicians and nurses, hospital and ED leadership, and ancillary and support department representatives was formed, and Lean Six Sigma process improvement tools were utilized to identify opportunities to remove wasted steps and streamline patient encounters.

Reception and triage, door-to-doctor, doctor-to-disposition, and disposition-to-departure processes were assessed for inefficiencies. Short-term recommendations for improvement and the desired end-state were identified with the priority to improve door-to-provider time to achieve a level of 30 minutes or less. The initiative was staff-led and the team continues to meet weekly to review metrics and address areas of concern and identify other opportunities to improve service delivery.

## ▼ OUTCOMES ACHIEVED

- Key metrics such as door-to-doctor time improved.
- A true team concept was developed to manage and coordinate patient care within the ED and admission when needed.
- The hospital achieved standardized key metrics and transparent data-sharing with members of the ED team.
- Technology was optimized to support communications within the ED and between the ED and walk-in clinics.

## Radiology Critical Results Reporting

St. Joseph's Hospital Health Center, Syracuse

### ▼ LESSONS LEARNED

- Actively reporting critical results is superior to passive reporting.
- Physician communication and relations improved.
- Information technology, support services, and other non-clinical personnel are important to patient care and outcomes.

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### ▼ PROJECT DESCRIPTION

St. Joseph's Hospital Health Center recognized that the old method of passive notification of critical results could be improved with a follow-up call to confirm the receipt of results. A manual workflow was developed several years ago before the radiology information system (RIS) was available. Active workflow did not rely on the provider to call back to get results. St. Joseph's initiated telephone contact followed by 100% faxed confirmation.

In late 2012, a new RIS was purchased. The internal informatics team developed software and reporting in 2014 that allowed St. Joseph's to keep existing workflow rather than use the passive critical results notification module that came with RIS.

### ▼ OUTCOMES ACHIEVED

- After RIS implementation, baseline data demonstrated average critical results reporting time average of 2.8 minutes for the last six months and 4.0 minutes for the entire year from time of radiologist report to results given to licensed healthcare provider.
- The best measured month (November 2014) showed an average 1.41 minutes from radiologist result to licensed caregiver notification.
- Improved, timely, patient care was achieved, likely contributing to a decrease in length of stay.

## Panic Alert System Increases Comfort Level of Hospital Staff

UHS Delaware Valley Hospital, Walton

### ▼ LESSONS LEARNED

- Engaging staff in efforts to provide a safe environment for patients prompted identifying the need for such an alarm system.
- Support by UHS Delaware Valley Hospital's larger affiliated hospitals' security team helped identify areas of need.
- Support by higher management was critical in the purchase and implementation of this safety program.

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### ▼ PROJECT DESCRIPTION

Prior to the implementation of New York's prescription drug monitoring program (PDMP), it was rare to be concerned with threatening behavior in UHS Delaware Valley Hospital's primary care settings. This new program changed the environment, with a tighter rein on narcotic prescribing. As a result, the hospital began experiencing an increase in behavioral occurrences. Staff feedback reinforced the concern, along with the fact that there was no security staff on-site to respond to such occurrences. This sparked management to focus on more high-risk areas, which now include the primary care centers, with staff and patient safety the priority.

An ad-hoc team was developed to evaluate and identify safety and security concerns for the hospital facilities. Many measures were taken, such as cameras and badge access, but the team's main focus was to find a better way for staff to alert the need for police assistance. After much research, a "Panic Alert System" was recommended to provide a quick way for staff to alert police with key management staff notification at the same time.

The new system provides key staff—such as patient service representatives, nurses, and physicians—with computer keyboard access or panic alert buttons in areas such as exam rooms. This is an electronic system that simultaneously notifies 911 of police need with the exact location on campus and, at the same time, notifies key management of the activation.

Management notification is received via iPads, iPhones, and desktop computer screens. This all happens within seconds of activation. This one-step process eliminates a four-step process and saves valuable time.

### ▼ OUTCOMES ACHIEVED

- A faster and more detailed notification process for law enforcement was instituted, along with notification of key management staff.
- This project improved the comfort level of staff.

## Clinical Operations Improvement

United Health Services, Johnson City

### ▼ LESSONS LEARNED

- Hospitalist alignment in patient throughput and case management initiatives is vital.
- Piloting small initiatives can create big results.
- Performance dashboards with real-time data support rapid change.

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### ▼ PROJECT DESCRIPTION

United Health Services experienced patient throughput delays that impacted essential service delivery in key areas such as the emergency department (ED), surgery, and inpatient placement. Most critical, the “left without being seen” rates in the ED and the holding of inpatients in the ED and post-anesthesia recovery room were rising. An extensive assessment of patient throughput in the fall of 2013 found excessive patient length of stay significantly decreased bed capacity and hampered patient throughput, the case-mix index for the patient population was lower than expected, and there were issues with overstay of observation patients.

To design and implement the necessary changes, transdisciplinary work teams were formed to address issues related to care coordination, patient throughput, and clinical documentation. Most groups met weekly and developed dashboards to track data and measure the effects of improvement initiatives. Teams identified areas for improvement and conducted a series of small-scale pilots to test the efficacy of the plan, build confidence in the solution, and make corrections as needed. Pilots that proved successful were implemented on a larger scale. In all, about 30 pilots were conducted, including same-gender units, re-deployment of housekeeping, prior evening discharge order writing, transdisciplinary patient care huddles, and ED physician deployment systems.

In addition to pilots, education was a key component to success, particularly in the area of clinical documentation improvement. Physicians participated in educational sessions addressing documentation principles, key metrics, and response timeliness. The teaching sessions were videotaped and accessible on the hospital shared drive for reinforcement as needed.

### ▼ OUTCOMES ACHIEVED

- Total annual savings of \$6.9 million was realized.
- Avoidable days were reduced by more than 350 days per month, saving \$2.6 million.
- The hospital saw an increase in capacity of 12 inpatient beds per day, on average.
- Average discharge times were reduced by 60 minutes.
- Creation of observation unit, allowing for proper capture of infusion start and stop times, for additional net revenue of \$555,000 per year.
- Same level of care transfers were reduced by 20%.

CHAPTER 5:

# PROVIDING CARE TO SPECIAL POPULATIONS

# Perinatal Care: Improving Exclusive Breast Milk Feeding Using Evidence-Based Practices

Bassett Medical Center, Cooperstown

## ▼ LESSONS LEARNED

- Achieving organization culture change is challenging. Begin with small, planned, intentional steps, as this actually expedites the change process.
- A lactation support network working collaboratively with members of the healthcare team along the care continuum can effectively promote and support breastfeeding.
- There should be staff members trained and qualified to assist and encourage mothers with breastfeeding at all times.

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## ▼ PROJECT DESCRIPTION

Recognizing the many benefits of breastfeeding, an interdisciplinary team at Bassett Medical Center embarked on a journey founded in Healthy People 2020 objectives to increase the rate of newborns fed breast milk and create a “Baby-Friendly Hospital Initiative” (BFHI) facility.

BFHI is a global program launched by the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF), providing the evidence-based practices of “The Ten Steps to Successful Breastfeeding.”

Using the principles of “Rapid Cycle Improvement” and evidence-based guideline review, the Bassett team identified the most likely determinants of breastfeeding and created a interdisciplinary practice guideline that outlined healthcare management of the breastfeeding dyad and defined the role healthcare personnel play in providing lactation support and teaching. A comprehensive breastfeeding support program evolved, which provided antenatal education, assistance during the immediate postpartum period, and preparation for discharge that included outpatient referrals and lactation consults.

The Joint Commission Perinatal Care core measures were used to measure the rate of newborns exclusively fed breast milk during the entire hospitalization. The journey led to increased rates of newborns exclusively fed breast milk, participation in New York State Breastfeeding Quality Improvement in Hospitals (NYSBFQI) learning collaborative, and application submission to be certified as a BFHI.

## ▼ OUTCOMES ACHIEVED

- An employee and visitor Breast Pump Room supports and promotes breastfeeding in the community.
- Bassett achieved rates that surpass the Healthy People 2020 goal of 81.9% and reached Joint Commission top decile of 100% for newborns exclusively fed breast milk during the entire hospitalization.

# Improving Quality and Access to Emergency Psychiatric Care for Children and Families

Bellevue Hospital Center, Manhattan

## ▼ LESSONS LEARNED

- Children in psychiatric crisis need specialized, appropriate care immediately, which requires specialized staff and dedicated physical space.
- With its ability to provide immediate outpatient psychiatric care to youth, this program addresses a major gap in the child and adolescent outpatient care continuum and reduces unnecessary suffering and hospitalizations.
- Bellevue's program can serve as a hub with facilitated access for a regional network of New York City hospitals, reducing emergency room boarding across the city.

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## ▼ PROJECT DESCRIPTION

The Children's Comprehensive Psychiatric Emergency Program (CCPEP) is the only comprehensive psychiatric emergency care environment in the country dedicated solely to the care of children and adolescents, and the only place in New York City where children and families can see a child and adolescent psychiatrist and receive effective, individualized treatment any time of day or night, regardless of ability to pay. Each child who walks through the doors immediately receives in-depth evaluation by a multidisciplinary clinical team, which consists of trained and experienced child and adolescent psychiatrists and psychologists, psychiatric social workers, and psychiatric nurses. This extensive, specialized evaluation allows accurate diagnosis and connection to the most effective, appropriate, and individually-tailored services to stabilize the child and treat specific ongoing mental health needs.

CCPEP has three main components: the emergency evaluation area, the pediatric extended observation unit (POU), and outpatient acute care services. Children present first to the emergency evaluation area, where they are examined by Bellevue Hospital's multidisciplinary team. More than 60% of youth evaluated can be stabilized, connected with Bellevue's outpatient acute care services, and discharged that same day.

Children who present with more severe and acute symptoms can be stabilized in the pediatric observation unit, or admitted to one of our inpatient psychiatric units or to one of Bellevue's other acute care programs, such as the partial hospitalization program. CCPEP serves as an entry point to this continuum of acute care services and enables Bellevue to serve as a hub for emergency psychiatric care for children in New York City.

## ▼ OUTCOMES ACHIEVED

- Fifty percent of extended observation admissions were discharged after 1.7 days, avoiding longer inpatient stays; overall inpatient admission rates maintained at 20%; one half the national average.
- Immediate acute outpatient care was provided to 445 children in 2014; there were 1,360 such visits since 2011.
- More than 260 children transferred to CCPEP from other hospitals in 2014; there were 414 such transfers since 2011.

## Improving Patient Safety in the Hemodialysis In-Center Unit

Brookhaven Memorial Hospital Medical Center, Patchogue

### ▼ LESSONS LEARNED

- Include both clinical and non-clinical staff in all initiatives.
- Patients and their families must be included as safety partners.
- Education has to be repeated annually.

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### ▼ PROJECT DESCRIPTION

The hemodialysis in-center outpatient unit identified in 2012 that there were negative issues associated with patient vascular access, falls, infections with positive blood cultures, influenza prevention, and grievances. The unit management worked with the performance improvement coordinator to design a tiered performance improvement program focused on continuous improvement in these areas by utilizing resources from Fistula First, the 5 Diamond Patient Safety Program, and clinical skills days for hemodialysis staff.

For Fistula First, a champion was appointed to educate the staff and patients and to monitor outcomes. The dialysis 5 Diamond Patient Safety Program was launched in 2012 with 100% of the staff participating in the Patient Safety Module. In 2013, it was expanded to five modules in which 100% of all unit staff participated. All 5 Diamonds were earned by the unit. Hemodialysis-specific mandatory clinical skills days were designed and presented several times a year. Staff were educated on preventing hemodialysis-related complications of exsanguinations, air embolism, and hemolysis, as well as general emergencies such as cardiac complications and evacuation of the unit.

Patient education was conducted on preventing communicable illness. Waterless hand disinfection stations were placed at the sign-in desk, at the entrance to the unit, and in every pod for the use of patients and staff. Glove boxes were placed next to every chair in the unit. All patients have their temperatures taken before entering the unit to rule out any possible active communicable illness. Masks are available in the unit waiting room for patients, families, and staff.

### ▼ OUTCOMES ACHIEVED

- Arterio-venous fistulas improved from 62% to 67%, and continue to be a focus of ongoing work with the End Stage Renal Disease Network.
- Patient falls were not reported in 2012, were at 2.5% in 2013, and 0.4% in 2014.
- Influenza immunization of patients went from 84% in 2012 to 88.1% in 2014. Influenza immunization of staff was not reported in 2012, but reached 100% compliance in 2014.
- Management observation of staff performing hand hygiene appropriately in 2012 was at 85% and reached 94% in 2014.
- Patient grievances were 7% in 2012, increased to 7.5% in 2013, and reached 0.1% in 2014.

## Restraint Reduction/Elimination in the Behavioral Health Setting

University of Vermont Health Network—Champlain Valley Physicians Hospital, Plattsburgh

### ▼ LESSONS LEARNED

- It is important to empower patients to choose positive alternatives to the use of restraints.
- Early detection of potential crisis events is crucial.
- Alternatives to the use of restraints/seclusions include encouraging a child to express feelings in a safe therapeutic environment with staff support.

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Leadership and staff identified restraint reduction as a priority focus in the behavioral health setting. The goal of restraint reduction was accomplished through using positive, alternative methods to the use of restraints/seclusion. A restraint reduction committee consisting of an interdisciplinary team was formed to discuss restraint reduction opportunities using a humanistic approach.

Three years ago, Preventing and Managing Crisis Situation (PMCS) training, an evidence-based practice, was initiated hospital-wide. Patients and families upon admission to the behavioral health setting are informed of the restraint reduction program and are asked to identify coping skills when faced with crisis situations. Education is provided to patients on the development of positive coping mechanisms when dealing with stressful events. Efforts in restraint reduction have resulted in a change in the organization's culture, with a focus on improved outcomes.

### ▼ OUTCOMES ACHIEVED

Child/Adolescent Behavioral Health:

- 2013: 56 restraint/seclusions
- 2014: 18 restraint/seclusions

Adult Behavioral Health:

- 2013: 28 restraints
- 2014: 12 restraints

## Compassionate Shepherds

Good Shepherd Hospice, Farmingdale

### ▼ LESSONS LEARNED

- Families appreciate the comfort and support provided by volunteers.
- The ability to use volunteers for more than vigil visiting can help reduce anxiety and behaviors, achieving goals previously accomplished by paid staff, freeing staff to work with others and realizing cost savings.
- This initiative identified the need to expand services and look at a variety of ways to recruit and retain volunteers for night and weekend coverage.

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### ▼ PROJECT DESCRIPTION

Good Shepherd Hospice initiated a vigil volunteer program to address the need of family members who were unable to stay or who could not be by the bedside of dying patients. This cadre of uniquely trained volunteers sits vigil or offers comfort and support in the inpatient center to hospice patients who are in their final hours of life. This program has afforded family members and/or caregivers peace of mind, knowing their loved one is not alone and that someone is there on their behalf.

