



Excellence in Patient Safety

**Nassau-Suffolk Hospital Council
2010 Award Presentation**

December 6, 2010

Message from the CEO



The Nassau-Suffolk Hospital Council is proud that its member hospitals strive continuously to improve the quality of care provided at their facilities and ensure the safety, well-being, and appropriate treatment of every patient that comes through their doors. To meet these challenges, every one of the Council's member hospitals is engaged in innovative, thoughtful, and well-executed initiatives. The third annual Excellence in Patient Safety Award recognizes the very best of this year's efforts.

**Kevin Dahill
President and Chief Executive Officer**

ABOUT THE AWARD

The Nassau-Suffolk Hospital Council is privileged to present the third annual Excellence in Patient Safety Award to recognize one of its members' distinguished achievements in patient safety and quality improvement.

The nomination process was conducted in tandem with the Healthcare Association of New York State's (HANYS) Pinnacle Award for Quality and Patient Safety. Submissions for the Pinnacle Award were, with the permission of each hospital, also considered for the Excellence in Patient Safety Award. Nominees were required to submit a project summary and narrative that described the nominated quality improvement projects' goals, innovation, methodology, leadership involvement, execution, achievements, and impact on organizational efficiency.

Twenty-one institutions submitted 33 applications to HANYS and the Nassau-Suffolk Hospital Council for consideration. The nominations were initially vetted and scored by the HANYS Pinnacle Award review panel. The top ten applications then were reviewed and scored locally by a three-judge panel. The nominations were scored for their impact on patient care and safety, innovation, adherence to quality improvement principles and methodologies, use of relevant process and outcome measures and systems through the improvement process, sustainability, evidence of cost-consciousness, and demonstration of effective use of human and material resources.

With Appreciation

The Nassau-Suffolk Hospital Council is grateful to its panel of reviewers for the time, dedication, and thoughtfulness with which they approached the task of determining the winner of the 2010 Excellence in Patient Safety Award.

We offer our special thanks to the judging panel:

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President

PULSE of New York

Dianne Gianfelice, RN

Quality Coordinator

Ambulatory Care and Community Medicine

Valerie Terzano, MS, RN, CNA

Vice President for Nursing

Winthrop-University Hospital

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Catholic Health Services of Long Island

Improving Obstetric Patient Safety Outcomes through Crew Resource Methodology

In 2005, the perinatal performance improvement task force was chartered and charged with developing a strategy for system-wide improvement in outcomes. After assessing the various options for systems improvement and team training, the task force selected the Crew Resource Management (CRM) model as the methodology for change. This model, developed by the National Aeronautical and Space Administration in 1979, focuses on improving safety by examining the role of human error in aviation accidents.

Team training was provided to a core group of clinicians who then instructed every nurse, obstetrician, anesthesiologist, and neonatologist on the service at each of the three hospitals. In total, 235 staff members were trained. The staff training at each of the sites focused on enhancing situational awareness and increasing the understanding about how certain stressors (i.e. fatigue and poor communication) can contribute to medical errors. The importance of creating a culture where staff feel empowered to speak up if they believe a situation may jeopardize patient safety was emphasized, along with primary components of effective crew management including safety, efficiency, and teamwork.

Each unit adopted the core principles around communication, team structure, situation monitoring, mutual support and team behavior, including team rounding and huddles on each patient incident, debriefing and emergency drills. Nursing staff was encouraged to invoke the two-challenge rule, where they would be responsible for assertively but respectfully voicing concerns about a patient care situation at least two times to ensure they have been heard. If an issue remains unresolved, the nurse is to contact a supervisor in the chain of command.

In order to evaluate the effectiveness of the program, a series of metrics were developed following a thorough review of the peer literature. After 18 months of implementation, significant improvements in the frequency of adverse events, malpractice claims, and staff perception on safety were achieved. Adverse events were reduced between 26 and 42 percent. Malpractice claims were reduced 66 percent. The severity index of events dropped between nine and 17 percent. Unexpected admission to the Neonatal Intensive Care Unit dropped by over 60 percent.



Brookhaven Memorial Hospital Medical Center Home Health Agency

Home Care Demonstration Project: Telehealth and Chronic Obstructive Pulmonary Disease (COPD) Patients

Brookhaven Memorial has a persistent variance in re-admission rates under 30 days after hospital discharge of patients with pulmonary diseases. The project was to increase the number of patients discharged to home care with these diagnoses and place them on telehealth in order to reduce the 30-day re-admission rate to the hospital with exacerbation of pulmonary disease.

In conjunction with the hospital case management department, registration department, and on-site coordinators for home care, the pulmonary patients were targeted for discharge to home care whenever possible. The hospital's certified home health agency accepted the majority of these discharges with the goal of improving the re-admission rate and patient outcomes. In addition to placing these patients on home care with the provision of skilled nursing, physical and/or occupational therapies, nutritional therapy, and/or home health aide services, telehealth monitoring was also added to the armamentarium to proactively manage symptoms prior to emergent need.

Patients were placed on home care, and those that did not accept telehealth were still seen in the standard manner with intermittent in-home visits. Those that did accept telehealth were seen for fewer in-home

visits and frequent (3-7/week) telehealth nurse/patient interactions. Telehealth patients had scales, blood pressure cuffs, pulse oximeters, and stethoscopes in their homes, as well as interactive visual computers. Patients took their vital signs and sent them to the nurse daily via computer/phone connection. Patients whose vital signs varied out of prescribed range were contacted by the nurse more frequently than those whose vital signs were stable. The base period was prior to the initiative (July-December, 2007) and the improvement period followed (July-December, 2008). The sustaining period was measured (July-December, 2009). The follow up period was the entire year of 2009.

For patients on home care without telehealth, the risk of re-hospitalization within 30 days of hospital discharge is 17-20 percent and for those with telehealth it reduces to 4-4.5 percent. Patient satisfaction was higher in the telehealth patients versus the non-telehealth patients. The non-telehealth patient satisfaction rate was 88.8 percent and the telehealth patient satisfaction rate was 95.6 percent.

Eastern Long Island Hospital

Criminal Justice Treatment Program Addresses Treatment within Correctional Facilities and Courts

Eastern Long Island Hospital embarked on an innovative collaborative between criminal justice agencies and a hospital-based behavioral health treatment continuum.

The program focused on treatment groups within county correctional facilities, providing a clinical advisor to the local drug courts, and hospital services providing primary treatment and assessment for the county's re-entry program.

Treatment within the county correctional facilities consisted of weekly groups for both men and women—on-going drop in groups that challenge criminal thinking and stress cognitive behavioral changes. The drug court clinical advisor, also a member of the treatment team for the Regional Intervention Court, sat twice weekly with the judge, coordinator, and probation officers to review and design the court's treatment assessment and plan. The Re-entry Task Force and hospital collaboration facilitates appropriate behavioral health treatment and case management for individuals being released from incarceration and those who are at risk of parole violation due to substance abuse.

Successful treatment of the criminal justice offender/patient is dependent upon understanding that both criminality and substance abuse must be addressed in order to

increase recovery for the offender. Education for behavioral health staff regarding criminality and criminal thinking is imperative for the successful treatment of offenders.

