

HANYS' PINNACLE AWARD FOR
**QUALITY AND
PATIENT SAFETY
2016**

Nomination Profiles



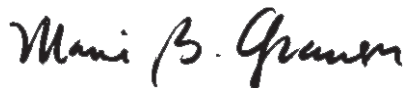
INTRODUCTION

We are pleased to share this annual compendium of the nominations for HANYS' Pinnacle Award for Quality and Patient Safety, which recognizes organizations that are playing a leading role in improving healthcare delivery in New York State.

HANYS is pleased to highlight 84 nominees from across the state that are taking bold steps to improve patient care and outcomes. During this time of rapid change and uncertainty, their entrepreneurial spirit and passion for innovation and ongoing learning is critical to advancing the health of individuals and communities.

HANYS thanks its members for their willingness to share 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,

A handwritten signature in black ink that reads "Marie B. Grause". The signature is written in a cursive style with a large, stylized initial "M".

Marie B. Grause, R.N., J.D.

President

2016 WINNERS

TOP LEFT: Joseph Sala, Director, Network Dialysis and Nephrology (center), accepts HANYS' 2016 Pinnacle Award for Quality and Patient Safety on behalf of Bassett Medical Center/Bassett Medical Group.



TOP RIGHT: Allison Carballo, R.N., Patient Safety Specialist (center), accepts HANYS' 2016 Pinnacle Award on behalf of the Steven and Alexandra Cohen Children's Medical Center of New York.



BOTTOM LEFT: Grant Kelley, M.D., Physician Quality Director (center), accepts HANYS' 2016 Pinnacle Award on behalf of St. Joseph's Hospital Health Center, Syracuse.

POST-ACUTE/OUTPATIENT PROVIDER

Bassett Medical Center and Bassett Medical Group

Improving Quality, Outcomes, and Efficiencies for End-Stage Renal Disease Patients Using a "Right Fit Program" Strategy

BOTTOM RIGHT: Northwell Health receives HANYS' Pinnacle Award. Pictured (from left): Robert Panzer, M.D.; Kerri Anne Scanlon, R.N., M.S.N., Chief Nursing Officer, North Shore University Hospital and Chief Nurse Executive, Northwell Health; Karen Nelson, R.N., M.B.A., Vice President, Clinical Excellence and Quality; Lori Stier, R.N., Ed.D, Assistant Director, Quality Management; Donna Armellino, R.N., M.S.N., Vice President, Infection Prevention, all from Northwell Health; Stephens Mundy; and Catherine Galla, R.N., M.S.N., Corporate Director, Nursing Operations, Northwell Health.



PRESENTING THE AWARDS: Stephens Mundy (right each photo), Chair, HANYS Board of Trustees and President and Chief Executive Officer, The University of Vermont Health Network—Champlain Valley Physicians Hospital; and Robert Panzer, M.D. (left each photo), Chair of HANYS' Statewide Committee on Quality Initiatives and Associate Vice President for Patient Care Quality and Safety and Chief Quality Officer, Strong Memorial Hospital.

HOSPITAL WITH 200 - 500 BEDS

St. Joseph's Hospital Health Center

Inter-Professional and Systems Approach to Proactively Decrease Inpatient Hypoglycemia

HOSPITAL WITH LESS THAN 200 BEDS

Steven and Alexandra Cohen Children's Medical Center of New York

"Commit to Zero" Safety Program



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CHAPTER 1

CLINICAL IMPROVEMENTS

HANYS' PINNACLE AWARD
FOR QUALITY AND
PATIENT SAFETY 2016

Lung Partners Primary Respiratory Care

Crouse Hospital, Syracuse

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Lung Partners Primary Respiratory Care is a unique primary respiratory care model for inpatient chronic obstructive pulmonary disease (COPD) management.

There is a great opportunity to improve management of COPD in the hospital setting. In the traditional hospital model, care is mostly delivered by hospital-based physicians aided by extenders. There are often delays in care due to communication issues and the patient's plan at discharge may not be carried out at home. In a hospitalist model, a patient's care team is frequently different on each readmission. Given the growing number of patients and the physician workforce challenges, the respiratory therapist (RT) is the logical choice for COPD disease management. Fragmentation of care can be reduced if the RT has a primary relationship with a COPD patient for all hospital admissions and is actively involved in transition to home.