### ▼ OUTCOMES ACHIEVED

- Patient quality of life is improved.
- There is enhanced family/caregiver satisfaction and engagement.
- All of the multidisciplinary staff surveyed agree the use of volunteers in this role enhances quality of patient care and their work environment.
- There is a reduction in the cost related to the need for 1:1 staffing at the bedside.
- This initiative has increased the use of volunteers.
- Staff view volunteers as an extension of the team.
- This program led to a 50% reduction in falls for patients in the inpatient unit, from 18 falls in 2013 to nine in 2014.

# A Multidisciplinary Patient Navigation Program Improves Compliance with Adjuvant Breast Cancer Therapy

Jacobi Medical Center of the North Bronx Healthcare Network

## ▼ LESSONS LEARNED

- Lean methodology was “priceless” in decreasing wait times for imaging and biopsies.
- Low compliance resulted from inability to navigate the hospital, as well as financial and cultural barriers.
- The treating surgeon often had no knowledge of the patient receiving or completing adjuvant therapy after surgical resection.

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## ▼ PROJECT DESCRIPTION

Jacobi Medical Center’s review of breast cancer care over two years (2009-2010) revealed low baseline compliance with adjuvant therapy, so Jacobi instituted a patient navigation program to increase completion of adjuvant therapy. Three National Quality Forum (NQF) measures were the focus of the initiative:

- radiation therapy for women receiving breast-conserving surgery within one year;
- adjuvant chemotherapy when hormone receptor-negative breast cancer within 120 days; and
- adjuvant endocrine therapy when hormone receptor-positive breast cancer within one year.

Jacobi established a service to significantly improve care, particularly for minority populations. A multidisciplinary patient navigation program targeting breast cancer patients over a two-year period (2012-2013) aided in obtaining and timely completion of recommended adjuvant therapy. Jacobi Medical Center’s patient navigator program is unique in that it involves the navigator accompanying women through every step of their diagnostic, treatment, financial, and support care. This initiative aimed to reduce disparity, improve care of minority women with breast cancer, and ultimately improve survival for minority women.

## ▼ OUTCOMES ACHIEVED

- Compliance improved to 100% in the three NQF measures, and Jacobi surpassed NQF benchmarks in “time to treatment” in two of the NQF measures.
- Increased adherence to treatment is presumed to improve survival in breast cancer and help allay disparities of cancer care in minority women.

# HIV Clinic Performance Improvement Project

Jamaica Hospital Medical Center

## ▼ LESSONS LEARNED

- Organization leadership support for this effort was indispensable to achieve the above results.
- The clinical administrator's relentless supervision provided additional stimulus.
- Continuous improvement and buy-in from staff involved was essential in a pursuit toward a common goal of improvement of care for a difficult patient population. A full-time social worker was hired to work with HIV/AIDS patients.

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The mission of this quality management program was to ensure that Jamaica Hospital Medical Center's ambulatory care provides human immunodeficiency virus (HIV) care conforming to the most up-to-date guidelines, recommendations, and standards to be a proactive provider in the New York State goal of eliminating HIV.

The HIV Clinic Performance Improvement (PI) project was undertaken to increase compliance with core medical and non-medical HIV services. Jamaica Hospital Medical Center partnered in this effort with the NY LINKS (Staten Island/Queens) collaborative that was involved in a PI project to improve rate of engagement and retention in care. The medical center conducted an annual independent review on a sample of patients, and the prevention program allowed submission of HIV data on AIDS Institute Reporting System state database.

## ▼ OUTCOMES ACHIEVED

- The patient six-month retention rate improved from 33% to 100%.
- The facility achieved a rate of 100% for viral load tests in 2013 and sustained this rate for three consecutive quarters in 2014.
- The CD4 test was done—consistently in the 90% range—reached 100% at the end of 2014.
- Achieved 100% compliance with Chlamydia, Gonorrhea, Syphilis, and Hepatitis C tests done by the end of 2014.
- Mental health screening—100% achieved in 2013 and remains at 100% since.
- Dental referrals—improvement from 45% at the start of the project to a current rate of 100%.

## Alcohol Abuse Screening

Jamaica Hospital Medical Center

### ▼ LESSONS LEARNED

- Many patients do not realize they have a problem until they are outright asked to consider their drinking habits.
- Taking an informatics-based approach to the training process helped increase completion compliance among the nursing staff.
- Patients have a higher likelihood of accepting help when they are already in the hospital as inpatients, as opposed to being screened in an outpatient setting.

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The alcohol abuse screening performance improvement project is an effort to identify patients who may be at risk for problem drinking. The project's goals are to increase the level of awareness of problem drinking among the patient population, provide brief interventions for patients who are deemed at-risk, and make appropriate referrals to treatment centers.

Each patient receives the alcohol screening from his or her assigned nurse. The nurse documents the findings in an easy-to-use flow sheet in the Epic electronic medical record. The nurse analyzes the data collected from the patient, and, if a brief intervention is needed, the nurse provides an informational packet for the patient. The nurse consults with a social worker if further assessment and evaluation is needed. Referrals to alcohol treatment centers are provided on an as-needed basis.

### ▼ OUTCOMES ACHIEVED

- Compliance with completion of alcohol abuse screening for all trauma patients: 80%.
- Recidivism decreased for trauma patients who were identified as repeat problem drinkers.
- Awareness of problem drinking increased among trauma patients.

# Improving Population Health: Partnering with Patients Diagnosed with Gestational Diabetes to Reduce Potential for Harm

North Shore-Long Island Jewish Medical Center, New Hyde Park

## ▼ LESSONS LEARNED

- Low compliance was due to discontinuation of care and lack of communication and awareness.
- Certain patients are less likely to return for postpartum follow up, including those with obesity.
- There is a paucity of information related to necessity to wait for GTT for six to 12 weeks postpartum, versus performing GTT on day two postpartum while patients are still hospitalized.

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North Shore-Long Island Jewish Medical Center's ambulatory care unit (ACU) cares for many patients with gestational diabetes mellitus (GDM), one of the most common pregnancy complications, affecting 4% to 10% of pregnant women. Numerous adverse maternal, fetal, and neonatal outcomes are associated with maternal hyperglycemia during pregnancy.

About 40% of patients have diabetes or pre-diabetes. Poor glycemic control can lead to chronic complications. It is important for obstetrical patients with GDM to receive proper follow-up care, including a postpartum oral glucose tolerance test, to learn whether they have new onset type 2 diabetes after the birth of their child.

In response to the large number of patients who live with GDM, ACU clinical nurses completed the Diabetes Nurse Champion Program, an eight-week course designed to educate nurses on all aspects of diabetes management. In January 2013, the ACU team found that many GDM patients were not receiving the postpartum glucose tolerance test (GTT) and were not returning for the follow-up visit. The team decided to take an active approach to improve the care delivery system regarding postpartum GDM management.

## ▼ OUTCOMES ACHIEVED

- 2012: 19% compliance with postpartum glucose testing.
- 2013: 67% compliance with postpartum glucose testing.
- 2014: 75% compliance with postpartum glucose testing.

# Increase Breastfeeding Rates for Rural Newborns via Attainment of Baby-Friendly Hospital Designation

Newark-Wayne Community Hospital, Newark

## ▼ LESSONS LEARNED

- Care quality and performance improve most effectively when front-line teams are engaged and own improvement processes.
- Although the results are statistically significant, the culture change is evident in staff and their approach to patient education of prenatal, perinatal, and postpartum patients.
- Keeping the front-line staff informed of performance data and receiving feedback from the staff helps to identify future improvement opportunities and actions.

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## ▼ PROJECT DESCRIPTION

Despite evidence-based support for breastfeeding newborn babies as a pathway to improved lifetime health, rural populations tend to be reluctant to adopt exclusive breastfeeding practices. For Newark-Wayne Community Hospital, that trend has been magnified by factors including a significant local population of non-English speaking migrant workers, for whom cultural barriers effectively discourage exclusive breastfeeding. At the same time, deliveries have increased significantly across all populations at the hospital, creating a need to find ways to promote the healthiest possible outcomes for this growing service line.

A multidisciplinary team was formed to identify opportunities to increase breastfeeding rates for all newborns at the hospital. An action plan was created that included the pursuit of Baby Friendly USA designation. The Baby-Friendly Hospital Initiative (BFHI) recognizes hospitals for offering optimal levels of care for infant feeding and mother/baby bonding, and for successfully implementing the Ten Steps to Successful Breastfeeding and the International Code of Marketing of Breast-milk Substitutes. Achieving this designation is known to be a particular challenge for small rural hospitals, due to lower patient volumes.

This multi-year journey required extensive education and outreach for patients and families, and also demanded thorough retraining and encouragement at every hospital staff level—obstetric and pediatric physicians and mid-levels, patient care staff, and leaders.

## ▼ OUTCOMES ACHIEVED

- The rate of breastfeeding infants increased from 66% to 75%, and the rate of exclusive breastfeeding infants grew from 51% to 83%.
- The rate of skin-to-skin immediately after birth increased from 78% to 90% (vaginal deliveries) and 71% to 100% (caesarians).
- Newark-Wayne Community Hospital became the eighth Baby Friendly USA-designated hospital in New York State.

## Managing Behaviors with Dignity: Reduction of Antipsychotic Medication Usage

St. Catherine of Siena Nursing and Rehabilitation, Smithtown

### ▼ LESSONS LEARNED

- Medication management should not be the first line of treatment for residents with behavioral issues. It is more important to identify the underlying cause of the behavior and test different non-pharmacological choices in an effort to manage the behavior and the underlying cause.
- Residents should be assessed and viewed as individuals. Stereotypes related to age and diagnosis must be avoided to manage and improve the quality of life and the quality of care for all residents. History, background information, areas of interests, habits, and routines that are unique to each resident should be used to formulate a customized plan of care.
- Provide staff with education and direction that enhances their own feelings of belonging and being part of the team and the resident's life. All staff should be encouraged to participate in the plan of care for each individual resident.

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### ▼ PROJECT DESCRIPTION

In 2013, St. Catherine of Siena Nursing and Rehabilitation participated in a Lean Six Sigma Project with two of the system's other skilled nursing facilities (SNFs) in an effort to reduce antipsychotic medications used within the facility and develop alternatives toward behavioral management. Many of the facility's residents were already receiving these medications for long-term use prior to facility admission.

A facility-based committee was formed that included members of both clinical and ancillary departments, to transform the culture of the facility and reduce the reliance on medications for behavioral management.

### ▼ OUTCOMES ACHIEVED

- The facility entered the project with a baseline of 15% of residents using antipsychotic medications in 2012. This was just below the national benchmark of 19.5%. In 2013, after initiation of the project, the facility was able to reduce the use of antipsychotic medications to 8.65% by year end and further reduced usage in 2014 to 3.4%.
- Staff became more engaged in the individual needs of each resident and began to accept non-pharmacological approaches to behavior management. The culture of the facility and how each resident was managed began to change.
- The residents became more alert and more engaged in recreational activity. Activities were geared toward both group and individual resident needs. Their overall quality of life improved.

# Widening the Immunological Cocoon for Newborns: Increasing Tdap Vaccination Among Caregivers

Saratoga Hospital, Saratoga Springs

## ▼ LESSONS LEARNED

- Providing increased, more convenient access to Tdap improves vaccination compliance.
- Offering timely, effective patient and caregiver education fosters increased accountability for newborn safety.
- Implementing a multidisciplinary team approach builds essential support and ownership of operational changes and new best-practice methods.

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## ▼ PROJECT DESCRIPTION

Pertussis in the first three months of life is often severe and can be fatal. Since vaccination against pertussis does not begin until two months of age and continues over an extended period, the most effective way to prevent newborn exposure to pertussis is to immunize adult caregivers with the tetanus, diphtheria, pertussis (Tdap) vaccine.

For years, Saratoga Hospital has routinely offered Tdap to postpartum patients/mothers. At the recommendation of the women's health services department, that practice has been expanded to include fathers and other non-patient caregivers. Compliance is high primarily because the vaccine is made available on the postpartum unit as part of patient and/or caregiver education about pertussis. There is no need to schedule an appointment at another location and, therefore, no delay in immunization.

The result is a wider and deeper "immunological cocoon"—including mothers, fathers, and other caregivers—that helps to protect the region's newborns, whether they are born at Saratoga Hospital or elsewhere.

## ▼ OUTCOMES ACHIEVED

- Tdap vaccination at Saratoga Hospital for all caregivers (including patients/mothers) increased from 169 in 2013 to 287 in 2014.
- In the first 13 months of the expanded Tdap immunization initiative, 251 non-patient caregivers were vaccinated—accounting for 75.6% of hospital-based Tdap vaccination.
- Increased Tdap vaccination of non-patient caregivers has expanded the immunological cocoon for babies born at the hospital—and for neonates throughout the region who might come into contact with the newly-vaccinated adults.

## Obstetrical Improvement Project

Southampton Hospital

### ▼ LESSONS LEARNED

- Increasing documentation and reducing the actual number of scheduled deliveries lowered the risks associated with early-term births.
- Key stakeholders must be involved in the process.
- Empowering nurses to enact a hard stop proved to be effective.
- Evidence can be translated into practice.

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### ▼ PROJECT DESCRIPTION

In 2012, Southampton Hospital participated in the New York State Perinatal Quality Improvement Project, which sought to:

- establish a baseline rate for scheduled delivery between 36 0/7 and 38 6/7 weeks gestation;
- reduce all scheduled deliveries without a medical indication between 36 0/7 and 38 6/7 by 5% or less;
- increase documentation of maternal and fetal indications and gestational age for deliveries to 100%; and
- increase discussion with expectant mothers about risks and benefits of scheduled deliveries to 100%.

To embrace this project, a task force of obstetrical leaders was charged with aligning the strategies of the initiative with the vision of the hospital to achieve a healthy start for mothers and babies. Current practice was assessed and a definition for gestational age was identified using confirmation criteria supported by the American College of Obstetricians and Gynecology.

The team focused on the creation of a communication tool outlining key requirements to be presented at the time of scheduling. Documentation of gestational age with confirmation, assignment of a priority level, and medical indication would now be required.

Working collaboratively, physician and nurse leaders implemented the changes simultaneously. Feedback from staff and physicians was encouraged and incorporated into the communication tool. A policy was developed that included the ability of the nurse manager/designee to enforce a hard stop when scheduling any deliveries prior to 39 weeks gestation. Through physician, nurse, and patient engagement, documentation compliance increased by 32% and the number of scheduled inductions decreased by 34%.

### ▼ OUTCOMES ACHIEVED

- 2013: Achieved 98.1% compliance for documentation of a medical indication and gestational age, an increase of 32% from 2012 baseline data.
- 2014: Achieved 100% compliance and reduced the number of scheduled deliveries by 34%.

## Providing Intensive Clinical and Case Management to Reduce Multiple ED Visits and Improve Mental Health/Substance Abuse Care

South Nassau Communities Hospital, Oceanside

### ▼ LESSONS LEARNED

- EMR technology provides rapid identification of patients at risk.
- Interventions aimed at improving medication compliance, reducing alcohol abuse, and helping families cope with their mentally-ill relatives decrease the risk of hospitalization and lead to improved outcomes.
- Patient-centered groups that focus on re-entry to the community/family and a call-back system offer patients reminders to fill prescriptions and attend pre-arranged appointments.