Outcomes achieved included three years of treatment groups provided within two correctional facilities. Approximately 884 inmates per year served in both correctional facilities. One hundred fifty six parolees have been treated within the hospital-based behavioral health continuum.

Franklin Hospital

Restraint Reduction Strategies Improve Patient Safety

The implementation of a multidisciplinary Fall/Restraint Committee, along with ongoing staff education, documentation monitoring and review resulted in a decrease by 22 percent in restraint use and greater use of alternatives. In addition, the program actively engaged the patient in safe care by providing them with a Fall Contract.

The committee set out to reduce the restraint index by 10 percent by the end of 2009. Entering the program, the committee understood that staff were unaware of alternatives that were as effective but more respectful and that restraint use was higher on evening/night shifts. Ongoing staff information and education was key to the success of this initiative. That education included review of documentation to ensure appropriateness of restraint use. The committee looked at the name of restraint used, reason for the restraint, number of episodes, reviewed the MD order and documentation, what alternative restraints were attempted, the time limit involved, and the face-to-face evaluation by a Licensed Independent Practitioner.

The Restraint/Fall Committee conducted random chart review of patients in restraints. As staff members were actively involved in this process, this enlightened

them about the lack of documentation. One of the main goals of the initiative was to improve overall documentation on alternatives used and attempts to release restraints. Restraint use can increase hospital length of stay for those patients awaiting skilled nursing facility or rehab placement, as these facilities require patients to be off restraints for at least 24 hours before admission. To ensure the continued effectiveness of the program, the Fall/Restraint Committee has champions who are charged with promoting alternatives to restraint use on units.



Glen Cove Hospital

The Journey to Zero Nosocomial Infections

As part of the patient safety and quality improvement program, Glen Cove Hospital focused on the reduction of central line-associated blood stream infections (CLABS) in the critical care unit (CCU). The hospital's CCU is comprised of cardiac care, medical and surgical patients. Focus was placed on central lines as they are high risk and high volume.

An opportunity for improvement was identified in 2005, as the CLAB rate in critical care was 6.5/per 1,000 line days. Root Cause Analysis and Failure Mode Analysis were the methodologies used to identify issues, as well as prioritize and modify practices. Changes in culture and practice have led to excellent outcomes, improved patient safety, decreased length of stay and cost avoidance.

Lewin's change principle was also applied to change culture in the following areas: adherence to standards for line insertion, maintenance, and compliance of best practice and empowerment of nursing staff. This encouraged leading from the bottom up rather than the top down, utilizing the collaborative model.

Maintaining compliance with best practices, empowering staff, and continuously evaluating practices has resulted in significant improvement in preventing adverse outcomes for patients. As of March 15, 2010, the facility achieved 812 CLAB-free days and 375 ventilator-associated pneumonia-free days. Additionally, Glen Cove saw a 52 percent reduction in nosocomial Methicillin-resistant *Staphylococcus Aureus* from 2008–2009.

Good Samaritan Hospital Medical Center

Mid-Track: The Solution to the Emergency Severity Index (ESI) 3 Patient Timely Treatment Conundrum

Good Samaritan Hospital participated in a national collaborative dedicated to find, develop, and deliver strategies to improve patient flow and reduce Emergency Department (ED) crowding. Patients entering an overcrowded ED face longer wait times for care, which often results in people leaving without being seen (LWBS). Patients seen in mid-track were those non-emergent cases (ESI 3 patients) who arrived with one of six chief complaints: vaginal bleeding, pregnancy complication, vomiting, abdominal pain, headache, or flank pain (this made up the study population)

It was determined that the ESI 3 (mid severity) patients had the longest wait times and had a high 'left without being seen (LWBS) rate.' From these data the team developed the mid-track initiative to find a solution to address the needs of the ESI 3 patients in a more timely and efficient manner.

The mid-track initiative dedicated a physician to manage the diagnostic phase for these patients directly after their triage. The patients were treated utilizing the Ambulatory Surgery Unit (ASU) space located directly over the ED and their care was directed by that same physician and coordinated by nurse practitioners (NPs). The NP was supported by a nurse and an emer-

gency technician. In addition to the physicians and nursing, a phlebotomy tech role was deemed to be mission critical.

The mid-track operated Monday-Friday, 4 p.m.-midnight, utilizing the proximate ASU space during its off hours to provide a no-cost solution for additional flex-space.

This innovative and effective care delivery system will be permanently incorporated into the operating procedures for patients presenting at our ED.

Documented improvements included a reduction for the LWBS rate for all ESI 3 patients of 36 percent and 42 percent for the study group. Overall LWBS rate was reduced by nearly 24 percent. There has also been an upward trend in ED patient satisfaction.

Huntington Hospital

Electronic, Evidence-based Clinical Decision Rule Linked to Computerized Order Sets Proves Effective and Safe

Immune-mediated heparin-induced thrombocytopenia (HIT) is associated with limb-threatening arterial thromboses and venous thromboembolism with the risk of fatal pulmonary embolism. Accurately identifying patients in need of high-cost testing and treatment is complicated by the fact that this condition must be distinguished from more common, non-immune thrombocytopenia in patients receiving heparinoids. An evidence-based clinical decision rule exists that can improve diagnostic accuracy, but is not widely utilized. This is a high-volume, high-risk clinical problem because a large fraction of all inpatients receive heparinoids for thromboprophylaxis, and HIT is known to occur in 0.8 percent and 2 percent to 3 percent of patients receiving low-molecular weight and unfractionated heparin, respectively.

A multidisciplinary working group adapted a published, evidence-based clinical decision rule for use in an electronic decision-support module accessible through our hospital's intranet. Plan-Do-Study-Act and Rapid Cycle Change methodologies were utilized. Champions and project leaders included one hospitalist in collaboration with a full-time Pharm.D., and a full-time clinical pharmacist. There was consultative support from our nurse practitioner-lead

anticoagulation service and leadership support from the chief medical officer. Initial testing was by a small number of participating hospitalists who served as our early adopters. Spread of this practice was then achieved across our Internal Medicine Hospitalist program, which manages more than 80 percent of all admissions to the department of medicine. Feedback was provided at twice monthly meetings of the hospitalist group and electronically.

The initiative resulted in a total heparin-induced platelet antibody (HIPA) test decrease of 55.6 percent. Negative HIPA assays decreased 84 percent. Serotonin release assay testing decreased 25 percent. Unnecessary argatroban courses decreased from six (2008 baseline) to zero. Total argatroban use increased by 41 percent during the post-implementation period, reflecting avoidance of "under-use" errors detected during the baseline phase. Under-use outliers decreased seven patients to zero.

John T. Mather Memorial Hospital

Save That Vein

Recognizing the risks for patients receiving various intravenous medications and infusions, the Nursing Executive Committee dedicated a full-time position for an Infusion Therapy Coordinator. The core of this position is the National Patient Safety Goal (NPSG 07.04.01): Implement Best Practice or Evidence Based Guidelines to prevent Central Line Associated Blood Stream Infections (CLABSI). The Infusion Therapy Coordinator developed a program to incorporate the 17 elements of performance listed in the safety goal including short-term peripheral intravenous access.