Patients enrolled in Lung Partners have a Primary RT for the initial and all subsequent hospitalizations and have Lung Partner RTs as a resource when they are not in the hospital. The Primary RT is the major physician partner in the management of COPD patients. The Primary RT educates the patient on his/her disease and coaches disease management skills, and screens the patient for co-morbidities, including anxiety and depression. Protocols are in place for patients to receive services based on the Primary RT's assessments.

A unique scheduling matrix has been implemented to support this primary care model. RTs travel in a "SWAT team" approach to all units, enabling them to see their own patients and reduce late treatments. The RT department has moved from a task-oriented to disease management focus. Lung Partners will provide better care for COPD patients, improve their overall health, enhance care delivery, and decrease readmissions. This model uses RTs to the full extent of their licensure.

OUTCOMES ACHIEVED

- Late treatments were reduced from 23.71% to 2.72%.
- There was a 28% decrease in 30-day readmissions due to COPD.
- Respiratory medication errors decreased 27%.
- Patient satisfaction is improved.
- There has been improvement in assessment and referrals for a large number of COPD patients with major anxiety and depression.

LESSONS LEARNED

- Primary RTs can be successful in a primary respiratory care model with improvement in patient care.
- Significant efficiencies can be achieved with a SWAT team approach to treatment delivery.
- RTs can function extremely well as a physician extender for COPD disease management when allowed to practice at the full extent of their training.

Reducing the Patient's Glycemic Levels During Acute Hospitalization Using the Basal Bolus Insulin Regimen

Delaware Valley Hospital, Walton

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Having personal knowledge of the basal bolus insulin regimen at other facilities, members of Delaware Valley Hospital's staff suggested considering implementing this practice at the facility. With the knowledge that insulin is one of the medications most likely to be associated with adverse events in the hospital setting, the staff, acting as patient advocates, researched best practices. Several studies/trials/reviews demonstrated the superiority of basal bolus insulin regimens (basal-nutrition-corrective dose) compared to using the sliding-scale regimen.

To improve patient care and reduce insulin-associated adverse drug events, and, as recommended by the American Association of Clinical Endocrinologists and American Diabetes Association, Delaware Valley Hospital decided to implement the following key interventions:

- Develop and implement an insulin management process.
- Plan for conversion from home medication regimens (all home insulin would be discontinued upon admission to the hospital).
- Develop standardized insulin order sets.
- Ensure these order sets provide guidance for both the patient who is eating and for those who are not.

A multidisciplinary team was formed; a program developed; policies written; order sets designed; education provided to applicable staff, patients, and families; and implementation began in July 2012.

OUTCOMES ACHIEVED

- There was a 77% reduction in the number of acute inpatients experiencing a hypoglycemic event (glucose less than 50mg/dL) during hospitalization.
- The number of acute inpatients experiencing a hyperglycemic event (glucose greater than 200mg/dL) during hospitalization was reduced 23%.

LESSONS LEARNED

- A multidisciplinary team approach is essential in identifying patient risk and facilitating change.
- Implementation of a new process must be carefully planned before execution so that all parties are coordinated and patient care remains seamless.
- Process change and implementation often require ongoing revision as the need is identified through actual process use; ongoing reinforcement and education is imperative to maintaining compliance.

Quality and Safety Initiative to Decrease Blood Utilization in a Community Hospital

Highland Hospital, Rochester

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Between 2009 and 2015, Highland Hospital reduced hospital blood transfusions by more than 50% using a robust multimodal, continuous transfusion reduction program. This saved an estimated 110 lives and yielded more than \$10 million in hospital savings.

The hospital collected data from previous years using its blood bank informatics program and then linked those data to the laboratory computer information system to add patient demographics, patient clinical information, and the name of the ordering physician. The hospital developed transfusion templates for each blood component based on national guidelines, which were then converted into an actionable algorithm that electronically alerted clinicians when the transfusion fell outside guidelines.