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### ▼ PROJECT DESCRIPTION

South Nassau Communities Hospital's performance improvement initiative goals for this project included ensuring identification of patients with mental health and substance abuse issues at all points of entry and completing appropriate treatment and referrals. The multidisciplinary team coordinated the following activities:

- developed an emergency department (ED) support staffing model consisting of case managers and social workers available seven days a week, 16 hours per day;
- assigned behavioral health nurse practitioners to the ED on weekdays, weekends, and holidays to provide additional clinical care and ensure that there are no delays in evaluating behavioral health patients;
- initiated electronic medical record (EMR) case-finding tools and electronic alerts that identified patients at high risk for multiple ED visits;
- case managers used an algorithm to support referrals to social work, pain management, pharmacists, mid-level practitioners, and/or community resources;
- the ED unit-based pharmacist assisted with medication issues;
- inpatient behavioral health groups for medication management and family support groups for planning the transition back to the community, which includes assurance of prescription medication availability; and
- post-discharge calls are made to treated and released, and discharged patients.

### ▼ OUTCOMES ACHIEVED

- The number of ED visits for mental health and substance abuse decreased by 15.5%.
- The behavioral health length of stay decreased 21.86% from 2013 to 2014.
- The number of patients referred from the ED to community-based services/resources increased by 50.27% (185 referrals in 2013 to 278 referrals in 2014).
- Case management staff completed interviews for more than 90% of identified ED patients during case management hours.

# Sustained Reduction in Restraints in the Department of Psychiatry and the Entire Facility

St. Catherine of Siena Medical Center, Smithtown

## ▼ LESSONS LEARNED

- Redefined culture changes are achieved by education and role modeling.
- Positive results are rewarding and motivating to the staff to sustain reduced usage of violent restraint.
- All team members are equally important and accountable for their contributions in sustained restraint reduction.

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## ▼ PROJECT DESCRIPTION

In 2003, there were 35 episodes of usage of violent restraint devices in St. Catherine of Siena Medical Center's department of psychiatry; this was unacceptable. Department leadership reevaluated prevalent practices of response to potential violence and actively sought to effect change in culture and philosophy. Strategies included education, monitoring, auditing, role modeling, and education of each staff member to the philosophy of restraint device reduction. In 2004, the number of episodes of violent restraint use dropped to zero in the department of psychiatry. For ten years, this remarkable achievement (extremely rare usage of restraints on violent patients) has been sustained, ranging from zero to three episodes. Hospital-wide results were almost identical. In 2003, there were ten episodes of violent restraints, which dropped to three in 2004, and over the next ten years, usage remains extremely low, ranging from zero to five.

## ▼ OUTCOMES ACHIEVED

- Violent restraint device use was reduced 60% hospital-wide.
- Violent restraint device use in the department of psychiatry was reduced 100%.
- Over ten years, there were 198,400 inpatient psychiatric admissions, with only 22 patients or 0.01% requiring violent restraint and 17 patients or 0.009% requiring seclusion.
- In 2003, in the department of psychiatry, there were 35 episodes of violent restraint and in 2004 there were none; during the period of 2005 through 2014, there was a range from zero to three episodes of violent restraint.
- In 2003, there were ten violent restraints hospital-wide, in 2004 there were three; from 2005 to 2014, usage of violent restraint ranged from zero to five.
- The Psychiatry Patient Satisfaction Nursing Score improved from 88 in 2003 to 90 in 2014.
- The Psychiatry Patient Satisfaction Overall Score improved from 80 in 2003 to 86 in 2014.

# Best Practices for Viral Respiratory Outbreaks in a Pediatric Long-Term Care Facility

St. Mary's Hospital for Children, Bayside

## ▼ LESSONS LEARNED

- A case definition provides a standardized approach that helped identify, manage, and eliminate transmission of viral respiratory infections.
- A proactive approach reduced the intensity of efforts invested in reactive action, saved dollars, improved patient safety and outcomes, and is sustainable.
- Culture change is achievable but requires an urgent issue that must be addressed, a vision grounded in evidence-based practices, an ability to overcome obstacles, and the communication of successes to anchor the change.

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## ▼ PROJECT DESCRIPTION

Outbreaks of viral respiratory pathogens persisted despite existing protocols, including transmission-based precautions, increased education, hand hygiene observations, staff cohorting, unit quarantines, limited visitation, and increased environmental cleaning. A more clearly delineated response to the earliest signs of viral infection was needed to effectively contain and ultimately prevent outbreaks, which resulted in the creation of a multidisciplinary clinical team tasked with putting in place more effective policies and procedures.

A major underlying cause of this issue was the lack of a standardized case definition for testing and isolation of respiratory viral disease. The team developed simple, easily identified isolation threshold criteria that included a fever of 100.5° F or above and at least one of the following: runny nose, change in sputum, shortness of breath, wheezing, and a new or increased cough. Patients that met these criteria would remain on isolation precautions until the results of the polymerase chain reaction testing were available. If negative, isolation precautions would be discontinued. If positive, the patient would remain on isolation precautions until asymptomatic, when additional testing would be performed to assure the elimination of viral shedding.

The second phase of the initiative was centered on roommates of positive viral cases. Frequently, viruses are shed before the patient exhibits signs and symptoms of an infection. Therefore, roommate exposure to the virus before transmission-based precautions were in effect was likely. Roommates of positive viral patients were also placed on transmission-based precautions for the duration of the incubation period of the virus. Isolation is discontinued if asymptomatic after the incubation period.

## ▼ OUTCOMES ACHIEVED

- There were dramatic decreases in infections, acuity, antimicrobials, morbidity, and mortality, including a median of 60% fewer annual respiratory infections per year in the seven years following implementation.
- Costs decreased due to transfers, emergency room visits, admission, bed hold days, medications, personal protective equipment, acuity, and staff illness.
- There is less disruption to the patient's care, increased quality of life, and more patient satisfaction.

## Geriatric Emergency Department Unit

Upstate University Hospital, Syracuse

### ▼ LESSONS LEARNED

- A long-term commitment is needed; the reduction in admissions developed slowly.
- Culture change is necessary.
- Maintain a higher level of geriatric knowledge by staff, considering the flux of staff.

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The population of older adults in the U.S. is burgeoning. According to the U.S. Census Bureau, the number of people over age 65 will rise from about 40 million in 2010 to an expected 77 million in 2030. The New York State Office for the Aging suggests that this impact will be greater in New York.

Seniors' medical needs are unique; they typically have multiple, chronic diseases with acute exacerbations. As a group, older adults are not as mobile, are on multiple medications, are often socially isolated, and many have some degree of cognitive dysfunction.

As the access point between outpatient and inpatient care, the emergency department (ED) is uniquely positioned to significantly influence both the quality and cost of healthcare. The present ED model of rapid diagnosis, treatment, and disposition does not adequately provide for the needs of most older adults. A model that provides not only emergency medical expertise, but also social support, outpatient coordination, specific skills in geriatrics, and pharmacologic oversight serves the senior population best.

The "Senior ED" concept was developed by the American College of Emergency Physicians (ACEP) beginning around 2007 and culminated in the publication of the *Geriatric Emergency Department Guidelines* in 2013. Upstate University Hospital opened its Senior ED in July 2013 to reduce the hospital admission rate, provide staffing with nurses and other providers who have a higher level of geriatric knowledge and skills, provide a physical environment appropriate for older adults, provide pharmacy services that included a complete medication evaluation by a pharmacist to reduce the risk of adverse drug events, and coordinate with community resources and agencies to provide support to discharged patients as needed.

### ▼ OUTCOMES ACHIEVED

- The hospital admission rate was reduced from 45% to 37%.
- ED utilization by seniors increased.

# Finding Our NICHE: Improving Quality of Care for Hospitalized Older Adults by Implementing a Geriatric Resource Nurse Model

Upstate University Hospital, Syracuse

## ▼ LESSONS LEARNED

- Exceptional quality improvement can be achieved through leadership collaboration, interdisciplinary participation, and front-line staff engagement.
- Data collection and analysis is necessary to evaluate the current quality program and identify additional opportunities for meaningful change.
- Return on investment savings is easily demonstrated after implementation of the NICHE GRN model by measuring reduction in healthcare-acquired infections, and decrease in unwanted nursing turnover.

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## ▼ PROJECT DESCRIPTION

This project focused on improving quality of care for older adults in an academic medical center. Upstate University Hospital's vision is to provide comprehensive, seamless, and innovative patient- and family-centered healthcare to improve the health status of the communities it serves. In 2013, 33% of the hospital's admissions were over age 65. With older adults as core consumers, improving care for patients over 65 years old was a quality imperative. The organization previously implemented Nurses Improving Care for Health System Elders (NICHE), and was adopting the NICHE Geriatric Resource Nurse (GRN) model at both campuses. As a function of progressive implementation, in 2014 the cross-campus NICHE steering committee was charged with the task of implementing system-wide improvements in the care of older adults.

Strategies included expanding the NICHE steering committee by:

- increasing representation to include key stakeholders from both campuses (acute care for the elderly, pharmacy, dietary, therapies, and palliative care);
- collecting, analyzing, and evaluating data of core quality measures including falls, restraints, and pressure ulcers;
- extending the GRN model to specialty areas including the transitional care unit and geriatric emergency medicine;
- presenting geriatric-specific education to nurse residency participants;
- providing geriatric patient care associate training to non-licensed nursing staff;
- presenting geriatric-specific topics at nursing grand rounds; and
- evaluating patient and family satisfaction of patients over 65 years old.

## ▼ OUTCOMES ACHIEVED

- Fall rates and restraint use decreased on the pioneer unit.
- Registered nurse satisfaction results (National Database of Nursing Quality Indicators) improved in seven out of ten domains on the pioneer unit.
- Patient satisfaction scores of patients over age 65 improved on the pioneer unit.
- The number of GRNs increased from six to 46 over three years and the number of units with GRNs increased from one to four.

## IMPACT: Inpatient Multidisciplinary Pediatric Asthma Care Team

Strong Memorial Hospital/University of Rochester Medical Center

### ▼ LESSONS LEARNED

Successful, sustainable changes in practice and culture can be achieved through:

- an inter-professional team approach with shared leadership, rather than an hierarchical structure;
- early and ongoing involvement of stakeholders to promote candid feedback, engagement, and support; and
- abandoning the notion of “we can’t” and embracing the challenge of “why can’t we?”

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### ▼ PROJECT DESCRIPTION

Front-line clinicians at Strong Memorial Hospital identified an opportunity to improve outcomes by standardizing care for children with asthma. An inpatient “admission-to-discharge” clinical pathway was developed using current evidence and practice guidelines. A standardized respiratory scoring system was adapted to facilitate communication between members of the care team. Administration of albuterol for asthma was changed from via nebulizer to metered-dose inhaler (MDI) because recent evidence suggests that delivery by MDI causes less toxicity and fewer side effects than by nebulizer. Attending physicians provided bedside training and real-time feedback to nurses to ensure consistency in assessment and promote team-based care. The same inter-professional online education was provided to nurses, residents, and attending physicians.

Tools were built into the electronic medical record to facilitate and document use of the pathway. Project planning, implementation, and evaluation on the pilot unit were accomplished using several quality improvement (QI) techniques. Adjustments to the pathway were made based on chart review and clinician and patient/family feedback. The initiative was then disseminated to other general units.

This project was supported by hospital administration and its success was highlighted at an annual meeting of the University of Rochester Medical Center Board of Directors.

### ▼ OUTCOMES ACHIEVED

- Length of stay for children admitted with an asthma exacerbation decreased by nearly 35% (26.8 vs. 41.5 hours).
- Bed capacity increased, which reduced emergency department (ED) “boarding” and the need to refer patients to other facilities.
- Medication administration was optimized, with less toxicity.
- Improved, standardized, and consistent patient education.
- Sustainability of the pathway, with current utilization at 94%.
- Decreased variability in care of inpatient pediatric asthma.

## Helping Children BREATHE: Transforming Asthma Care through Patient-Centered Management Protocols

Winthrop-University Hospital and Children's Medical Center, Mineola

### ▼ LESSONS LEARNED

- A relentless focus on patient activation through education to be partners in care, process reliability, a multidisciplinary approach, and re-engineering post-acute care follow-up helped Winthrop achieve its goals.
- Direct front-line engagement through change management and facilitative leadership are essential for a transformation project of this scale.
- This initiative bolstered the organization's culture of learning and improvisation.

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### ▼ PROJECT DESCRIPTION

In partnership with the Asthma Coalition of Long Island, funded by a grant from the New York State Department of Health to the American Lung Association of the Northeast, Winthrop-University Hospital and Children's Medical Center implemented BREATHE (Bringing Resources for Effective Asthma Treatment through Health Education). This multimodal quality improvement (QI) initiative aimed to improve secondary and tertiary care prevention and reduce inpatient utilization as measured by emergency department (ED) visits and hospitalization.

Based on recommendations from National Asthma Education and Prevention Program Expert Panel Report-3, Winthrop created a three-component asthma "bundle": education, follow-up, and improved communication. Using a low literacy pictorial asthma flip chart, patients were educated by physicians on asthma pathophysiology, triggers, and control. The nurses and respiratory therapists demonstrated and ensured understanding of use of asthma devices.

The discharge process was re-engineered to provide patients with an asthma action plan, a follow-up appointment with their primary care physician (PCP), and a pulmonologist. A home health agency nurse visited patients within 48 hours post-discharge to assess the patient's environment and asthma control. Follow-up calls were made at 72 hours, three months, six months, and 12 months from the admission date by the discharge call nurse.

Information on all of the above measures was consistently communicated to the PCP and pulmonologist. Data on all measures and bundle reliability was collected and analyzed on a monthly basis. After five months of success at the inpatient site, the program was replicated with minor adaptations at the Patient Centered Medical Home that caters to the most under-served population of Nassau County—with similar successful results.

### ▼ OUTCOMES ACHIEVED

- Inpatient site (152 patients): 74% decrease in ED visits due to asthma and 89% decrease in hospitalization due to asthma.
- Outpatient site (44 patients): 56% decrease in ED visits due to asthma and 74% decrease in hospitalization due to asthma.

CHAPTER 6:

# REDUCING HOSPITAL-ACQUIRED CONDITIONS AND READMISSIONS

## Taking Every PreCAUTION to Protect Our Patients from Infections: HACs—We OWN Them, So Let's Eliminate Them

Adirondack Health, Saranac Lake

### ▼ LESSONS LEARNED

- The mindset of clinicians should be that urinary catheter insertion should be the exception, not the norm.
- Medical staff partnership, nursing enthusiasm, and application of any nurse-driven protocol is key to changing outcomes.
- Follow-up monitoring is necessary to ensure new behaviors are learned, implemented, and hardwired.
- Changes to practice and new philosophies do not change overnight; you need to give positive feedback and never give up.