An action plan was developed in conjunction with, but not limited to, the following: Informational Services; Registered Nurses; Nursing Information Service; Infection Prevention Department; Medical Staff; Materials Management; Nursing Education; Nursing Quality Management and Sterile Processing. The Patient/Caregiver remained the focus in every component of the action plan. The plan also included daily vascular access rounds with attention to the various performance indicators. When the standard was not met, a patient/situation-specific nursing education in-service is conducted with the nurse responsible for the patient. At the time of rounds, the patient's infusion needs are discussed to either

maintain or remove the access, or consider an alternate vascular access device (VAD).

One of the most exciting outcomes reported by the project leaders is when a nurse recognizes a standard has not been met and consults with the Infusion Therapy Coordinator (ITC). The ITC assesses the situation and provides appropriate education. In addition, the ITC sends a letter of recognition to the nurse who identified a standard was not met. The letter includes the follow-up action with the number of nurses that were re-educated/in-serviced.

In addition to improved clinical outcomes and enhanced patient safety, the initiative has found cost-savings for the facility through a decrease in length of stay for ICU/CCU patients. Central line-associated blood stream infection rate was also substantially reduced.



Mercy Medical Center

Improving Patient Flow at a Non-academic Hospital

Crowding and prolonged boarding in Mercy Medical Center's relatively small emergency department was leading to poor outcomes and even sentinel events. Morale throughout the hospital was challenged, which was reflected by significant customer frustration and poor financial performance. The prolonged boarding was attributable, in part, to noncompetitive patient lengths of stay (LOS), especially for skilled nursing facility (SNF) patients. The admission process and plan-of-care of SNF and unassigned patients were inefficient compared to non-SNF patients. It was clear that the incentives for the voluntary physicians who cared for SNF patients and the hospital were not aligned.

Analysis revealed physician practice patterns with complex geriatric patients were associated with mean lengths of stay (LOS) in excess of 10 days, lifting the hospital's overall LOS to 7.6 days. These practice patterns resulted in excessive use of scarce critical care and telemetry resources, all leading to delays in discharge and ultimately in patient flow directly impacting emergency room processes of care. Metrics were far in excess of national norms.

The solution was the development of a Geriatric Care Best Practice Program and a unique "contractual arrangement" with

physicians. The contract required that physicians who desired to treat skilled nursing facility patients agree to implement best practices, including use of standard order sets, systematic monitoring and feedback on care outcomes. Patients experienced dramatic improvements in lengths of stay, emergency department waiting time, and nursing sensitive indicators like pressure ulcers. Emergency department and inpatient satisfaction scores skyrocketed, with improvement up by 10 to 20 percent in every category. An improvement of 20 percent in lengths of stay and nearly 15 percent improvement in overall hospital lengths of stay were accomplished. These achievements are sustained to this day.

Mercy Medical Center

Acute Inpatient Rehabilitation Unit Fall Prevention Pprogram

Keeping with the hospital's culture of safety, fall prevention monitoring lead to a closer look at Mercy's Acute Inpatient Rehabilitation population. It was noted that 90 percent of patients that fell in December 2009 were cerebral vascular accident patients. Twenty-two percent of the patients that fell had left-sided CVA's, 67 percent had right-sided CVA's and 11 percent had bilateral CVA's. This data lead the hospital to a further study of right-sided brain injury and an educational opportunity for the staff. As a result, changes have been initiated to the existing Fall Prevention Program that has a focus for right-sided brain injury patients.

In anticipation of the right-sided brain injury patients' impulsivity and spatial/perceptual issues, the following was implemented: locate patients in rooms closest to the nursing station; have bed exit alarms engaged at all times; apply chair alarms when the patient was out of bed; add a smile face symbol to the Fall Potential Alert found on the patient's room door to further identify the right-sided brain injury. In addition, different color non-skid slipper socks used by the right-sided brain injury patient led to easier differentiation of these patients at a quick glance.

The cost of the improvement effort was minimal—the purchase of chair alarms and the color-coded non-skid socks—and the results and benefit to patients were notable. There were no other associated costs to this improvement initiative. In one month's time after initiating the revised Fall Prevention Program with a focus on right-sided brain injury, the hospital's fall rate decreased 27 percent for this population.

Nassau University Medical Center

Information Technology and Stroke Task Force Partnership

As a New York State-designated stroke center, Nassau University Medical Center follows best practice standards and discharge guidelines developed by the American Heart Association. Through retrospective chart review, quality management had identified gaps in data retrieval and areas for improvement. Recognizing that stroke management is very time sensitive and that ED doctors need to make critical decisions regarding treatments, the Plan-Do-Check-Act model was applied to the patient-entry component of their stay. Identified were issues with inconsistent stroke code initiation, problems with validation due to inconsistent data sources or missing data and time lag in practitioner feedback. The goal: to facilitate the ease and ensure the validity of documentation and provide real-time drill downs with immediate plans of correction. To accomplish this, an information technology solution was developed and initiated in April 2008. Triggered by presumptive stroke ICD-9 codes, stroke team activation is automatic, a stroke order set populates the field, date and time fields are auto-populated and an e-mail is generated and sent to all disciplines capturing key quality indicators.

The program's wide-reaching goals were to support delivery of evidence-based quality care that meets or exceeds the facility's

mission statement to provide high-quality care to all; to develop strategies to enhance communication between all levels of patient care; to provide tools for leadership to perform practitioner-specific real-time drill downs enabling immediate plans of correction; to facilitate the ease and accuracy of required documentation; and to initiate an automated system to capture data.

Outcomes achieved included: 228 percent increase in stroke patients that had a recorded NIH Stroke Scale score; 36 percent increase for stroke patients who had a CT scan less than 25 minutes from arrival; 158 percent increase for stroke patients who had a recorded last well known arrival time to identify the earliest possible time that stroke symptoms began; and 126 percent increase in validation of acute ischemic stroke patients not being treated with IV t-PA due to exclusion criteria.

Nassau University Medical Center

Leadership Initiative and Behavior Modification Transforms Platelet Utilization

The issue of unused expired platelet units was raised by front-line staff in a leadership-driven “town hall meeting.” Utilizing FOCUS/PDCA methodology, the blood bank department identified an opportunity for improvement in the area of health care professionals’ knowledge regarding platelet utilization. Prior to implementing change, the rate of platelet units becoming outdated was 28.4 percent. Management initiated close observation and expert consultation by blood bank staff during requests for platelets. The intention was to identify if modification of health care professionals’ behavior and culture would result in improvement in platelet utilization. Monitoring for the ensuing 332 days revealed a decrease in the rate of outdated platelet units to 6.3 percent. This decrease translates into an annual savings of 70.9 platelet units, representing a \$50,631 cost savings.

Health care professionals became more focused and sensitive to the precious resource and utilization of platelets following consultation with blood bank staff. This allowed for a sharp decline in outdated platelet units.