The hospital aimed to change culture among blood bank technicians and ordering clinicians by providing education regarding the scientific evidence related to transfusions and promoting prudent transfusion attitudes among blood bank technicians by restricting stockpiles of blood components. The hospital changed behavior among blood bank technicians by empowering them to question any transfusion order that did not meet the guidelines, even if it was an override request by the ordering physician. Ordering physicians were given the telephone number of the director for immediate consultation. The hospital used grand rounds, individual counseling, and coaching to educate technicians and clinicians (including residents).

The hospital also generated quarterly utilization reports for staff meetings and disseminated clinician-level utilization reports to the chiefs of various hospital departments. Monthly transfusion audits by blood bank staff ensure patient safety during transfusions. This process has exemplified how an ongoing quality improvement program can result in sustained and continued reduction in transfusions over seven years.

OUTCOMES ACHIEVED

- The hospital achieved a 51% reduction in the total blood components transfused between 2009 and 2015, including a 47% reduction in packed red blood cells.
- Blood component wastage was reduced by 75%.
- Transfusion reactions were reduced by 35%.
- Total savings (blood acquisition and blood transfusion activity costs) of more than \$10 million were realized.
- About 110 patient deaths, 500 inpatient complications, and more than 18,000 inpatient days were avoided.

LESSONS LEARNED

- Changing culture of blood bank technicians and clinicians (i.e., relevant shared knowledge, attitudes, and behavior) takes persistence and multimodal approaches.
- Quarterly reports provide a means to ensure that hospital department chiefs are engaged in the process while also providing feedback to clinicians regarding their progress in achieving appropriate use of blood bank derivatives.

Immediate Use Steam Sterilization Reduction

Highland Hospital, Rochester

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Regulatory agencies and professional organizations discourage the use of immediate use steam sterilization (IUSS) as a patient safety concern because it introduces the potential for infection. Patients for whom IUSS-processed instruments are used do not receive the same standard of care as those whose instruments have gone through the full reprocessing cycle. This initiative took a three-pronged approach to reduce IUSS: data-driven capital investment, instrument availability enhancement, and priority process improvement/education. This initiative required participation from central sterile processing (CSP), the operating room (OR), and administration.

The initiative began with representatives from three divisions of the perioperative areas. They were presented with data that detailed items that went through the IUSS process in the past six months. The items were divided by the two deficient categories: instrument inventory and instrument availability. The instrument needs were identified and slated for capital investment. Par levels of single instruments were adjusted and continuously regulated in close proximity to the OR to enhance their availability.

“Turnover for next case” was easily identified as the main reason for IUSS. To streamline and improve the turnover process, an “A3” team was formed. The structured processes developed and improved upon by this team led to a significant sustained reduction in the IUSS rate. This group promoted cohesiveness and trust among OR and CSP staff by empowering them to follow the priority process.

OUTCOMES ACHIEVED

- The hospital’s goal of 5% IUSS has been met or exceeded since June 2015.
- The 2014 average IUSS rate was 9.22%.
- The 2015 average IUSS rate was 5.01%.
- The 2016 average IUSS rate to date is 2.48%.

LESSONS LEARNED

- Creating a team initiative based on communication and respect had just as large an impact as the capital investment.
- Understanding was achieved through discussion of the different departments’ processes and the ability to identify the factors that cause delays or missteps, without laying blame.
- Leadership collaboration from the different departments broadened accountability, which supported a continuum of staff effort to follow best practices.

Evaluation of Inpatient Influenza and Pneumococcal Vaccination Acceptance Rates with Pharmacist Education

Kenmore Mercy Hospital/Catholic Health

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This project entailed pharmacists and/or pharmacy interns counseling patients who had previously declined either influenza or pneumococcal vaccination upon admission. Patients admitted to five out of the seven inpatient units were eligible for enrollment.

Patients qualified for enrollment into the program if they were adult patients 18 years of age and older who had an indication to receive either the influenza or pneumococcal polysaccharide vaccine per the Advisory Committee on Immunization Practices (ACIP) recommendations, declined receipt of the vaccine after the initial offer by a nurse, were able to make their own healthcare decisions, and were alert and oriented.