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### ▼ PROJECT DESCRIPTION

A Multidisciplinary Quality Improvement Team was established in the fall of 2013, using the New York State Partnership for Patients as the source of education behind evidence-based best practices and in the development of a criteria-based nursing protocol for indwelling urinary catheter insertion, maintenance, and removal.

This project was driven by the *Institute of Medicine Future of Nursing Report*, which calls for maximizing the scope of the registered nurse. This project included a partnership with physicians to develop the criteria for indwelling urinary catheter insertion and removal. Adirondack Health developed a nurse-driven urinary catheter removal protocol and a nursing catheter bundle of care for insertion, maintenance, and removal. In addition, Adirondack implemented a checklist on every catheter kit for quality monitoring/tracking purposes. The facility also achieved buy-in from the emergency department providers and nursing staff to follow criteria for insertion and proper handoff when transferring to another unit.

### ▼ OUTCOMES ACHIEVED

- CAUTI rates decreased from six in 2013 to three in 2014.
- Catheter days decreased from 2,477 in 2013 to 2,111 in 2014.
- The Core Measure Surgical Care Improvement Project (SCIP) score for Indwelling Urinary Catheter Removal Post Operation Day One or Two increased to 100% compliance for one full year.

# A Multidisciplinary Approach to Reducing Hospital Readmissions

Adirondack Medical Center, Saranac Lake

## ▼ LESSONS LEARNED

- Success lies in the total commitment of the multidisciplinary team to conducting the daily patient rounds, with provider's involvement being essential to positive patient outcomes.
- Communication is essential between and among the patient, family, caregivers, and multidisciplinary team, including primary care provider and the referred community agencies.
- Pharmacy education provided to the patient and multidisciplinary team and assistance in medication reconciliation process are key components to a safe transition to the post-acute setting.

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A review of Adirondack Medical Center's 30-day readmission rate indicated that although overall it was lower than state and national averages, its Medicare population was higher than average. The facility recognized this as an improvement opportunity and established a multidisciplinary team to review patient intake and discharge processes, identify weaknesses, and develop action plans to correct weaknesses.

The team identified that daily multidisciplinary rounds had been discontinued due to staffing changes. Re-institution of these discussion sessions prompted the revision of the patient admission assessment tool. In addition, the active involvement of hospitalists during the rounds proved to be a critical element to their success.

Discharge planning beginning at admission was also a focus for improvement efforts. Staff, along with family and caregivers, began to prepare for the patient's release from the hospital by assembling key information into a newly designed discharge planning portfolio. These folders contain, in one location, information related to patients' medications, follow-up instructions, and planned provider appointments. Telephone numbers were included to facilitate contact and follow-up as needed.

## ▼ OUTCOMES ACHIEVED

- From May through October 2014, there was an overall trend toward decreased readmissions. Though the trend turned upward in the last quarter, overall the readmission rate decreased by 13.5% for all payers and 47.7% for Medicare-only patients.
- Daily multidisciplinary patient rounds were re-instituted.
- Clinical care coordinators increased their availability to include the emergency department.
- A number of tools were created, including a revised admission assessment screening tool, patient/family caregiver readmission interview screening tool, primary care provider identification tool, and discharge planning portfolio for patients and families.

## Reducing Hospital-Acquired Conditions and Readmissions

Arnot Health, Elmira

### ▼ LESSONS LEARNED

- Hardwiring the process is a requirement.
- Patient satisfaction is a necessity.
- Follow-up documentation and measuring outcomes are essential parts of the process.

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Arnot Health developed readmission risk stratification criteria using weights and statistically significant factors including age, gender, number of emergency department visits, number of operative visits, and number of medications, and many other factors weighing outpatient conditions and critical health status. This is built and hardwired in the electronic medical record using notifications and a real-time risk score that is updated when alerts/thresholds cross the limits and case management change care plans. The weight-based risk assessment score is monitored frequently within the length of stay (LOS) of the patient at multiple set checkpoints to improve optimal quality of care and reduce readmissions.

### ▼ OUTCOMES ACHIEVED

- LOS is optimized.
- The cost of care is reduced.
- Quality of care has improved.
- Patient and staff satisfaction have increased.

# Congestive Heart Failure Medicare Readmission Reduction Project

Colleges of Health Sciences, SUNY Potsdam

## ▼ LESSONS LEARNED

- CHF patients have a complex set of needs that require a multidisciplinary support.
- Depression screening and a proactive stepwise approach to depression is an important part of CHF management.
- Student health coaches enhance CHF patient support and adherence.

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## ▼ PROJECT DESCRIPTION

This was a pilot project focused on a subset of chronically-ill adults having high readmission rates and that have historically been high utilizers of healthcare resources. The project focused on the question of how best to meet the healthcare needs of this population in an area of rural New York challenged by high unemployment, poor health outcomes, and limited healthcare resources.

The population chosen for this project was traditional Medicare patients admitted with a primary diagnosis of congestive heart failure (CHF). The metric chosen to measure the effectiveness of the project was decreased readmission rates. The initial plan was to have a transitional care registered nurse (RN) focus on monitoring the clinical metrics such as daily weight, medication adherence, and dietary guidance using telephone calls, medication-minders, and regular primary care follow-up visits post-discharge. Analysis of the aggregate data and individual cases revealed modest improvement, but complex psychosocial issues were limiting adherence with plans.

A more comprehensive approach was adopted, incorporating depression screening on all CHF patients, proactive social work involvement, and the initiation of a health coach program using local university students to work individually with CHF patients. Analysis of the data revealed a robust improvement in readmission rates using the comprehensive approach. The next step is to expand this program to all CHF patients and include other high-readmission, chronically-ill adults.

## ▼ OUTCOMES ACHIEVED

- Readmission rates for CHF patients decreased.
- This program demonstrated the effectiveness of a comprehensive approach to CHF management that includes depression screening and psychosocial assessment.

## Journey Toward Zero Harm

Cohen Children's Medical Center of New York, New Hyde Park

### ▼ LESSONS LEARNED

- To achieve superior outcomes, special populations require specific bundle elements.
- Leadership matters—safety and quality must be the true north for the leadership team.
- Sustainability requires constant vigilance and consistently asking “why” when an event occurs.

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### ▼ PROJECT DESCRIPTION

In 2012, Cohen Children's Medical Center of New York embarked on a journey toward creating a high-reliability organization grounded in a culture of safety. To reduce variability and manage human performance in a complex system, senior leadership was trained in high-reliability methodology and more than 1,100 staff members attended safety behaviors training. As a result, leaders actively monitor, reinforce, and refine the culture to ensure that staff values and behaviors remain aligned to achieve desired results. This behavior is engrained in the culture through consistent leadership rounding to observe and reinforce behavior of front-line staff and medical personnel as well as aligning metrics, goals, and performance incentives to reinforce behavioral changes.

The organization then applied safety culture behaviors to the real world and focused on reducing hospital-acquired conditions (HACs), which are preventable but can yield devastating outcomes.

Evidence-based bundles were developed as a result of multiple Plan-Do-Study-Act (PDSA) cycles for each HAC, in which small tests of change yielded big outcomes. Sensitivity to operations and preoccupation with mistakes was achieved through data transparency and viewing each failure as an opportunity.

The most vulnerable populations yielded the most impressive results due to highly reliable behaviors consistently following evidence-based elements for those most at risk. Cohen Children's Medical Center broke down the old cultural barrier that accepted that it was impossible to have zero harm. Instead, each harm event is now viewed as a system failure that requires a root cause analysis to determine how the system failed.

### ▼ OUTCOMES ACHIEVED

- Excellent bundle compliance (85% to 100%) for all HACs.
- Reduction in hospital-wide catheter-associated urinary tract infection (CAUTI) rates—2012: 3.83; 2013: 3.37; 2014: 0.00; 2015 year to date: 0.00.
- Reduction in hospital-wide central line-associated bloodstream infection (CLABSI) rates—2012: 1.59; 2013: 0.51; 2014: 0.68.
- Reduction in hematology/oncology CLABSI rates—2012: 3.78; 2013: 0.57; 2014: 0.25.
- Reduction in hospital-wide ventilator-associated pneumonia rates—2012: 0.61; 2013: 0.70; 2014: 0.45.

# S.K.I.N.D.E.E.P. Tool for Pressure Ulcer Prevention in Critical Neonatal and Pediatric Population Undergoing Extracorporeal Membrane Oxygenation (ECMO)

Cohen Children's Medical Center of New York, New Hyde Park

## ▼ LESSONS LEARNED

- Pressure ulcers are avoidable and the key is education, embracing change, constant audits, and feedback.
- Cultural shift is slow, but improvement inspires caregivers to embrace change for the sake of patient safety. Leadership support is paramount.
- PDSA cycles are necessary, and revisions of elements that do not work are a must. Introducing one element at a time can be helpful, but persistence is the key to success.

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## ▼ PROJECT DESCRIPTION

A Plan-Do-Study-Act (PDSA) cycle concentrating on compliance with current pressure ulcer prevention bundle elements revealed poor assessment of risk, suboptimal documentation, lack of proactive measures, and inadequate knowledge of preventive techniques and products. The S.K.I.N.D.E.E.P. Pressure Ulcer Prevention Tool, an action algorithm that focuses on assessment, prevention, and use of skin care prevention products, was developed.

Cohen Children's Hospital Medical Center of New York aimed to launch this tool for a most vulnerable population—recipients of extracorporeal membrane oxygenation (ECMO). In 2013, an extensive educational program on pressure ulcer prevention/management was mandated for all ECMO staff. This initiative required a multidisciplinary involvement: ECMO, intensive care unit, surgical and medical physicians, nurses, respiratory therapists, and parents.

Full implementation in the clinical practice setting began in July 2013. Every patient undergoing ECMO is assessed right after vessel cannulation. Risk is documented daily with risk assessment scale and clinical factors. All devices are offloaded. Nurses are required to document prevention measures every shift. Clocks are used for repositioning. Parents are educated on skin hygiene and device maintenance. Respiratory therapists partner with nurses in respiratory device management. Intensive care unit project co-leads audit every patient chart daily. If skin irritation is noted, medical and skin teams are alerted. As a result of this initiative, hospital-acquired pressure ulcers in ECMO patients were reduced by 99%.

## ▼ OUTCOMES ACHIEVED

- Pre-implementation era (March 2012 to June 2013): revealed 15 pressure ulcers; 14 patients underwent 149 ECMO days; six patients were pressure ulcer-free, while eight had one or more pressure ulcers.
- Post-implementation era (July 2013 to December 2014): 17 ECMO recipients, 131 ECMO days, and only one pressure ulcer.

## Preventing Ventilator-Associated Pneumonia (VAP)

Columbia Memorial Health, Hudson

### ▼ LESSONS LEARNED

- The most important component and critical factor for such a project is strong administrative leadership combined with collaboration among hospital staff.
- The collaboration of the team working together to provide the best outcomes was a daily opportunity to learn and grow as professionals.
- When establishing a plan of care, both the patient and family must be engaged.

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### ▼ PROJECT DESCRIPTION

Columbia Memorial Health implemented the ventilator-associated pneumonia (VAP) bundle to improve outcomes for orally-intubated patients. Critical care protocols were obtained and approved by relevant clinical committees.

The key components of the VAP bundle are to achieve compliance with the traditional VAP prevention bundle, including head-of-bed elevation of 30 degrees or more, peptic ulcer disease and deep venous thrombosis prophylaxis, daily sedation “vacation,” and regular evaluation of readiness to wean. In addition, there are other significant interventions such as:

- compliance with oral care protocols;
- implementing or enhancing activity and mobility protocols;
- implementing or enhancing sedation reduction protocols; and
- reinforcing teamwork practices in the critical care setting.

A daily goal-directed interdisciplinary team was developed to ensure all interventions of the VAP bundle were implemented to maintain a VAP rate below the National Healthcare Safety Network (NHSN) average and a lower-than-average patient ventilator rate of 2.5 days/patient. The goal is to continue to maintain the VAP rate at zero and maintain/decrease ventilator days (2.5 days or less). The team consists of a pulmonologist, respiratory therapist, pharmacist, registered nurse, infection control, dietician, and social worker.

### ▼ OUTCOMES ACHIEVED

- Surveillance and tracking of adherence to the bundle reduced VAPs.
- Culture and communication change improved patient safety.
- Daily goal-directed interdisciplinary team rounding increased positive patient outcomes.
- Comprehensive documentation on assessments and rounding sheets were completed.
- Audit compliance with protocols and collection of data on all elements was achieved.

## Assessment and Building of Best Practices to Maintain Ventilator-Associated Events Rate at Zero

University of Vermont Health Network at Champlain Valley Physicians Hospital (CVPH) Medical Center, Plattsburgh

### ▼ LESSONS LEARNED

- TeamSTEPPS has improved teamwork, patient safety, and communication skills between disciplines.
- Introduction of a mobility protocol has provided staff with guidelines to follow for early ambulation.
- The wake up and breathe protocol for early assessment of readiness to wean and sedation holiday is addressed through a physician to improve extubation time and has resulted in a standardized care of the mechanically-ventilated patient. Implementation of protocol and orders in computerized physician order entry set associated with ventilator orders and other VAE bundle medications and treatments facilitates a standardized approach.

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Infection prevention is a priority for University of Vermont Health Network at CVPH, as evidenced by having maintained a ventilator-associated pneumonia (VAP) rate of zero for more than 1,250 days. Through collaboration and teamwork, the intensive care unit (ICU) staff, respiratory therapists, and intensivists continually monitor progress and seek new and innovative approaches to promote patient safety and reduce ventilator-associated events (VAEs).

Much of the organization's success is due to systems that have been established since the Institute for Healthcare Improvement *100,000 Lives Campaign*. Hardwiring a scripted bedside report during interdisciplinary rounds guides staff to address key components of the VAP bundle.

Implementation of evidence-based protocols has improved current practice. The protocols include oral care, readiness to wean assessment, sedation holiday, interdisciplinary bedside rounding, bedside hand-off of care, early ambulation of the ventilated patient, and, most recently, carbon dioxide monitoring. Leadership supports and promotes the recognition of success hospital-wide in VAE prevention with a celebration party every 250 days that the facility has been without a VAE.

### ▼ OUTCOMES ACHIEVED

- The VAP rate has been zero since October 2012, with the last VAP on September 10, 2011.
- Strategies for VAP prevention are hardwired across all disciplines.
- TeamSTEPPS® engagement is used by 100 ICU/respiratory staff.

## Care Transitions Program to Reduce Readmissions

**University of Vermont Health Network—Elizabethtown Community Hospital**

### ▼ LESSONS LEARNED

- There are many supportive services available to patients that the community and community/healthcare workers do know about.
- Care transitions processes supported by hospital administration (non-funded) can make a significant impact on readmission rates for the hospital.
- Improved community agency relationships are integral for an effective discharge home and sustainable continuum of care.

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### ▼ PROJECT DESCRIPTION

Hospitals that hold critical access designation are exempt from any federal funding for care transitions programs. In identifying that small hospitals and their patients have some, if not more, of the same challenges in readmissions, the hospital made a grassroots effort in developing and coordinating a care transitions program including a community-based care transitions committee.