More importantly, quality and safety of patient care improved by efficient use of this product, and exposure to the hazard of

blood product transfusion was reduced without compromising patient care. Enhancement and satisfaction of management due to more efficient patient care, increased savings, and making progress in budgetary and labor allocation with resource adjustment were outcomes of this initiative. In addition, the program engendered the bolstering of blood bank staff’s morale, sense of belonging, and job satisfaction.



North Shore-Long Island Jewish Health System

Enhancing Performance, Changing Culture, Improving Communication, and Supporting Rapid Cycle Change across a Multi-Hospital Healthcare System: The Collaborative Care Model®

As a multi-hospital healthcare system, North Shore engages in continuous quality and safety initiatives. The staff, faced with competing priorities and incessant innovations, often regard new strategies as another flavor of the month. Many changes have not been sustainable. Analyzing the outcomes and impact of numerous strategies for practice improvement and advancement, it was evident that the staff needed to transform its culture to orchestrate a different approach.

The approach entailed development and implementation of a values-based, patient-centered model intended to translate the system's mission, vision and values into the daily practice of patient care. The Collaborative Care Model® provides the infrastructure for implementation of rapid cycle changes and supports the widespread communication necessary for sustainment.

A pilot site in a community hospital was established in 2007. Training was provided to every staff person regardless of role or position. Training included development of unit- and department-based Collaborative Care Councils, tools to support rapid cycle change and Team Strategies and Tools to Enhance Performance and Patient Safety, or TeamSTEPPS, for communication. Selected quality, cultural and safety metrics were

monitored. Significant improvements were identified and have been extended and sustained. The model and training are now being expanded to the entire organization.

In one year, education about the model and tools to facilitate effective communication was delivered to over 19,000 employees across 14 hospitals. Over 75 percent of patient care areas have interdisciplinary Collaborative Care Councils, the cornerstone structure to support realization of the model. These councils have spread to support, ancillary, and allied health services.



North Shore-Long Island Jewish Health System

Responding to an Epidemic: Novel H1N1 Influenza, Key Principles of Health System Preparedness and Response

Effectively responding to large scale (mass) public health crises is a demanding challenge. Establishing an initial urgent response to the 2009 H1N1 outbreak in order to meet the needs of patients, the community and healthcare workers, as well as a strategic plan for managing the H1N1 epidemic and potential resurgence in the community presented unique challenges to the system.

The system's Emergency Operations Plan (EOP) is a defined leadership priority that was set into motion in the spring of 2009 when the system became the epicenter of the H1N1 epidemic. Critical internal resources were mobilized to meet the urgent demands placed on system hospitals, as well as the health care needs of the local communities. The laboratory rapidly processed thousands of viral specimens which helped define the scope of the problem and support public policy on testing for H1N1. Anticipating a potential resurgence in H1N1 during the 2009-2010 flu season, the system partnered with the local Commissioner of Health to establish community outreach and a strategic vaccination program. The success of the EOP and response to public health needs was achieved through effective surge plans; targeted clinical decision making and protocol design,

development, and deployment; expansion of laboratory capabilities; use of real-time data for administrative and clinical decision making; powerful social media campaigns; novel community education through a flu microsite; community outreach and mass immunization efforts; mapping based on census population to determine Points of Distribution (PODs) for high-risk, high-need populations; and strategic partnerships with local, state and federal agencies.

The program adheres to quality improvement principles using the Plan-Do-Check-Act (PDCA) methodology. The effectiveness of the system's response to the H1N1 epidemic and potential resurgence was evaluated based upon these principles and techniques. During the initial surge of the outbreak, more than 12,000 patients were evaluated, 36,000 lab tests were performed, 485 patients were admitted, and, during the post-surge, approximately 17,000 individuals were vaccinated, with 56.2 percent from high-priority groups.

North Shore University Hospital

Remote Video Auditing with Feedback and Hand Hygiene Compliance

In March 2008, video cameras were placed with views of every sink and hand sanitizer dispenser in the hallways and patient rooms to record hand hygiene compliance. Sensors mounted in the doorways identified when health care workers entered or exited, indicating a hand hygiene event. When video auditors observed health care workers using the hand sanitizer dispenser or washing hands with soap and water, they assigned a “pass” to the event. Auditors indicated a “fail” when they observed the practice not being performed.

Baseline rates for hand hygiene compliance were recorded from June through the first week of October 2008. On October 6, 2008 the results of the audits were displayed on two electronic boards visible to all staff in the unit. The results were updated every 10 minutes with current shift, weekly, and monthly rates. Unit managers also received e-mailed summaries delineating shift, weekly, and monthly rates. Leadership responded to low rates of hand hygiene compliance largely on an aggregate basis, but coached individuals as needed. Hand hygiene increased and has been sustained.

Before the feedback period, hand hygiene rates were less than 10 percent. With continuous real-time feedback, hand hygiene

exceeded 85 percent for the 14-month review period. Further, weekly compliance rates for physicians were lower than that of other health care providers and results during the day shift were lower than during the night shift.

By using remote video auditing with feedback in the intensive care unit, the facility was able to improve and sustain high rates of hand hygiene compliance for fourteen months, as well as to reduce healthcare-acquired infections. North Shore University Hospital now aims to expand this approach to additional critical care units across other hospitals in the health system.



Plainview Hospital

Decreasing the Incidence of Upper Extremity Deep Venous Thrombus (UEDVT) in Patients with Peripherally Inserted Central Catheters (PICC)

This institution's quality management department, through the efforts of its utilization managers, identified in 2008 an increased incidence of UEDVTs occurring in those patients who had PICC lines inserted. Also noted was a significant increase in the number of PICCs inserted—537 in 2007 and 902 in 2008.

PICCs are convenient, safe and cost-effective in both the in-patient and out-patient settings. Plainview Hospital focused its efforts and strategies on preventing UEDVT in those patients who have indwelling PICC lines. A proactive risk assessment was utilized in order to determine if the current PICC process was in need of improvement. A multidisciplinary team was established and included representation from physicians, nursing, and the departments of radiology and quality management. The facility's in-depth analysis into the PICC process included the inception of the Joint Commission's 2010 Patient Safety Goal requirements for Central Venous Catheters (prior to the mandated target date); a redesign to the hospital's current PICC process; reinforcement of proper PICC care; recommendations for PICC insertions; and several other process improvements. The results from the analysis along with the committee's recommendations were

disseminated to the staff through the efforts of the hospital's educational department. The improvement strategies that were designed and implemented led to a major reduction in the development of UEDVTs, as well as a decrease in the number of central-line bloodstream infections.

Some specific improvements include a decrease in the number of PICCs inserted from 902 in 2008 to 677 in 2009, as well as improved compliance with completion of PICC consents and the catheter insertion note. The hospital's progress continues today.

Plainview Hospital

Pressure Ulcer Initiative

In 2009, the hospital created a Pressure Ulcer Initiative with the intent of accurate identification of pressure ulcers, both community-acquired and nosocomial. In addition, the initiative sought to provide appropriate, cost-effective treatment and the collection of data that can be compared to other validated data bases. The hospital's goal was to improve outcomes by reducing the incidence of facility-acquired pressure ulcers from two percent to one and a half percent.

The hospital recognized its high risk and high volume population. Patients from the community include those that reside in nursing homes, rehabilitation facilities and group homes. Approximately 65 percent of the hospital's population is older than 70. In order to succeed, the nursing process was restructured. After a review of current literature and utilizing the National Pressure Ulcer Advisory Panel (NPUAP) and Wound Ostomy Continence Nurse (WOCN) clinical practice guidelines, a multidimensional initiative that included nursing education, team building and standardization was introduced.

The initiative was rooted in education and training. The methods used included the administration of a nationally-recognized pressure ulcer training tool to all registered

nurses to ensure competency, formation of a registered nurse Skin Resource Team, with representation from all med-surg and intensive care units, and the establishment of "Wound Care Wednesday" to promote consistency in documentation. In addition, a wound care algorithm was designed to promote evidence-based treatment guidelines established for pressure ulcer stage and presentation.

The program reduced the incidence of nosocomial pressure ulcers to one percent, well below the national average of 5.3 percent. The Wound Care Algorithm promotes 100 percent compliance with product selection and the standardized formula allows the hospital to compare its results with nationally recognized data bases.

St. Catherine of Siena Medical Center

When Seconds Count: Employing Six Sigma Strategies to Transient Ischemic Attack and Stroke Management

St. Catherine's sought to achieve significant, robust and reliable improvements in Transient Ischemic Attack (TIA) and stroke patient management through utilization of Six Sigma process improvement strategies. Senior leadership's vision in 2006 yielded a commitment to improving the hospital's compliance with published "best practices" to minimize the devastating functional, emotional and financial impact of these two emergency events.

Stroke is the leading cause of serious long-term disability, and is the second leading cause of death in industrialized nations. Every second in delay in treatment may reduce the likelihood of a favorable patient outcome. Partnering with the American Stroke and Heart Association (ASA/AHA) to implement best practices as evidenced by implementation of the "Get with the Guidelines" (GWTG) performance measures for Stroke Patient Management since 2006 has yielded sustained enhanced quality of care. The hospital's team and collaborative efforts have achieved persistent improvements in the provision of defect-free care. In addition to providing consistent, reliable care harmonized with evidence-based best practices, St. Catherine's is poised to compete in the market place to draw patients to the facility and assume a strategic position

to ensure appropriate reimbursement with the future addition of Stroke/TIA as a core measure.

The goal of this non-academic community hospital was to improve the efficiency of its staff in recognizing ischemic stroke patients who were potential thrombolytic candidates, as well to improve overall compliance for each of 10 performance measures identified by the AHA/ASA as indicators of excellence in Stroke/TIA patient management.

When compared with the baseline period, the improvement period saw a 33 percent increased rate of rt-PA utilization; 34 percent improvement DVT prophylaxis compliance; 67 percent increase in anticoagulation therapy at discharge; 65 percent increase in patients discharged on cholesterol reducing agents; 26 percent increase in documentation of dysphagia screen; and an 83 percent increase in documentation of stroke education.

St. Catherine of Siena Medical Center

Ventilator-associated Pneumonia Prevention: “Automatic and Painless”

Ventilator-associated Pneumonia (VAP) is a problem that not only prolongs hospitalization time with negative outcomes and sometimes even death for those it inflicts, but burdens staff with complex issues and the healthcare industry with increased costs and services. Although exogenous sources of infectious microorganisms exist, it is typically the patient’s own colonizing flora that is implicated in infection. The primary risk factor for the development of hospital-associated bacterial pneumonia is mechanical ventilation.

St. Catherine’s recognized the need to address its rate of VAP in the critical care and step down units. However, the facility lacked a coordination of services. Each service was initiating its own treatment protocols and in some instances either overlapping services or not addressing issues at all. The hospital recognized the need to form a highly-motivated team to tackle this problem and acknowledged the need to address current practice and improve patient safety. An extensive literature search led the hospital to look at its basic practices for infection prevention. A risk assessment was performed evaluating hand hygiene compliance, sedation interruption, assessment of readiness to wean, maintenance of a semi-recumbent positioning, and oral care. This gave St. Catherine’s a baseline to determine where deficiencies existed. Education was performed which included physicians,

nursing, respiratory therapy, radiology and transporters.

Everyone was educated on all aspects of the ventilated patient—especially the use of the bundle and its role of “all or nothing” in the prevention of VAP. On the Step Down Unit, the hospital had chronic patients who were non-weanable and usually not sedated, but all other items in the bundle were carried out on that unit.

Daily interdisciplinary rounds that discussed aspects of best care such as head-of-bed elevation, sedation vacation and oral hygiene were performed. The hospital staff embraced all best practices and made a determination that oral hygiene was the most important aspect. Data on compliance to the process and outcomes were presented to each department via the Special Care and Infection Prevention Committees. These data were also presented to the Hospital Performance Improvement Committee. Data were also shared with a collaborative. St. Catherine’s showed a marked decrease in VAP with the use of oral hygiene kits compared to other like facilities.

Since January 2008, VAP has been eliminated on the Respiratory Step Down Unit and there has been a sustained decrease in the incidence of VAP in critical care in 2008 and 2009.

St. Charles Hospital

Improving Interdisciplinary Reporting of Pre-empted Medication Errors

Medication error reporting at St. Charles Hospital is an interdisciplinary process. Beginning in 2004-2005, team members began to explore ways to recognize and improve the reporting of pre-empted errors.

While traditional reporting via the formal occurrence reporting system was encouraged, other venues for the recognition and reporting of medication errors were considered. The team determined that certain categories in the clinical interventions performed by pharmacy and the Medication Administration Record (MAR) communications generated by nursing could appropriately be recognized as pre-empted medication errors.

Beginning in 2004, St. Charles Hospital implemented the facility-wide utilization of an electronic MAR. This changed the way medications were transcribed to the medication record. When utilizing a traditional paper based-medication record, the nurse had the primary responsibility to transcribe the patient's medication orders to the record. The conversion to an electronic record generated daily, in conjunction with the utilization of the hard stop, placed the emphasis for transcription on the pharmacist. The nurse was now required to review the printed MAR for transcription omissions or discrepancies.

Additionally, the department of pharmacy began to develop and improve the tracking of completed clinical interventions. Clinical interventions may be defined as actions/interventions between the pharmacist and the ordering clinician to either clarify, correct or discontinue a current order to the medication profile. Intervention occurs prior to dispensing and administration of medications/treatments ordered.

The workflow processes for both nursing and pharmacy were simplified. The MAR Communication changes included adding categories for incorrect or missing allergy information and having the order number attributed to the profile entry printed on the MAR. This allowed the pharmacy to access the specific order in question immediately. Finally, clinical Intervention data capture was improved by refining the intervention categories and the development of an electronic data base.

St. Charles Hospital

PUPs (Pressure Ulcer Prevention) Program

St. Charles Hospital has participated in yearly point prevalence surveys regarding pressure ulcers, and the results have been used as benchmarks for improvement. The point prevalence incidence rate for 2005 was 15 percent. Through the PUPs program, the point prevalence incidence rate was reduced to 3.3 percent in 2009.