A hospital care transitions program was developed for patients preparing for discharge, and a coach was trained to initiate and facilitate the best practice methodologies (Coleman Care Transitions Program). The care transitions program facilitates 24- to 72-hour post-discharge telephone calls on all patients and provides access to a care transitions coach who will make home visits to patients that require medication reconciliation support, coordination of community services, or are at risk for readmission. This also includes patients seen in the emergency department who screen at risk for a revisit.

A community agency group was formed with the common goal of promoting an effective continuum of care. The supportive services of the community-based care transitions committee are key referral sources for discharged patients. The goal of this committee is to ensure that patients in the community are provided with a full continuum of care as they are discharged from the hospital. The committee meets monthly and is comprised of 21 agencies that encompass services within five counties.

### ▼ OUTCOMES ACHIEVED

- All-cause readmission rates decreased from 10% in 2012 to 4% in 2013, and to 3.5% in 2014.
- Qualitative outcomes are highlighted by the progressive relationships and open communication among community organizations.

## Zero Avoidable Harm by 2015

Faxton St. Luke's Healthcare, Utica

### ▼ LESSONS LEARNED

- Performance improvement teams with specific goals and metrics work.
- As you improve in one area, you need to keep measuring and work on the next area.
- Involving all levels of staff in improvement goals and making individual performance part of the effort creates buy-in and a shared vision.

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### ▼ PROJECT DESCRIPTION

Faxton St. Luke's Healthcare was an active participant in the Institute for Healthcare Improvement (IHI) *100,000 Lives Campaign* from 2000 to 2006 and in the *5 Million Lives Campaign*, which followed in 2007. The organization embraced many of the quality initiatives identified by these programs such as rapid response teams, falls reduction teams, and bundles to reduce central line-associated blood stream infections (CLABSI). From 2007 to 2010, reductions in harm were seen as well as changes in the types of harm occurring as Faxton St. Luke's developed teams to address a particular issue of harm (such as falls with injury or CLABSI).

In 2009, the Faxton St. Luke's chief executive made a "Big Hairy Audacious Goal" as part of the five-year strategic plan, and challenged the organization to reduce avoidable patient harm to zero by the end of 2015. Hospital leadership developed corporate, departmental, and personal goals to reduce harm.

Faxton St. Luke's began tracking instances of patient harm via use of the IHI Global Trigger tool in 2011. Five inpatient medical records are randomly selected every week and data gathered about the incidents of harm or potential harm as defined within the trigger tool. During a monthly department quality review meeting called the Quality Excellence Council, the data identified during the chart reviews is discussed and actions taken to reduce those harms. Performance improvement teams were created to address the most frequently-occurring items and as these teams have performed, the harms have reduced.

### ▼ OUTCOMES ACHIEVED

- The rolling 12-month percent of patients harmed from 2011 through 2014 declined from 18% to 5%, and the organization is on track to be at zero by the end of 2015.
- Falls and falls with injury have been reduced.
- Ventilator-associated pneumonia (VAP) has decreased, with zero VAPs for 28 months.
- Nosocomial infection markers and hospital-acquired pressure ulcers decreased.

# The Impact of Ultraviolet Disinfection and Evidence-Based Interventions on Hospital-Onset *Clostridium difficile*

Faxton St. Luke's Healthcare, Utica

## ▼ LESSONS LEARNED

- Teamwork and collaboration enhance process change, implementation, and sustainment.
- UV disinfection impacts environmental cleanliness and healthcare-associated infections.
- Multiple disciplines are necessary to successfully implement UV cleaning including infection prevention, nursing services, admissions department, and environmental services.

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## ▼ PROJECT DESCRIPTION

In 2012, Faxton St. Luke's Healthcare had the second highest incidence rate of hospital-onset *Clostridium difficile* (*HO-C. diff*) in New York State. Best practices were in place for prevention of *C. diff*, including hand hygiene, contact precautions, hospital-wide disposable thermometer use, prolonged isolation, and bleach cleaning. The facility invested in a triple emitter ultraviolet (UV) disinfection system in June 2013 to be used as an addition to the bundle of *C. diff* prevention measures.

A cross-sectional design study was conducted that included all inpatients. The baseline period was July 1, 2012 to June 30, 2013, where all bundle components were in place to prevent *C. diff* and a comparison timeframe of July 1, 2013 to June 30, 2014, where all bundle components were in place and the addition of a UV disinfection protocol to the terminal room cleaning process was implemented. An algorithm was used to guide the environmental services department in selecting priority rooms for UV usage. Rooms with *C. diff* patients were a top priority at this time. *HO-C. diff* cases were determined using the National Healthcare Safety Network (NHSN) surveillance definition and overall rates were calculated by dividing the total number of cases by the total number of patient days multiplied by 10,000 patient days.

## ▼ OUTCOMES ACHIEVED

- There was a 41% reduction in *HO-C. diff* from the baseline to the intervention period.
- Baseline Period Rate: 19.11/10,000 patient days.
- Implementation Period Rate: 11.29/10,000 patient days.

# Impacting Patient Safety at the Point of Care: Implementing and Improving Barcode Medication Administration Compliance

Flushing Hospital Medical Center

## ▼ LESSONS LEARNED

- Optimal use of technology and automation can be achieved through review and analysis of automated reports.
- Dialogue with front-line staff is crucial in assessing the impact of human factors in safe and effective use of technology.
- Sustainability of initial success requires continuous vigilance and hardwiring of process changes.

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## ▼ PROJECT DESCRIPTION

In October 2012, the hospital implemented an electronic health record (EHR) and barcode medication administration (BCMA) technology. An integrated EHR and BCMA system enables nursing and other healthcare staff involved in medication administration to utilize barcode scanners to scan patient and medication barcodes; verify that the correct medication is ordered, administered on time, and measured in the correct dosage; and document any pertinent patient information (e.g., vital signs).

In August 2013, the Medication Safety Committee decided to use automated reports to assess compliance with BCMA use. The data revealed overall hospital-wide compliance with patient barcode scanning at 86% and medication barcode scanning at 83%.

The hospital implemented a barcode scanning initiative with the aim to achieve 95% compliance rate. Daily unit-specific barcode scanning compliance reports were sent to nursing managers to address areas of non-compliance. For any process breakdowns identified, a focus group worked on corrective actions. Within two months, by November 2013, overall barcode compliance increased by about 10%. To date, these outcomes have been sustained through monthly evaluation of compliance rates.

## ▼ OUTCOMES ACHIEVED

- From August 2013 to January 2015, patient and medication barcode scanning has improved by about 10% and the organization reached its goal of 95% compliance.
- About 15,000 more doses of medications have been scanned per month and adverse events have been prevented.
- With monthly monitoring, additional process breakdowns have been identified and work is in progress to adapt solutions to achieve 100% compliance.

## Reducing Colon Surgical Site Infections

Good Samaritan Hospital Medical Center, West Islip

### ▼ LESSONS LEARNED

- Training operating room staff to optimize new products and techniques for bedside skin preparation for these patients achieved significant goals.

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### ▼ PROJECT DESCRIPTION

Good Samaritan Hospital Medical Center monitored the surgical site infection (SSI) rate for colorectal surgery and recognized an opportunity for improvement. Research was conducted on best practices and the data from the American College of Surgeons and The Joint Commission were reviewed. In March 2014, the hospital implemented the following recommendations as required practice:

- patient skin chlorhexidine preparation the evening before and the morning of surgery;
- use of mechanical bowel prep for elective cases;
- oral antibiotic prep for elective cases;
- intravenous antibiotic prophylaxis administered within 60 minutes of the incision and discontinued within 24 hours of the incision;
- hair clipping before entering the operating room with repeat skin preparation;
- the use of a wound protector to decrease the risk of wound infection;
- enhanced infection control practices related to gowns and gloves of the operating team;
- maintain patient's temperature at 36 to 38 degrees Celsius throughout the procedure;
- all post-operative dressing changes are performed with proper gloves and hand hygiene;
- maintain a dry occlusive dressing immediately post-operatively, which should be removed within 48 hours after surgery; and
- consider wound probing or wound wicks if you are dealing with a contaminated wound or possible infection to avoid accumulation of fluid deep to the dermis.

For inpatients, Good Samaritan Hospital Medical Center needed a way to identify those patients who required pre-operative skin preparation before their scheduled surgery. The hospital decided to create a Ticket for Pre-Operative Skin Preparation. This initiative identifies an inpatient scheduled for colon surgery and assigns operating room staff to perform the required skin prep at the patient's bedside the evening prior to surgery.

### ▼ OUTCOMES ACHIEVED

- As of October 2014, the hospital has had a 68% reduction in the number of colon surgical site infections.
- The adjusted rate was 3.6 per 100 surgeries, which represents seven infections in 2014 and the lowest rate for this hospital in over five years. This is compared to a pre-intervention rate in 2013 of 11.6 per 100 surgeries. This represented a total number of 21 infections related to colon surgery in 2013.

## Reduction of Falls and Fall-Related Injuries

Good Samaritan Nursing Home, Sayville

### ▼ LESSONS LEARNED

- Fall risk assessment alone cannot predict fall risk. The knowledge of the resident, history, preferences, and unique attributes are essential to prevent falls.
- Antipsychotic medications increase the risk of falls; reduced usage assisted the facility in fall reduction.
- The individual resident's perception of quality of life and the resident's participation in the nursing facility community influence the risk of falls.

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### ▼ PROJECT DESCRIPTION

The facility's clinical and leadership team participated in a Six Sigma Project focused on reducing falls and fall-related injuries, and also a system-wide falls reduction initiative that included participants from system hospitals, skilled nursing facilities, home care, and hospice to share data, initiatives, and best practices across the continuum of care.

Information obtained through the Six Sigma project and system-based committees were shared with facility staff through educational sessions, data updates, and discussion of new initiatives in an effort to change the culture of the facility as it related to falls and fall-related injuries. Weekly meetings were initiated to discuss residents with falls and fall-related injuries, with review of current interventions and documented plans of care.

As a result of the Six Sigma project, a new database was created to track and trend falls, fall-related injuries, locations of falls, falls by community/unit, falls by diagnosis, common medication trends related to falls, and mental status/cognitive trends related to falls. New initiatives were based on data, trend results, and individualized reviews of residents by the interdisciplinary team.

Data concerns prompted some new initiatives. The primary medication related to the falls data was psychoactive medications, which spurred efforts to reduce antipsychotic medications. Most of the residents were falling in their rooms; recreation and individualized activity reviews were initiated. Enhanced education regarding the diagnosis of dementia and dementia management was initiated for all staff.

### ▼ OUTCOMES ACHIEVED

- Falls were reduced from 5% (per 1,000 patient days) in 2013 to a current rate of 3.7%.
- Minor fall-related injuries decreased from 21% in 2012 to 18% in 2014.
- Major fall-related injuries were reduced from 6% in 2013 to 2% in 2014.
- Antipsychotic medication use decreased from 13.2% in 2012 to 7.6% in 2014.

# Readmission Prevention Success in Congestive Heart Failure Patients with a Floor-Based Pharmacist Intervention

John T. Mather Memorial Hospital, Port Jefferson

## ▼ LESSONS LEARNED

- The number of identified medication discrepancies was higher than expected.
- The timing of medication review must be day-of or day-prior-to discharge to have maximal impact.
- Process and discussion takes one hour, minimum.

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## ▼ PROJECT DESCRIPTION

John T. Mather Memorial Hospital had a baseline 22% readmission rate for congestive heart failure (CHF) patients. The hospital found that medication issues are often a key driver.

Using pharmacists to educate patients and caregivers regarding medications improves outcomes. The hospital piloted the use of a pharmacist to educate patients identified at risk for readmission. Patients were included if their discharge disposition was to home; patients were excluded if they had comorbidity of dementia, were to be discharged to a facility, or were placed in hospice or comfort care. The pharmacist compiled a list from the patient's admission home medication list and changes made during the hospital course. The pharmacist compared this list to the planned discharge medication list to identify discrepancies, which were discussed with the discharging physician. Adjustments were made as necessary.

During a patient meeting, the pharmacist then reviewed the corrected discharge medication list with the patient. Special focus was given to new medications, changes in dosages of existing medications, and clarification between brand and generic medication names. Anticoagulants, diuretics, insulin, inhalers, and antihypertensives were also given "high alert" status and targeted education regarding common issues.

After the patient meeting, the pharmacist gave a "warm hand-over" to the readmissions prevention coordinator. The coordinator called all patients post-discharge at one day, one week, and four weeks. The warm hand-over enabled the call to be targeted to the issues identified by the pharmacist. Example: Diuretic discontinued in hospital due to renal failure; telephone calls ensured patient followed up with nephrologist/primary to address if/when diuretic could be resumed. This ensured accurate home medication management.

## ▼ OUTCOMES ACHIEVED

- Readmission rate, pharmacist intervention group:  
Quarter 1 2014 = 22%; Quarter 4 2014 = 0%
- Readmission rate, non-pharmacist intervention group:  
Quarter 1 2014 = 23%; Quarter 4 2014 = 11%

## The “WE CAN” Campaign: An Innovative Strategy to Prevent Patient Falls

John T. Mather Memorial Hospital, Port Jefferson

### ▼ LESSONS LEARNED

- Diligent application of evidence-based, fall prevention interventions alone will not succeed in preventing inpatient falls.
- A comprehensive, fall prevention culture change is the catalyst needed to successfully prevent inpatient falls.
- The synergy created by integrating evidence-based education, personal values, and modern technology is the stimulus needed to achieve high-quality patient outcomes, specifically in prevention of falls.

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### ▼ PROJECT DESCRIPTION

Despite amplified awareness, fall rates continue to climb throughout the United States. The increasing fall rate is primarily due to the rapidly increasing aging of the population—among those 65 and older, one in three falls each year. Additionally, as many as 12% of patients fall while hospitalized. Thirty percent of inpatient falls result in injury, with 5% resulting in serious injury, such as fractures. The costs associated with treating injuries sustained from inpatient falls are not reimbursed by Medicare or other health insurance companies. Therefore, fall prevention has become a major strategic initiative in all healthcare facilities.

In mid-2013, direct care nurses at a Magnet-designated, community hospital recognized that even the most diligent use of evidence-based, fall prevention interventions did not prevent patient falls. Thus, a nurse-led “WE CAN” Fall Prevention Campaign was initiated in the third quarter of 2013 by an interdisciplinary sub-group of the hospital’s fall prevention committee. The cultural transformation caused by the WE CAN campaign has resulted in a significant, steady decline in patient falls on medical/surgical and critical care units.

### ▼ OUTCOMES ACHIEVED

- Over the one-year period, third quarter 2013 to third quarter 2014, the number of patient falls decreased 50%, and falls with injury decreased 33% in medical/surgical and critical care units.
- To date, patient falls and falls with injury continue to decline to below the national benchmark established by the National Database of Nursing Quality Indicators (NDNQI®).

## Elimination of Early Elective Delivery (EED) Prior to 39 Weeks Gestation

Jones Memorial Hospital, Wellsville

### ▼ LESSONS LEARNED

- The providers are willing to meet the standard of care when they are presented with the recommendations and data to support them.
- It is important to continue to evaluate the data and work with other departments to accomplish the goal.

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Jones Memorial Hospital undertook this initiative to reduce early elective delivery (EED) of patients prior to 39 weeks gestation. Baseline data for elective deliveries less than 39 weeks gestation in 2011 were 26.73%, and in January 2012 the rate increased to 33.33%. The data were presented to the obstetric (OB) practitioners, along with the appropriate indications for EED. The staff made the decision to put steps into place to prevent and eliminate EED.

### ▼ OUTCOMES ACHIEVED

- The last EED occurred in March 2013.
- All mothers-to-be are educated on the reasons to deliver at >39 weeks.
- The hard stop process has been in place for over a year with no EEDs for 2014.

## *Clostridium Difficile* Reduction in a Community-Based Hospital

Kenmore Mercy Hospital/Catholic Health

### ▼ LESSONS LEARNED

- A collaborative, interdisciplinary approach was imperative to our success.
- Before looking at new initiatives, research enforcement of current policy.
- Providing periodic project progress to front-line associates fueled morale for continued improvement.

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### ▼ PROJECT DESCRIPTION

In fall 2013, Kenmore Mercy Hospital developed a program for a “Picture Perfect Room.” This initiative also included the implementation of cleaning high-touch surfaces with bleach wipes. The goal was to not only include heightened cleaning procedures, but to also provide the patient with an aesthetically pleasing “look” to the room. The plan included working with each unit nurse manager for the exact setup of every room type. Photos were taken and detailed checklists were made of the room and color-coded, clearly outlining the responsibility of the environmental services (EVS) associate and nursing attendant. The photo sheets were laminated, posted in the EVS closets, on the EVS carts, and at the nursing stations.

Education was provided to both disciplines on the checklist with specialized instruction to the EVS associates on the cleaning of high-touch surfaces with bleach. The cleaning was then validated with adenosine triphosphate (ATP) technology with a luminometer. Feedback was provided to the EVS associates both in real time and at periodic staff meetings. Concurrent audits of the checklist were also completed on iPads to give feedback to the departments.

The second part of the initiative was to eliminate the use of reusable rectal thermometers. The organization worked collaboratively with its infection control physician advisor who cited the potential for cross-contamination between patients via the handle of the thermometer. The reusable rectal thermometers were removed on March 1, 2014 and replaced with disposable thermometers.

The third component was to review the facility's current *Clostridium difficile* (*C. diff*) policy. It was noted that the current policy included placing a patient in precautions while awaiting *C. diff* results and Kenmore Mercy recognized that it was not consistently doing this. The policy was re-educated to the front-line nurses and nursing supervisors.

### ▼ OUTCOMES ACHIEVED

- Hospital onset *C. diff* rate improved from 10.37 in 2013 to 5.90 in 2014, almost a 50% reduction.
- Kenmore Mercy tested ten high-touch surfaces in the patient room with the luminometer and achieved a 51% pass rate in the third quarter of 2014 and 68% in the fourth quarter of 2014.

## Fall Prevention

Mercy Medical Center, Rockville Centre

### ▼ LESSONS LEARNED

- Staff needed additional education in completing the Morse Scale and the Institute for Healthcare Improvement Risk for Injury Scale, necessitating entity-wide education.
- The personal care assistant (PCA) screen in Epic did not include the “High Risk for Fall” yellow banner and this was subsequently added.
- The importance of including other disciplines on the team was evident. For example, pharmacy is part of the post-fall analysis and helps identify issues with medications.

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### ▼ PROJECT DESCRIPTION

Healthcare professionals at Mercy Medical Center are committed to practice within a culture of safety and commitment to excellence. In 2013, the organization determined that its fall prevention program did not meet the desired level of quality. Although fall prevention is interdisciplinary, it is a nursing quality outcome measure and is benchmarked by The National Database of Nursing Quality Indicators (NDNQI).

A strategic planning team was formed, working within a shared governance system committed to improving Mercy Medical Center’s fall prevention/reduction program. This team consisted of registered nurse (RN) staff and ancillary members who contributed valuable input. The team met on alternate weeks (days and nights), interfaced with the system-based falls reduction team and participated in sub-groups defining policy, education, and post-fall analysis. At the beginning of the project, the strategic planning team conducted a review of evidence-based literature and shared knowledge to identify areas for improvement. The team instituted a post-fall investigation tool to better understand the reasons patients were falling and identify patterns or trends. This was implemented in addition to the high-risk interventions already in place. The team collected baseline data from 2013. The goal at the beginning of 2014 was to reduce inpatient falls by 10%.

### ▼ OUTCOMES ACHIEVED

- The baseline data for 2013 showed a fall rate of 3.0%.
- The inpatient fall rate for 2014 was 2.4%.
- The facility met and exceeded its goal and decreased falls by 22%.

# Sustained Positive Outcomes for Pressure Ulcer Prevention in an Urban Acute Care Hospital System

Mount Sinai Health System, Manhattan

## ▼ LESSONS LEARNED

- Executive support of quality improvement projects is paramount.
- Using evidence-based practices with strong support in the research literature will support sustaining quality activities and projects across all systems.
- Identifying and engaging stakeholders and front-line staff and providing ongoing interactions including educational opportunities, quality reports, and progress meetings will create an environment for sustaining improvement.

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## ▼ PROJECT DESCRIPTION

Mount Sinai Health System's pressure ulcer prevention program includes a Six Sigma approach with gap analysis, process mapping, stakeholder analysis, front-line staff feedback, and expert reference. Activities are data-driven, with specific targets and timelines. Support is from executive leadership and chief nursing officers. Policies and procedures are aligned. Proven pressure redistribution technology is available for all patients. Nurses with advanced training conduct quality surveys and lead unit-based improvement projects.

Mount Sinai Health System participates in value analysis projects and developed efficacious and cost-effective formularies for prevention and treatment, which are standardized across the hospital system. The system partners with physicians, licensed independent practitioners (LIPs), nutritionists, physical and respiratory therapists, and information technology (IT) specialists. Using these partnerships, the system provides timely and transparent quality data to evaluate effectiveness of processes and identify opportunities for improvement.

Collaboration with IT developed a database from the electronic medical record (EMR) that promotes fast, efficient, and accurate reporting and provides daily information to the wound, ostomy, and continence nurse (WOCN) team of all patients at risk for pressure ulcers, admitted with pressure ulcers, or who are documented as sustaining hospital-acquired pressure ulcers. This promotes opportunities for immediate expert WOCN consultation and education to nursing staff, LIPs, ancillary staff, patients, and caregivers.

## ▼ OUTCOMES ACHIEVED

- The system's hospitals' 2014 prevalence for hospital-acquired pressure ulcers is 1.4%, which is below the national average for hospitals. This represents a 22% reduction in patient harm.
- This initiative has yielded cost avoidance of \$2.1 million across the health system.
- More than 885 front-line staff members are engaged as unit-based skin champions.
- Rates of pressure ulcers have been below national averages for more than one year.
- Prevention programs have been enriched across seven hospitals, supported by evidence-based best practice.

## Bedside Medication Verification Decreases Medication Errors

Mount St. Mary's Hospital, Lewiston

### ▼ LESSONS LEARNED

- Bar-code scanning reduces medication errors by detecting them before administration.
- Education and collaboration is necessary for technology-based solutions to fully yield positive outcomes.
- Electronically-generated reports provide important data for process improvement and improved quality of care.

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### ▼ PROJECT DESCRIPTION

About 44% of medical errors encountered by hospitalized patients in the United States are related to medication errors, with 53% occurring at the administration stage. Medication errors can include a patient receiving the wrong medication or wrong dose, resulting in physical and emotional harm and/or increased length of stay. Bar-code scanning of the medication and patient's identification (ID) band has been shown to greatly reduce the rate of medication errors.

Bedside medication verification (BMV) was implemented in 2013, along with the electronic medical record (EMR) system. In early 2014, it was apparent that scanning compliance was not at an acceptable level. Education was provided for all nursing staff in patient care areas. Collaboration from nursing staff as to reasons for noncompliance (#1—time consuming) led to a better understanding of BMV as a patient safety measure. Nurses were instructed on the importance of embedded safety measures and their effect on quality care. Data were extrapolated monthly and sorted by department and nurse so follow-up coaching could occur. Results were also presented to the monthly patient safety committee and quality improvement board meetings.

### ▼ OUTCOMES ACHIEVED

- Precursor medication events decreased from 86 in 2013 to 57 in 2014 (down 34%).
- Patient scanning compliance increased from 77% in January 2014 to 96% in December 2014 (goal was 90% or greater).
- Medication scanning compliance increased from 84% in January 2014 to 93% in December 2014 (goal was 90% or greater).
- Improved understanding of processes and quality/safety outcomes by nursing staff.
- Supplied data from medical/surgical floor—all floors showed similar results.

# Using Technology to Reduce Intravenous Narcotic Adverse Drug Events

NewYork-Presbyterian/Hudson Valley Hospital, Cortlandt Manor

## ▼ LESSONS LEARNED

- Gather an inter-professional team that understands the structure and process of the problem.
- A thorough literature review can reveal strategies that have been effective in other organizations.
- Be flexible: Some computer-based solutions take time to implement or require multiple revisions on the road to success.

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## ▼ PROJECT DESCRIPTION

There is minimal evidence in the medical literature on how to effectively treat acute pain in the older adult. Research on pain control for older adults is mainly focused on addressing chronic pain. Healthcare organizations face the challenge of how to safely treat acute pain in these patients while preventing adverse outcomes. An additional challenge is balancing patient safety with patient satisfaction, related to pain management. The elderly are especially vulnerable to oversedation and respiratory depression. A review of rapid response team events revealed a trend of naloxone administration shortly after the administration of intravenous narcotics. To address this troubling pattern, an inter-professional team was assembled and given the task of researching best practices in the administration of opioid medication in older adults. Recommendations were made on how to use the technology the organization currently has to ensure the safety of this vulnerable population.

## ▼ OUTCOMES ACHIEVED

- Approval of *Geri-friendly IV Narcotic Guidelines*: These guidelines are adhered to by all practitioners, pharmacists, and nurses.
- Use of naloxone for the inpatient population has been reduced by more than 50% over an 18-month period. The rate of naloxone use decreased from 2.2 doses per 1,000 patient days in 2013 to 0.85 doses per 1,000 patient days in 2014.
- Patient satisfaction scores for pain management remain consistent since the inception of the *Geri-Friendly IV Narcotic Guidelines*. Prior to the adoption of the new narcotic guidelines, patients responded to the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey question on management of pain as “Always” 72.4% of the time. This trend has been maintained through the fourth quarter of 2014, with patients rating management of their pain as “Always” 73% of the time.

# Infection Prevention: Hardwiring Processes in the Day-to-Day Activities

North Shore University Hospital, Manhasset

## ▼ LESSONS LEARNED

- Start small, aim big: The organization initiated sending urine analysis first to the lab. If positive, providers then order a urine culture. This process was implemented house-wide, then system-wide.
- Using a visual aid chart (Bristol Stool Chart) with non-clinical laboratory processing staff helped with identifying inappropriate *C. diff* stool specimens.
- Using an electronic medical records-based list to intercept orders if there is another source of infection and initiating discussions with the providers was an effective strategy.
- Partnering with the front-line staff makes a difference in sustaining change.

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## ▼ PROJECT DESCRIPTION

Together through various partnerships, North Shore University Hospital worked on reducing the number of catheter-associated urinary tract infections (CAUTIs), central line-associated bloodstream infections (CLABSIs), surgical site infections (SSIs), and *Clostridium difficile* (*C. diff*) infections. Infection preventionists created and incorporated criteria-based lists into their daily work. The laboratory team utilized the Bristol Stool Chart to assist staff in determining the appropriate specimen. The central line team conducts rounds on its patients, and the operating room (OR) partnered with infection prevention and anesthesia staff to conduct rounds in the OR. All of these interventions showed that hardwiring process changes into the hospital's day-to-day activities is an effective way to ensure that best practices becomes the default standard of care.

Decreasing the number of infections ultimately leads to cost savings and better patient outcomes. The total cost of a CAUTI ranges from \$1,200 to \$4,700. In 2013, a total of 135 CAUTIs were reported, and in 2014, 86 were reported—a decrease of 49 CAUTIs that saved the hospital about \$230,300. The total cost of a CLABSI ranges from \$48,000 to \$55,646. In 2013, a total of 16 CLABSIs were reported, and in 2014, 14 CLABSIs were reported—total cost savings of \$111,292.

## ▼ OUTCOMES ACHIEVED

- Sending urine analyses prior to sending urine cultures reduced the total number of inappropriate urine cultures.
- A total of \$31,304 was saved from not submitting inappropriate specimens to the laboratory.

# Empowering the Clinical Bedside Nurse: Using a Nurse-Driven Protocol to Decrease Catheter-Associated Urinary Tract Infections

Northern Westchester Hospital, Mt. Kisco

## ▼ LESSONS LEARNED

- There is a significant financial savings in avoidance of these device-related infections.
- Empowering the clinical bedside nurse to remove indwelling urinary catheter contributed to the reduction of CAUTIs.
- Use of the bladder scanner reduced the rate of reinsertion of an indwelling urinary catheter.
- Concurrent review is a fundamental component to the success of process change.

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In 2012, Northern Westchester Hospital identified that despite a three-year, multi-modal, interdepartmental effort to decrease indwelling urinary catheter-associated urinary tract infections (CAUTIs), initial improvements in patient outcomes threatened to stagnate without nursing empowerment and ownership.

The goal was to decrease CAUTIs by 50%. At the onset, the rate of CAUTIs was 7.14 infections/1,000 catheter days. Over the following two years, a 70% decrease in CAUTIs was achieved. During 2012, a multidisciplinary workgroup was convened to further the gains made in decreasing CAUTIs. This team—which included the quality management department, infection control director, medical director, and representatives from nursing shared governance council (scopes and standards, nursing quality, informatics)—was charged with developing a protocol addressing the usage of indwelling urinary catheters and the prevention of CAUTIs.

The team reviewed the Centers for Disease Control and Prevention and Society for Healthcare Epidemiology of America guidelines to develop a policy that included all the clinical and non-clinical practice recommendations. The protocol included utilization of physician order sets to address clinical criteria for appropriate insertion and timely removal, obtaining a baseline culture, conducting and documenting a daily catheter needs assessment, and enabling catheter removal by nursing staff. The second phase was to develop a process using a portable bladder scanner to determine urinary retention and the possible need for re-catheterization. A policy was developed whereby on the first voids of all patients after indwelling catheter removal, a bladder scan is performed by the clinical bedside nurse. If the residual is more than 300cc, a straight catheter is used to drain the bladder of urine (physician order required).

## ▼ OUTCOMES ACHIEVED

- A nurse-driven indwelling urinary catheter discontinuation protocol is pivotal in decreasing CAUTIs by more than 97%.