The objectives of the PUPs program include improved identification of patients at risk for skin breakdown on admission; implementation of interventions for prevention of pressure ulcers; and reduction in the rate of facility-acquired pressure ulcers.

Commonly, pressure ulcers are associated with individuals experiencing decreased activity/mobility, incontinence, poor nutrition, and advanced age. However, pressure ulcers can also occur because of devices such as oxygen tubing, braces, splints, and in individuals where the burden of disease overwhelms the skin resulting in skin (organ) failure. Challenges at St. Charles included changing the survey process from a chart-based process to one of engaging staff in physical assessment and chart review, standardizing and disseminating staff (nursing and physician) education, forming revisions, implementing a process for risk assessments, enhancing communication

across disciplines and services, and facilitating access to resources.

In addition to reducing the incidence of pressure ulcers by more than 10 percent, the PUPs program achieved other measurable results. These include increased availability and accessibility to resources for prevention; increased frequency of risk assessments and implementation of interventions; standardized education and incorporation of pressure ulcer prevention topics to annual nursing skills fair; and development and revision of forms to facilitate implementation and documentation of prevention measures and treatment, including pre-printed physician orders.

St. Francis Hospital

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

Although St. Francis Hospital's patient care division's fall rate is consistently below the national benchmark of 3.5 per 1000 patient days, the hospital constantly strives to improve. The population the hospital serves consists of many elderly patients who often exhibit polypharmacy, including the use of anticoagulants, which could potentiate any injury sustained during a fall. The innovative process developed to further enhance the falls reduction program incorporated a multi-faceted approach.

The program includes the use of a new falls risk assessment tool, which is completed every 12 hrs. This tool enables the clinical nurse to score patients on their gait, mental status, falls history, use of narcotics/sedatives, hemodynamic status and other factors. A score of less than 18 indicates the patient is at high risk for a fall. The emphasis of the fall prevention program is implementing the appropriate intervention. FEET is the acronym used for the plan of care. The fall prevention plan of care lists nursing interventions categorized as Functional, Equipment, Education, and Toileting.

Upon admission, all patients and families partner with the staff and receive a falls contract. The contract remains posted on the patient's bulletin board for the duration

of hospitalization. In the event of a patient fall, an interdisciplinary team meeting occurs to analyze contributing factors and to develop an action plan to prevent further occurrences. Lessons learned from this meeting are shared with all at the unit and departmental level.

The program achieved these outcomes. In 2008 rate of falls was 1.2 per 1000 patient days. In 2009, the rate of falls was 1.0 per 1000 patient days.

St. Francis Hospital

Optimizing a Culture of Interdisciplinary Collaboration to Prevent Central Line-associated Blood Stream Infections (CLABs) in Critical Care

The Institute for Health Improvement's (IHI) Five Million Lives Campaign, along with the National Health Care Safety Network, provided the stimulus for a program needs assessment on the prevention of Central Line-Associated Blood Stream Infections (CLABs) in the critical care units at St. Francis Hospital. A review of the literature, data, advisory groups and existing expertise provided the foundational grounding to all stakeholders. Increased scientific knowledge and understanding of these underpinnings, allowed the hospital to develop a conceptual framework. Barriers were identified and effective interventions were applied to improve patient-specific, provider-specific, and payer-specific outcomes. Monthly performance improvement team meetings, mini-root cause analyses and implementation of interdisciplinary daily line stickers resulted in a 67 percent decrease in CLABs rates.

The program incorporated the following change principles: purchasing, stocking and replacement patterns for unit line carts; monitoring of barrier precautions and sterile techniques at times of line insertion with the nurse empowered to stop a procedure due to lack of adherence; credentialing of mid-level practitioners to insert peripherally-inserted central catheter lines; the utilization

of IHI CLABs bundle and interdisciplinary red sticker for the necessity of lines and maintenance documented daily; the utilization of chlorhexidine and alcohol swabs with 10 twists prior to accessing each port; the implementation of daily chlorhexidine baths for all patients with central lines for more than five days; utilization of monofilament sutures, rather than braided silk, when indicated; appropriate placement of monitor lead; and the creation of a positive environment with signage for public and staff demonstrating the number of days without CLABs.

Results were remarkable. Quarterly rates in 2009 demonstrated a positive trend from 1.4 to 0.6 CLABs in ICU patients per 1,000 line days; the baseline of 2008 was 3/1000 line days and the target was 1.8/1000 line days. The hospital was able to achieve results below the baseline and the target for a rate of 1/1000 line days. Beginning in June of 2009, one of the ICUs achieved zero CLABs for seven consecutive months and zero CLABs were obtained in all critical care units for four months in 2009.

St. Francis Hospital

Skin Integrity: Nursing Interventions and Clinical Nurse SKIN Champions

The prevalence of hospital-acquired pressure ulcers is a national issue. There are proven interventions that are beneficial to the maintenance of skin integrity.

The premise of the Skin Care Bundle (SCB) is to incorporate the necessary steps in nursing practice and to prioritize these steps utilizing the power of redundancy. The implementation of the SCB promoted teamwork, as supportive personnel assist professional nurses with turning, positioning and basic comfort care measures. The Skin Care Bundle was initiated in critical care units as an original research project. The experience of the critical care unit nurses in pressure ulcer prevention and in providing care to a high-risk population ensured the high-reliability of the SCB. The bundling of the SCB components provided continuous availability of evidence-based practice, as well as a high level of insurance in maintaining the all or nothing approach of the SCB. This maximized pressure ulcer prevention in the critical care unit.

The SCB was implemented hospital-wide in the fourth quarter of 2008. In addition to the SCB, the SKIN Champions initiative was implemented, involving a three-month commitment from staff nurses on each patient care unit as SKIN Champions. The nurses

committed to participate in educational seminars and to support their peers and model best practice in pressure ulcer prevention. In combination, these two innovative initiatives have dramatically reduced the incidence of hospital-acquired pressure ulcers.

In 2008, the overall rate of hospital-acquired pressure ulcers was 5.47. In 2009, the overall rate of hospital-acquired pressure ulcers was 2.4. This is a decrease of 56 percent from 2008 to 2009.

South Nassau Communities Hospital

Maintaining the Momentum on Patient Throughput

Challenges of patient flow or “throughput” brought about by increasing volume in the Emergency Department and Perioperative Services presented mirror images of broader patient care access issues reflected through these two service lines. To improve performance, the hospital analyzed collaborative interdepartmental processes regarding patient admission, staffing, registration, bed turnaround time, patient discharge, transport and placement.

Operational and systems-based initiatives were designed to increase the efficiency and timeliness of key processes related to patient throughput. These included enhancement of a Bed Demand Escalation Plan; establishment of a designated Bed Coordinator and an Assistant Director of Nursing with oversight for Patient Throughput; continuation of an ongoing Care Management Length of Stay project; convening of daily tactical bed board care coordination team meetings for the identification of patient placement needs and discharge barriers; devising specific cardiac monitoring admission criteria resulting in increased availability of cardiac monitors; direction of hospitalist admissions for co-horting of patients on a dedicated unit; installation of an Emergency Department Patient Tracking Dashboard promoting quick view status of

patient diagnostics, disposition and core measures indicators; implementation of bedside patient registration in Emergency Department; execution of bedside handoff of care reports in the Emergency Department by critical care nurses; and launch of an innovative, flexible staffing solution connecting an untapped supply of nurses with the demand of registered nurse staffing needs using a non-traditional scheduling process.