# Under Pressure: Reducing Pressure Ulcers on a Medical/Surgical Unit

Oswego Health

## ▼ LESSONS LEARNED

- Initial and ongoing skin assessment is vital for early risk identification. It is important to start early preventive care.
- Pressure ulcer prevention is everyone's responsibility, not just nursing. Family and patient education is an important role in the reduction of pressure ulcers.
- Staff can be resistant to change unless they are directly involved with the process.

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## ▼ PROJECT DESCRIPTION

The reduction of pressure ulcers is included in Oswego Health's strategic plan and clinical quality/patient outcomes improvement strategies. Before this initiative, the hospital pressure ulcer rate was higher than the state benchmark. Improvements have included participation from front-line staff in the clinical areas in an effort to successfully reduce hospital-acquired pressure ulcers. Initiatives include a skin care team, focused education of a complete skin assessment, and nurse education on the Braden Scale. Patients scoring 14 or below electronically initiate a notification consult to the skin and wound nurse along with a dietitian. Once the wound care consult is completed, it is electronically sent to the physicians for review and signature.

All high-risk patients receive a clock on the outside of their door to alert staff of the need to be repositioned every two hours. A white board in each hallway on the unit with the patient room numbers helps communicate who needs to be positioned every two hours. Quality improvement principles and methodologies include Lean approaches as well as Bordering on Zero Liberating Structures, such as a Discovery and Action Dialogue, which helped change the way front-line staff address issues and solve problems.

## ▼ OUTCOMES ACHIEVED

- Oswego Health achieved a 91% decrease in pressure ulcers on medical/surgical services. Currently, the hospital-acquired rate is less than 1%.
- Awareness and regular education increased for staff on complete skin assessment.
- Front-line staff are highly involved with the skin care team and motivated to create department-wide improvements.

## COACH for Heart Failure

Our Lady of Lourdes Memorial Hospital, Binghamton

### ▼ LESSONS LEARNED

- Coordinated care across the continuum is extremely important for population health.
- Consistency and providing individuals with the resources they need to achieve better outcomes can decrease hospital heart failure readmissions.
- Understanding barriers at both the patient and institutional level is important in developing a successful plan of care.

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Heart failure affects nearly six million people in the United States, with about one million being admitted to the hospital each year. Of the people admitted, approximately 27% are readmitted within 30 days. Heart failure is also responsible for up to 15 million office visits; 6.5 million hospital days; and costs the nation \$34.4 billion each year in healthcare services, medications, and lost productivity, according to the U.S. Centers for Disease Control and Prevention.

For the past several years, the readmission rate for heart failure patients was high at Our Lady of Lourdes Memorial Hospital. Through grant funds, the hospital developed an innovative program to assist in care coordination for heart failure patients to improve outcomes. Called Coordinated Outreach Achieving Community Health (COACH) for Heart Failure, the program involves a nurse-driven inter-professional approach to patient care, including one-on-one patient education provided by cardiovascular disease managers (nurses), dieticians, and physical therapists. COACH also includes consults from palliative medicine, cardiology, and cardiac rehabilitation, when appropriate. Patients are assisted with follow-up arrangements and given contact numbers for questions. Primary care and cardiology appointments are also scheduled for these patients prior to discharge. Home care and tele-health services are arranged, scales and blood pressure cuffs provided, and transportation coordinated for those who need assistance. Patients also receive follow-up calls and may receive home visits from the cardiovascular disease manager if they choose not to participate, or are not eligible for home care.

### ▼ OUTCOMES ACHIEVED

- Heart failure readmissions were reduced by 30%.
- More standardized care is provided for heart failure patients.
- The same education is provided to patients across the continuum.
- There are increased transitional care calls.
- Alerts were developed in electronic health records (EHRs) to identify heart failure COACH patients.
- Utilization of services, palliative medicine, home care referrals, and tele-health have increased.
- Previously unidentified barriers were recognized such as medication auto-refill issues, transportation concerns, and inability to access providers.
- Community meetings were established with local pharmacists.
- Communication improved across the continuum regarding heart failure patients.

## Zero Tolerance for Patient Harm Resulting from Falls

Phelps Memorial Hospital Center, Sleepy Hollow

### ▼ LESSONS LEARNED

- Never accept conventional wisdom about “inevitability” of healthcare-induced harm.
- Organizational culture change is entirely necessary and very much encouraged through participation in nationally-recognized efforts such as NICHE.
- There is no substitute for frequent attentive contact with patients, especially those identified as at risk.

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Each year, Phelps Memorial Hospital Center works diligently to implement effective strategies to reduce the number of patient falls, particularly those that result in serious reportable injury. While the hospital achieved reductions in total falls, four patients still suffered serious injury from falls in 2013. The hospital was determined to dramatically reduce this adverse outcome. Senior administration declared zero tolerance for serious injury and made this a top patient safety priority for 2014. Several strategies were expanded or initiated, including:

- *Enhancing Geriatric Care Expertise:* The hospital had already embarked on its journey toward Nurses Improving Care for Healthsystem Elders (NICHE) designation, achieving it by early 2013.
- *Patient Safety Rounds:* Each patient is visited every 15 minutes. Safety rounds include observing each patient twice every 15 minutes as staff walk up and down the corridor. Patients are checked for feet in bed or feet safely on the ground.
- *Enhanced Analysis:* A monthly falls committee, driven by regular nursing staff, uses a detailed debriefing tool that allows for thorough analysis of factors associated with falls. Each fall is carefully reviewed as a “mini route cause analysis” with recommendations for action.
- *Enhanced Awareness and Identification:*
  - standardized identification on patient wrist, in documentation, on communication board, including when transferred off units for tests and procedures;
  - standardized armband;
  - each patient is issued safety socks;
  - each unit has a calendar prominently displayed that shows the number of days since the last patient fall.
- *Early Risk Assessment:* Hendrich II is used, with automatic order for physical therapy evaluation based on risk level were approved by the medical board.

### ▼ OUTCOMES ACHIEVED

- Using New York Patient Occurrence Reporting and Tracking System criteria, there were zero reportable injuries in 2014 and zero in 2015 year-to-date.
- Total falls decreased by 38% percent over the last five years.

# A Three-Pronged Approach to Reducing Readmissions: Technology, Interdisciplinary Collaboration, and Cross-Setting Partnerships

Saratoga Hospital, Saratoga Springs

## ▼ LESSONS LEARNED

- Leveraging technology reduces readmissions by alerting and garnering multidisciplinary resources to immediately respond to high-risk patients at point of entry.
- Structuring interdisciplinary collaboration creates synergy, optimizes care, and focuses team members on readmission-avoidance strategies.
- Partnering across settings enhances quality, efficiency, and healthcare economics. It takes a village to reduce readmissions.

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## ▼ PROJECT DESCRIPTION

The national 30-day readmission rate for Medicare patients remains at 15% to 20%. Despite a rate slightly below the national average, Saratoga Hospital set and achieved a goal of reducing readmissions by at least 20%. Driven by the best practice of shared accountability, the hospital's interdisciplinary readmission avoidance collaborative practice group tackled this challenge.

The solution was a triad of interventions:

- *Initiating New Alert and Monitoring Technology Across Services*—using electronic trackers at point of entry to immediately identify patients who are at high-risk for readmission; employing electronic text messaging to immediately alert care managers when a 30-day readmission patient arrives; and displaying high-risk notifications in real time on newly developed smart boards in the emergency department and on all nursing units.
- *Enhancing Interdisciplinary Collaboration*—via daily rounding, frequent data analysis, patient-focused multidisciplinary conferences, and monthly strategic sessions to institute rapid cycle change.
- *Strengthening Cross-Setting Partnerships*—creating a patient safety net as patients and their caregivers transition from hospital to home or alternate care settings. Partnerships with primary care, skilled nursing facilities (SNFs), assisted living, home health, and others facilitate safer hand-off communications, reduce fragmentation, improve care, and ensure optimal patient outcomes, particularly regarding reducing readmissions.

## ▼ OUTCOMES ACHIEVED

- The rate of 30-day, all-cause, all-payer readmissions was reduced by 22.84% (13.31% to 10.27%).
- The hospital was awarded the New York State Partnership for Patients highest score of “5” due to level of community involvement.
- The 2013 average Hospital Consumer Assessment of Healthcare Providers and Systems score was 90.5 for satisfaction with discharge, a score above state and national mean.
- SNF Medicare “bounce-backs within 30 days” were reduced from 15.3% (first quarter 2013) to 9.6% (second quarter 2014).

## CUSP to Reduce Colon Surgical Site Infections

St. Elizabeth Medical Center, Utica

### ▼ LESSONS LEARNED

- Implementation of a group of interventions (i.e., bundle) was successful, despite no clear single cause of previous unsatisfactory outcomes.
- Involvement of front-line staff and leaders was critical to success.
- Evidence supporting interventions was important in reducing practice variation.

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The Colon Surgical Site Infection Comprehensive Unit-Based Safety Program (CUSP) is designed to make care safer by improving the foundation of how physicians, nurses, and other clinical team members work together. CUSP is implemented at the unit level. It provides a structured strategic framework for safety improvement that can be implemented throughout the organization. This program draws from front-line providers who have the most knowledge regarding safety hazards and the means to lessen the severity of those hazards, and provides a mechanism to help defend against hazards. CUSP is comprised of five steps; however, the program is a continuous process designed to incorporate ongoing evidence-based patient safety infrastructure into an existing unit.

The CUSP team consisted of senior hospital executives, surgical nurse manager, project leader (nurse educator), physician champion, patient safety coordinator, surgeons, anesthesiologists, circulator nurses, surgical technicians, surgical case reviewer, nurse educator, and infection prevention staff. The team was formed in response to a higher-than-expected rate of colon surgical site infections (SSIs) and considerable practice variation among physicians and staff. An analysis of SSI data revealed no common causes.

The team met frequently, researched the literature on colon SSI prevention, and developed a list of guidelines for colon surgery representing best practices. The guidelines were incorporated into standardized order sets and operating room processes. This team and its process improvements have reduced colon SSIs and sustained that reduction.

### ▼ OUTCOMES ACHIEVED

- Colon SSIs decreased from 13.5 in 2012, to 8.6 in 2013, to 4.5 in 2014 (the New York State average is 6.3).
- Variation in practice was markedly reduced.
- Process measures (Surgical Care Improvement Process) improved.

# A Multidisciplinary Approach to Reducing Hospital-Acquired *Clostridium difficile* Rates in a Small Community Hospital

St. Joseph Hospital, Bethpage

## ▼ LESSONS LEARNED

- Shadowing of environmental personnel yielded great insight into cleaning deficiencies.
- Initial investments in plant and product modifications, staff education, and increased availability of resources provided a positive return on investment for *C. diff*-associated costs.
- Approaching the problem as a multidisciplinary team allowed for more dynamic solutions, decreased the time it took for action to occur, and strengthened communication lines within the organization.

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## ▼ PROJECT DESCRIPTION

Upon review of data, St. Joseph Hospital recognized that it did not have a firm grasp on its prevention of *Clostridium difficile* (*C. diff*) occurrences. In the third quarter of 2012, a multidisciplinary team assembled to develop a solution for this problem and to bring *C. diff* to the forefront of the hospital's infection control program. A goal was set to reduce the rate of *C. diff* to below the New York State 2012 benchmark of 8.1. This benchmark was subsequently changed to 11.3 in 2013.

Just as the roots of this problem were multi-factorial, so was the proposed solution. Aspects included changes to the cleaning products and protocols, substitution of reusable medical equipment for disposable equivalents, modifications to the boarding of patients, changes to contact isolation criterion for *C. diff*, antibiotic stewardship, modifications of plant engineering, staff shadowing, continuing education, and the utilization of the electronic health record for preventing unnecessary antibiotic usage.

## ▼ OUTCOMES ACHIEVED

- *C. diff* rates significantly dropped from 18.12 in 2012 to 11.01 in 2013, which is a 39% decrease from 2012 and below the New York State 2012 benchmark of 11.3. For 2014, the *C. diff* rate was 11.46, consistent with 2013 results. These are both well below the U.S. Centers for Disease Control and Prevention expectation of a 20% reduction within two years.
- *C. diff* rates from the years 2011 and 2012 combined were 16.8, while from the years 2013 and 2014 combined were 11.2, showing a statistically significant decrease.

# Prolonged Mechanical Ventilation Management Program—A Multidisciplinary Approach

St. Joseph's Hospital Health Center, Syracuse

## ▼ LESSONS LEARNED

- An organized and consistent approach to the care of these complex patients helps to cover all bases without compromising the individual needs of the patients.
- Creating a structured forum (through rounding) of communication allows each discipline to efficiently bring their level of expertise to the care of the patient.
- Open and clear communication between staff, patients, and families helps to improve the quality and efficiency of care of these patients.

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## ▼ PROJECT DESCRIPTION

In 2011, the development of this program was prompted by recognition of the need for improved outcomes and shorter length of stay for the prolonged mechanical ventilation population. Spearheaded by the respiratory care department and its medical director (a board certified pulmonologist), a multidisciplinary team was assembled that included respiratory care, pulmonary medicine, nursing, social work, physical medicine and rehabilitation, case management, pharmacy, and dietary/nutrition.

A formal consult process was developed to transition these patients into the program. Daily rounding with this multidisciplinary team occurs with each patient. Each member of the team is expected to report on his or her individual discipline and is encouraged to give input and feedback. The rounds are headed by the pulmonary medicine team physician, and all of the information is used to form the long- and short-term goals for the patient. Family dynamics play a huge role in the success or failure of these patients. Early family meetings are set up with the team to communicate the overall plan and to anticipate any unforeseen challenges that may occur due to family and social dynamics. The main goal of this project was to reduce ventilator length of stay.

As a secondary observation, this program has given the staff involved an overall sense of pride. By giving each discipline a role and responsibility in the care of these patients and a clear avenue to communicate needs, staff are extremely invested in this program and have sustained the early success recognized by the development of this model of care.

## ▼ OUTCOMES ACHIEVED

- Average Ventilator Length of Stay:
  - Pre-program: more than 70 days
  - 2011: 28.27 days (11 patients)
  - 2012: 15.89 days (35 patients)
  - 2013: 13.59 days (49 patients)
  - 2014: 16.21 days (55 patients)

# Reducing Falls: An Urgent Organizational Safety Priority

St. Luke's Cornwall Hospital, Newburgh

## ▼ LESSONS LEARNED

- Communicate clear goals to all members of the healthcare team.
- Convince staff that patient falls are preventable.
- Risk assessment tools must also have meaningful interventions to impact patient safety, including enhanced understanding of risk for injury.

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In 2013, St. Luke's Cornwall Hospital experienced a fall rate of 2.21 (2013), with a fracture rate of 0.17 (2014). Eight patients sustained severe injury or fracture due to a fall that year. The hospital and nursing leadership committed to high-priority actions to address this urgent patient safety concern. The fall prevention team launched in July 2013, with its immediate focus trained on analysis of current organizational data, determinants of risk factors for fall and injury, understanding the categorization of falls, and exploring best practices for fall prevention.