One significant outcome included a 27 percent increase in favorable responses as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems category, “Time Spent in the Emergency Department.” Other positive results included a 30 percent decrease in time from the Emergency Department to critical care patient transfers over a three-month period, a 24 percent decrease in “time of admit to arrival on unit” over a six-month period, and a 28 percent decrease in “Red” (total bed capacity) hours in 2009.

South Nassau Communities Hospital

Re-designing Processes to Prevent Hospital-acquired Venous Thromboembolism (VTE)

Our institutional incidence of VTE, as well as compliance with existing protocols, was reviewed. Standardizing protocol, simplifying the protocol order set, designing the order set's integration into the clinician workflow and presentation of mandatory physician education regarding the problems associated with hospital-acquired VTE were all key to the project's success. Data were collected during all of 2008 and 2009. The project began during 2008 and new protocols were fully implemented by July 2009.

Two multidisciplinary teams (medical and surgical) were charged with evaluating the current processes for VTE prophylaxis. Each team was led by a physician team leader who had expertise in VTE prevention and prophylaxis. The teams utilized a modified "failure mode and effects analysis" approach to identify the possible reasons that the current VTE prophylaxis may be underutilized. Once the major issues were identified the team employed the "plan, design, measure, assess, improve" approach methodology for the project. Baseline data were reviewed and the team developed measurable goals and metrics with accompanying timeframe of 12 to 18 months for project completion. Performance improvement staff reviewed all open available medical records during one week in each

quarter to assess for the appropriateness of risk identification and appropriate prophylaxis (approximately 250-300 records per quarter). Exclusion criteria included obstetrical, psychiatric, and pediatric patients.

Prior to implementation, the facility's rate of hospital-acquired VTE was 0.43 for 1,000 patient days. A rate of 0.35 for 1,000 patient days was achieved in the first six months after implementation. The percentage of appropriate prophylaxis was initially 66 percent, but increased to 86 percent for the six months following implementation.



Southampton Hospital

A Nursing Strategic Plan Built Upon a Foundation of Patient Safety

In 2006, the department of nursing conducted a needs assessment focusing on quality/patient outcomes, recruitment/retention, and patient safety. Part of the assessment included distribution of the Association for Healthcare Research and Quality (AHRQ) Hospital Safety Survey to the department staff. Respondents rated the categories of overall perception of safety at 33 percent, communication openness at 49 percent, and patient handoff at 28 percent. Further, the department of nursing identified dedicated staff in areas not supported by systems and processes conducive to promoting patient safety,

Southampton Hospital's goal was to create a nursing strategic plan with a visible commitment of leadership, raise awareness of patients at risk for harm, and foster an environment of safe practice. This was accomplished through the promotion of transparency, insight gained by conducting root cause analysis, real-time coaching and guidance to the staff, re-introduction of the nursing code of ethics, transitioning nursing shift-to-shift report from the conference room to the bedside, which includes the patient in the daily plan of care, clinical/administrative staff rounding, and other internal changes.

The project utilized the principles of continuous quality improvement: involvement of staff at all levels; utilization of standardized accepted tools as a means of measurement; establishment of a baseline to measure results; benchmarking both internally and externally; and utilizing best practice standards to promote change.

The Hospital Safety Survey was re-distributed in 2009 and improvement was found in all areas. The overall perception of safety increased 40 percent, open communication increased 24 percent, handoffs increased by 32 percent, and the registered nurse vacancy rate decreased, as did the average monthly turnover rate.

Southside Hospital

Improving Pain Management in the Limited English Proficient (LEP) Population

Pain management should be accessible to all patients, regardless of race, class, gender or language. In diverse communities, language and culture may play a significant role in how staff regards the pain of others. The goal of this initiative was to improve pain management for LEP patients by increasing staff and physician awareness to cultural differences in the patient population utilizing a multi-factorial approach.

In 2004, the Nursing Performance Improvement Department began analyzing performance data on pain management for LEP patients. At that time, nurse managers were performing chart reviews to discern how well pain was managed for all patients with regard to delivery, scoring, assessment and re-assessment of pain. Initial analysis on Press Ganey scores suggested that there was a strong negative relationship between nursing staff's subjective scores on how well they were managing pain and patients' subjective scores on how well they believed their pain had been managed during their hospitalization.

Consequently, interviews with staff about pain management suggested that there were often language barriers that prevented them from doing a better job for LEP patients. As a result, three initiatives were

implemented in the peri-natal areas: (1) better use of interpreter services in the peri-natal areas, (2) physicians' orders to either order patient-controlled analgesia (PCA) or round the clock (RTC) administration of analgesia and (3) the provision of education and consciousness-raising for nursing staff and physicians with regard to pain management in a diverse community.

As a result of these efforts, pain management scores for both English-speaking and LEP patients have risen significantly between January 2005, when earnest efforts began to improve pain management for LEP patients, and December 2008, the last period studied. Pain management and respect for cultural needs were highly correlated. Significant improvements in the post-partum area on pain management were found in the general patient population for the same period (2005-2008). Furthermore, significant culture and pain correlations were found in both the English speaking and non-English speaking patient populations.



Stony Brook University Medical Center

Fostering Organization-wide Use of Failure Mode and Effect Analyses (FMEA)

Utilizing Failure Mode and Effect Analyses (FMEAs) allows for the ability to proactively study high-risk processes, identify potential failure modes in these processes, and assess the severity, frequency and detection of failure modes using standardized scales. By calculating a risk priority number (RPN), a team may identify significant risk points requiring the implementation of risk reduction strategies to improve performance and safety. To ensure success, these interventions are measurable and focus on systematic process deployment.

Most notably, although the Joint Commission on Accreditation of Healthcare Organizations requires accredited healthcare organizations to conduct one proactive risk assessment per year, Stony Brook University Medical Center, continually embedding a culture of patient safety, requires every department to conduct a FMEA throughout the year, on a continuous basis. Each department is required to conduct an FMEA within three months and, after completion, is required to identify the next FMEA for implementation. Organizationally, the goal is to implement nearly 100 FMEAs annually. Every leader, department head, and nurse manager were provided training and tools to allow them to facilitate FMEAs with interdisciplinary teams using standardized tools. They are required

to select high-risk processes and apply the use of the FMEA methodology to identify and implement risk reduction strategies and measure the effectiveness of interventions. By continually implementing multiple, simultaneous FMEAs, it will allow the organization to hasten the goal to systematically deploy key processes and reduce error, while improving safety.

Outcomes were significant. They included a decreased ratio of falls to falls-with-injury from 34 percent to 15 percent; improved Employee Annual Physical Assessment rates from 74 percent to 97 percent compliance; an increased number of quarterly safety incident reports generated by the bedside nurse from 10 to 25 on a unit; and improved endotracheal intubation by paramedics relating to medication and dosing from 82 percent to 100 percent.