The hospital's data were compared with National Database of Nursing Quality Indicators (NDNQI) reports of similar hospitals and bed size. In the medical/surgical areas, the hospital's fall and injury rates were above the New York State mean rates.

Individualized screening for fall risk was already initialized for every patient, using the Heinrich Fall Risk Model II (HFRM). An evaluation tool for risk factors, HFRM applies a scoring system to the identified elements (fall history, age, cognitive status, medications), providing guidance for the formulation of a fall prevention care plan. Actions were now geared toward an individual's assessed needs.

The New York State Partnership for Patients (NYSPFP) 2013 Fall Conference provided valuable insight into preventable vs. non-preventable falls. Standardized prevention efforts became focused on interventions that would best effect successes against preventable falls. Evidence-based practices for fall prevention were reviewed/obtained from several sources, including NYSPFP, Agency for Healthcare Research and Quality, and the Institute for Healthcare Improvement. Interventions at the hospital moved from a reactive to proactive overall patient safety focus, not limited to fall prevention.

## ▼ OUTCOMES ACHIEVED

- Decreased fall rate: from 2.21 (2013) to 1.77 (2014).
- Decline in fall with injury rate: from 0.56 (2013) to 0.30 (2014).
- Safety improvements in the areas of: rounding, handoffs, transport practices, alarm validation, and patient/family education.
- Valuable information was gleaned from post-fall debriefing sessions.

## Reduction of CAUTI Incidence in a Critical Care Unit and Non-Critical Care Areas

St. Mary's Hospital/St. Peter's Health Partners, Troy

### ▼ LESSONS LEARNED

- Use of a checklist is beneficial to staff who are inserting fewer catheters since it reminds them of proper technique.
- Having closed system urine meter kits on the unit has reduced the potential for infection.
- It is important to provide staff with additional education on Foley catheter insertion and use of the bladder scanner. This is needed on an ongoing basis.

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### ▼ PROJECT DESCRIPTION

St. Mary's Hospital/St. Peter's Health Partners identified one catheter-associated urinary tract infection (CAUTI) each quarter in the critical care unit in 2013 and during the first two quarters of 2014. In August, the critical care staff and manager met with infection prevention to review each case. No patterns or trends were identified. They researched Foley insertion best practices and reviewed current policies. They identified that the bladder scanners had needed recalibration and contacted the company representative to have this completed. Nursing education reviewed and provided education on bladder scanner technique and Foley catheter insertion practices. Staff also looked at the current Foley kit stocked in critical care and changed to a closed system with a urine meter.

The team was able to decrease utilization of Foley catheters by reviewing necessity at shift huddles, but was not able to eliminate the CAUTIs.

In October 2014, the team developed a checklist for Foley insertion. Additional staff education on best insertion practice technique and checklist use was completed. The checklist was well received and spread house-wide.

The checklist was re-evaluated and revised February 20, 2015 based on feedback from staff. Work on this was done in collaboration with St. Mary's partner hospital with a plan for a common checklist for both hospitals.

### ▼ OUTCOMES ACHIEVED

- The facility had zero infections starting July 2014 through January 2015 in critical care.
- The Foley catheter insertion checklist has been spread house-wide, including the emergency department.
- Staff received additional education in bladder scanning and Foley catheter insertion technique.

## LEAN ON Skin Care and Pressure Ulcer Prevention

St. Peter's Health Partners/Seton Specialty Services, Troy

### ▼ LESSONS LEARNED

- All team members have a role in skin care and pressure ulcer prevention.
- Heightened awareness of subtle change in patient condition ensures early and proactive intervention.
- Key to prevention is ongoing education and communication.

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### ▼ PROJECT DESCRIPTION

Evidence-based guidelines for pressure ulcer prevention are available to long-term care facilities. St. Peter's Health Partners/Seton Specialty Services recognized the need to standardize best practice among its facilities. Through the use of a Lean approach, standardized pressure ulcer risk assessment, prevention techniques, and treatment protocols were developed. Before the initiative, incidence and prevalence data were collected. Qualitative data were collected through voluntary completion of a staff survey. The group identified current processes and barriers at each site and agreed upon an ideal state. After review, several key areas of opportunity were recognized, as were a number of best practices. Improvements included:

- *Use of Braden Risk Assessment Subscales:* to guide individualized care planning.
- *Communication:* wound team contact lists were developed to improve email communication. To ensure focus on the skin condition of new admissions and those experiencing acute illness or decline, morning report discussion triggers were developed.
- *Roles and expectations of team members:* wound, ostomy, and continence nurses (WOCN); registered nurses, licensed practical nurses; certified nurse assistants; therapists, medical staff; dietitian; and administration were defined.
- *Skill set/comfort levels:* Standard work instructions were developed to ensure consistency of care, procedures, processes, and documentation. Educational programs were developed for each staff level. Wound treatment associates were trained for each site.

### ▼ OUTCOMES ACHIEVED

- Wound care products and offloading devices were standardized. Protocols for wound prevention and treatment guidelines for the different stages of pressure ulcers were developed.
- Pressure ulcer incidence decreased 38% from 2013 to 2014.
- Skin and wound care products and documentation were standardized across seven facilities.
- Incidence of incontinence-associated dermatitis decreased to 1.59% from 4.05%.
- Communication is more consistent and overall workflow defined.

## Reducing CAUTI in Acute Care by Hardwiring Prevention Practices

St. Peter's Health Partners/Samaritan Hospital, Troy

### ▼ LESSONS LEARNED

- Leadership support facilitated the speed of hardwiring accurate processes, leading to decreased UC use and CAUTI reduction.
- Daily clinician rounding discussion with family involvement on urinary catheter need was instrumental in preventing UC use and getting the catheter out.
- Clear, objective communication to clinicians with reasons for UC use, insertion technique, and care were needed to hardwire recommended processes to meet the outcome measure goals.

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### ▼ PROJECT DESCRIPTION

At St. Peter's Health Partners/Samaritan Hospital an increasing catheter-associated urinary tract infection (CAUTI) trend was identified in 2014. Leaders formed a CAUTI prevention multidisciplinary team using the Plan-Do-Study-Act (PDSA) method with goals to decrease urinary catheter (UC) use and decrease CAUTI. After data analysis, root cause reviews, and current practices evaluations, the team made an improvement plan framed by Agency for Healthcare Research and Quality (AHRQ), Centers for Disease Control and Prevention (CDC), and Institute for Healthcare Improvement (IHI) CAUTI prevention strategies.

These included the IHI Four Components of Care: avoiding unnecessary catheters, inserting catheters using aseptic technique, maintaining catheters based on recommended guidelines, and reviewing UC necessity daily and removing promptly. In addition, the organization focused on improved hand hygiene compliance (AHRQ). The organization found that it had the process strategies in place but they needed to be implemented and practiced consistently (i.e., hardwired). Using leadership directives, product adjustments, education, and data feedback, St. Peter's Health Partners/Samaritan Hospital improved process consistency.

Clinical and rounding groups including the operating room and surgeons addressed UC necessity with clarified guidelines. They increased use of bladder scanner technology and alternate urinary drainage strategies. Approved necessity of insertion was documented. UC insertion kits adjusted for adequate supplies and uniformity for aseptic technique. All clinical staff were educated on UC insertion with return demonstration. A UC insertion checklist used as process reminder and to monitor for issues. The facility implemented two-person UC insertions for women and the obese based on data risk. The organization also clarified UC maintenance regarding routine hygiene, intact system, bag below level of bladder, and secured collection containers.

### ▼ OUTCOMES ACHIEVED

- The overall CAUTI trend decreased from July 2014 to January 2015.
- The UC utilization trend decreased for three years.
- The CAUTI trend in the intensive care unit decreased.
- Hand hygiene compliance increased.

# Surgical Site Infections Reduction Program

The Brooklyn Hospital Center

## ▼ LESSONS LEARNED

- Leadership focus, sponsorship, and support provides critical momentum to a project.
- A physician champion, engaging physicians, specifically the residents, and getting their buy-in are key to improving clinical performance.
- Decisions supported by data help achieve goals.

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## ▼ PROJECT DESCRIPTION

The Brooklyn Hospital Center routinely reports its colon surgery, hysterectomy, hip, and knee replacement surgery infection rates to the National Health Surveillance Network. On reviewing its surgical site infection (SSI) rates, the facility found that standardized infections ratios (SIR) rates were significantly greater than 1.0 for the latter half of 2010 and in 2011. Infection rates during this time were three to four times the expected rate.

In February 2012, a multidisciplinary team was assembled, including the surgery chair, critical care attending physician, infection preventionist, director of quality, director of engineering, senior nursing director of perioperative services, chief operating officer, chief financial officer, and chief executive officer. The team used the FOCUS-Plan-Do-Check-Act (PDCA) performance improvement methodology, which employs tools such as root cause analysis to identify issues; and process mapping to identify gaps in workflow, resources, knowledge of best practices infection control analyses, etc.

Improvements made included equipment replacement over a two-year period as a capital expense, process changes, education, training of physicians and other staff, and implementation of a concurrent surveillance program.

In May 2012, the facility joined the New York State Partnership for Patients collaborative, participating in several initiatives, including the SSI initiative, whose goal was to reduce SSI by 40%. The Brooklyn Hospital Center implemented the SSI prevention bundle that was an enhancement of the National Quality Forum Surgical Care Infection Prevention Project measures.

## ▼ OUTCOMES ACHIEVED

- Significant declines were noted in SSI rates in 2012. At the close of 2011, SSI SIR rates were 3.5. Rates went down to less than 1.0 in the third quarter of 2012. The decline continued in 2013 and 2014 with annual SIR of 0.818 and 0.764, respectively.
- SCIP Process of Care Measures showed significant improvements as well.

## VTE Prophylaxis Initiative

United Memorial Medical Center, Batavia

### ▼ LESSONS LEARNED

- A collaborative effort between various departments led to better quality of care.

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### ▼ PROJECT DESCRIPTION

Without proper screening for venous thromboembolism (VTE) prophylaxis in a timely manner, patients who are considered high risk may develop asymptomatic deep vein thrombosis and die from pulmonary embolism before diagnosis is suspected. In January 2013, VTE became a global core measure for hospitals to track and report. All inpatients are required to be screened for their VTE risk using their comorbidities and demographics. If patients score a two or higher, they are required to get proper mechanical/pharmacological treatment within two days of admission. It was discovered that not all patients were receiving their treatments within two days of admission. After reviewing regulations, which state that mechanical VTE prophylaxis does not require a physician order, a revised policy for VTE was implemented. The revised policy and standing order allowed nursing to place sequential compression devices without a delay in care.

### ▼ OUTCOMES ACHIEVED

- The revised policy stated that sequential compression devices do not require a physician order.
- Appropriate prophylaxis care increased.

## Community Collaborative for *Clostridium difficile* Infection Prevention

University of Rochester, Center for Community Health, and the Rochester Patient Safety Collaborative (University of Rochester Medical Center, Strong Memorial Hospital, Rochester General Hospital, Highland Hospital, Unity Health System, Excellus BlueCross BlueShield, St. Ann's Community, The Jewish Home of Rochester, Hill Haven Nursing Home, The Highlands at Brighton, Unity Living Center, Park Ridge Nursing Home, Monroe Community Hospital)

### ▼ LESSONS LEARNED

- Interventions must be tailored to an individual facility's culture, timeline, priorities, and needs.
- Data are vital but must be presented in an appropriate manner; quarterly comparative *C. diff* data were used to spur "friendly competition" between facilities; nursing home buy-in was gained by showing them their own *C. diff* and antibiotic use data.
- Accountability, identification of champions, and ensuring information trickle down to front-line staff are vital and require quick adaption to ensure the right "players" are involved.

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In 2011, the Collaborative aimed to reduce by 30% healthcare-associated *Clostridium difficile* (*C. diff*). It focused on prevention of hospital-onset (HO), community-onset healthcare facility-associated (CO-HCFA) (patients readmitted within 30 days of hospital discharge), and nursing home-onset (NHO) infections. Community-wide interventions included:

- *Prevention of C. diff transmission:* After gap analysis of local environmental services and infection prevention policies, best practices were adapted to the local healthcare community and summarized in an evidence-based toolkit.
- *Antimicrobial stewardship in hospitals:* The Collaborative targeted reduction of quinolones for *C. diff* treatment while promoting use of potentially-protective doxycycline. An additional focus was reducing the testing and treatment of asymptomatic bacteriuria, further avoiding the need for quinolones.
- *Antimicrobial stewardship in nursing homes:* Focused on optimizing antimicrobial use and testing practices for urinary tract infection (UTI) by providing acute care tools, guidance, and expertise to the nursing homes.

### ▼ OUTCOMES ACHIEVED

- Statistically significant decreases in *C. diff* rates in 2014 vs. 2011:  
HO CDI rate: 29% decrease; CO-HCFA CDI rate: 30% decrease;  
NHO CDI rate: 47% decrease.
- Cost savings of \$1,224,000 and 423 hospital days avoided.

## Surgical Site Infection Stayfree Initiative

Wyckoff Heights Medical Center, Brooklyn

### ▼ LESSONS LEARNED

- Through revision, correction, and ongoing surveillance, Wyckoff generated noteworthy outcomes with minimal related cost.
- It is important to re-examine existing hardwired processes to ensure best practice and maintenance of standardized care.
- Optimal compliance is achievable through dynamic and live education that keeps staff well prepared and best practice in the forefront.

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### ▼ PROJECT DESCRIPTION

In spite of pre-existing implementation of evidence-based guidelines and use of a surgery safety checklist (SSCL), Wyckoff Heights Medical Center experienced a significant increase in colon surgical site infection (SSI) rate in 2013, compared to the state's average. Through a root cause analysis (RCA), a team was able to derive five areas of suboptimal workflow execution and needed revision of its SSCL, including:

- Skin preparation was implemented before the procedure using Chlorhexidine 4% solution. The pre-operative patient education process was enhanced with bathing/cleansing instructions.
- Clean standardized fascia close was implemented, with change of personal protective equipment and surgical instruments.
- Weight-based dose of antibiotics and glucose control was optimized, including monitoring of HbA1c prior to surgery to evaluate post-operative complications risk and glucose maintenance at < 200mg/dl on the day of surgery and during post-op period.
- Enforcement and monitoring of aseptic, non-touch technique for changing dressings. The facility also educated patients, caregivers, and staff on optimal wound care, identification of failed wound healing, and who to contact if they are concerned about a possible SSI.
- Mandatory in-service was implemented for surgical residents and staff who took care of surgical wounds.
- SSI prevention/operating room safety in-services were conducted for all levels of staff, including surgical residents.

### ▼ OUTCOMES ACHIEVED

- A significant reduction in the rate of colon SSI per 100 colon procedures:
  - 2013: Quarter 1 = 33.3; Quarter 2 = 29.4; Quarter 3 = 40; Quarter 4 = 6.25; Year-end = 25.5
  - 2014: Quarter 1 = 7.7; Quarter 2 = 0; Quarter 3 = 0; Quarter 4 = 13.3; Year-end = 6.5
- The reduction rate of colon SSI was 74.5%.



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