Stony Brook University Medical Center

Standardization to Prevent Venous Thromboembolism (VTE)

Stony Brook University Medical Center identified an opportunity to improve standardizing Deep Vein Thrombosis (DVT) risk assessment and orders for prophylaxis to improve patient safety. In order to standardize assessments relating to DVT prophylaxis, an electronic solution was established to systematically deploy an improved process which utilizes the National Quality Forum (NQF) recommendations; Joint Commission Standards and the American College of Chest Physician (ACCP) established guidelines. As a result of implementing an electronic solution, adult patients hospital-wide (excluding psychiatry) are assessed within 24 hours of admission and appropriate orders are established.

Establishing the need and subsequent execution of a VTE prevention solution occurred through the formation of a key stakeholder group with strong stakeholder presence. Hospital data reviewed suggested that there was an opportunity to improve assessing patient risk of acquiring a VTE. All medical and surgical services (including pediatrics and psychiatry) were asked to review current guidelines and identify care practices within their specialties that were not addressed in the national guidelines. The review and subsequent input from physicians was discussed and “buy in” from all areas regarding care practice was established. A policy and procedure to systematically standardize processes relating to DVT prophylaxis was also created. Key hospital leadership was provided the data and methodology of the team’s improvement strategy.

The electronic solution provides standardized access to the electronic assessment, physician orders, and key safety clinical considerations. An innovative, breakthrough strategy to ensure high reliability is the hard wiring of compliance through the electronic patient record. The patient ordering function is “locked” if an assessment is not completed within 24 hours of admission. To unlock the record the Licensed Independent Practitioner (LIP) must complete the assessment and review and select the recommended orders when indicated. Two additional aspects of the electronic solution individually stand alone as a breakthrough strategy in health care. A “real time” electronic alert is generated when specific labs abruptly change, indicating a patient is at risk with therapy. The second solution is the electronic “lab monitor” that provides alerts and orders tests automatically 18 hours after the first dose of pharmacologic regimen is received. In addition, LIPs now have a direct electronic link to resources when additional clinical consideration is necessary.

Overall, since the initiation of the electronic solution, VTE events decreased from a rate of 0.49 per 1000 days during a seven-month period. Prior to the plan’s implementation, the assessment within 24 hours was 64 percent. Post implementation of the electronic solution in November 2009, that assessment rose to 91.2 percent.

Winthrop-University Hospital

Code H Obstetrical Hemorrhage, Development of a Team Approach

In 2004, the New York State Department of Health (NYSDOH) issued a health advisory stating that maternal mortality rates in New York State are higher than the national average, and hemorrhage is the leading cause of mortality. It further asserted that health care providers can prevent maternal deaths by improving recognition and response to hemorrhage; blood loss is frequently underestimated; the causes of death due to hemorrhage are multi-factorial; and prevention requires a multidisciplinary response. It advised that hospital systems with a rapid and coordinated response to extreme blood loss can limit maternal morbidity and improve maternal survival.

When this same advisory was reissued in 2009, a task force was convened to further develop an interdisciplinary team response to hemorrhage and look at system factors that result in delays in recognition and treatment.

Some improvement strategies included establishing a multidisciplinary obstetrical hemorrhage team consisting of an obstetric anesthesiologist, chief resident, attending physician, labor and delivery nurse and blood bank supervisor. The program also included massive staff education on estimation of blood loss and recognition and

response to hemorrhage. A massive transfusion protocol was established. Release of blood products and lab results facilitated the creation of a code H cart containing emergency equipment and a reference manual with emergency phone numbers, diagrams of emergency maneuvers, and medication information.

As a result of this team approach, the staff now recognizes and responds to significant blood loss sooner. The approach also fosters better defined roles, communication, and patient-focused nursing care. In addition, a massive transfusion protocol was established and implemented the response of blood bank to blood product requests became more timely and efficient. Now, nurses feel supported because they can activate Code H. Hemorrhages are reviewed with specified data criteria and process improvement follow-up occurs.

Winthrop-University Hospital

Got Milk? Vital: Human Milk for premature infants

The New York State pre-term birth rate is 12.4 percent, and Nassau County has one of the highest rates in New York State (Peri-stats, 2009). Pre-term infants are at considerable risk for increased morbidity and mortality compared to their full-term counterparts. They have a higher risk of learning disabilities, cerebral palsy, sensory deficits, respiratory illnesses and gastrointestinal illnesses than full-term infants, according to the March of Dimes.

Mothers' Own Milk (MOM) has been demonstrated to have multiple benefits for pre-term infants. Providing MOM to the pre-term infant has nutritional, gastrointestinal, immunological, developmental and psychological benefits, according to popular clinical literature and studies in this area. In addition, breast-fed pre-term infants have a lower rate of ear infections, respiratory infections, or infection-related events. They also have lower rates of gastrointestinal infections, specifically necrotizing enterocolitis and lower mortality rates. Breast-fed pre-term infants are discharged earlier from the Neonatal Intensive Care Unit (NICU) than their formula-fed counterparts.

In this vulnerable population, the rates of mothers providing MOM are decreased when compared to their healthy newborn

counterparts. Increasing the amount of MOM, and providing donor milk in the NICU was the goal of this project. This was achieved by dedicating a NICU lactation consultant; nursing and resident education; symphony premie pumps; rental pumps with insurance reimbursement; and donor milk.

Outcomes achieved with this program included an increased percentage of mothers providing MOM from 73 percent to 93 percent; increased MOM production utilizing the symphony premie pump; increased insurance reimbursement for breast pump rentals and decreasing the cost; providing hospital-grade rental pumps to go home with mothers; a tissue license to distribute donor milk; and nursing and resident awareness/education.

Winthrop-University Hospital

CPOE System Enhanced by Visual Cues

Clinical information systems improve many of the safety challenges identified within the paper process. This technology also creates new challenges and patient safety concerns.

The hospital implemented a computerized physician order entry (CPOE) in July 2006. During system development, a risk point was revealed relative to compliance with the hospital's patient identification policy. The system did not have a patient verification process built into the ordering pathway. In response, Winthrop customized the system by adding a patient verification screen that included the patient identifiers that were defined in the hospital's policy and an acknowledgement button that the provider would select to proceed.

Despite implementation, we saw a rise in wrong patient selection. Investigations revealed the ease with which a provider can unintentionally select the wrong patient due to distraction, "point & click" or keystroke errors. The verification screen was not enough; providers became "immune" to the screen and went to the "OK" button and did not take the time to verify the information.

Development of a verification screen that mandated an active process from the provider was created using visual cues (i.e.

colors) and active entry of information. This forced the provider to pause and think before proceeding. The active input portion of the screen is moved to different areas approximately every three months to promote visual stimulation and prevent task-oriented behavior.

The results of this change were dramatic. In 2009, 37 instances of wrong patient selection were received via the electronic reporting system and verbal quality improvement reports. All selections reported involved wrong order entry of blood products or medication. However, none reached the patient. CPOE increased awareness and transparency of errors. After implementation of the new patient verification screen, one incident of wrong patient selection due to user distraction has been reported.



NASSAU-SUFFOLK HOSPITAL COUNCIL

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