Once the protocol was developed, the staff pharmacists and interns were informed about the program one-on-one and/or via email. Patient education sheets were made for each vaccine and were distributed to staff for use during counseling. Upon admission to the hospital, patients were asked a series of questions by nurses to determine if they qualified to receive either the influenza or pneumococcal vaccination, per current U.S. Centers for Disease Control and Prevention guidelines. If the patient initially declined to receive vaccination, the pharmacy department was alerted the following morning via an automatically generated report. Patients appearing on the report were briefly counseled by a pharmacist or intern in person regarding vaccine safety and efficacy and were provided written information. Once counseling was complete, the patient was re-offered the appropriate vaccine.

The outcome of each counseling session was documented as an intervention in the pharmacy order entry system, which allowed for data extraction. Outcomes were documented as “declined vaccine,” “accepted vaccine,” or “uncertain.” If declined, staff were instructed to specifically document the patient’s reason for declination. This included fear of adverse effects, religious beliefs, or any other cited reason.

OUTCOMES ACHIEVED

- After counseling, 23.4% and 26.5% of patients agreed to receive influenza and pneumococcal vaccination, respectively.
- An unanticipated subset of patients was undecided after counseling. Therefore, taken together with those who consented to receive vaccination after counseling, 39.2% and 45.8% of patients were influenced by the influenza and pneumococcal counseling, respectively.

LESSONS LEARNED

- Working closely with other disciplines, including nursing, is essential to the success of the program because it will affect patients and may result in an increase of immunizations that the nurses will administer during the patient’s hospital stay.
- The pharmacy staff must be educated thoroughly. This is vital because they are going to determine the success of the program through quality of counseling and appropriate documentation.
- Anticipate empathizing with patient concerns and hesitations regarding vaccination. Make sure to convey understanding, not dismissal of their feelings.

Diabetes Engagement and Care in Observation Project

Long Island Jewish Medical Center, New Hyde Park

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An estimated 25% to 30% of diabetes mellitus (DM) and up to 90% of pre-DM remains undiagnosed in the United States, despite the ease of testing. Although diagnoses of pre-DM or DM are traditionally made in the outpatient setting, persistently high prevalence of undiagnosed disease requires alternative screening strategies. The Diabetes Engagement and Care in Observation (DECO) project is a multifaceted educational, diagnostic, and treatment program that addresses both the issues of undiagnosed dysglycemia and point-of-care treatment initiation in the diverse population of emergency department (ED) observation units.

Observation units (OUs) are an increasingly common model of continued care that is intended for patients presenting to the ED who require more than six hours of observation but have a high probability of being discharged in less than 24 hours. These units are becoming increasingly popular in the U.S., with nearly five million annual admissions. DECO uses the ease of DM testing, existing OU resources, and the OU extended length of stay to screen for undiagnosed DM and pre-DM. Early pilot projects found that up to 9% of OU patients had undiagnosed DM and 40% had undiagnosed pre-DM.

This novel screening program was expanded to include DM education by trained registered nurse (RN) and physician assistant (PA) “Diabetes Champions” and initiation of early pharmacological treatment for newly diagnosed DM. Newly diagnosed DM patients were amenable to DM education and initiation of long-term pharmacologic care in the acute setting. This high-yield approach added value since it involved immediate prescription of long-term medications and did not rely on patients initiating outpatient care.

DECO has recently expanded to address the high prevalence of advanced DM in the OU by offering endocrine consultations to all OU patients with severely uncontrolled DM.

OUTCOMES ACHIEVED

- This program provided a venue to diagnose large numbers of previously undiagnosed diabetes in a structured medical environment for initial counseling and treatment.
- Trained PA and nurse diabetes educators effectively engage diabetic patients.
- Early pharmacological intervention is provided for newly-diagnosed DM.
- All patients with uncontrolled DM receive endocrine consultations.

LESSONS LEARNED

- The OU setting can be used to identify patients with undiagnosed disease. It is feasible to provide a program where every patient in the OU is screened for DM or uncontrolled DM.
- The OU can be used as a setting to provide interventions for patients with newly-diagnosed DM and uncontrolled DM. These interventions include initiation or modification of medication, referral to treatment, and extended education about the disease and its harmful effects.
- Frontline ED staff such as PAs and RNs can be trained to be diabetes champions and provide interventions in a high-risk disease during a “golden opportunity” such as their OU stay. This model is sustainable and replicable.

Anticoagulation Stewardship Program

Rochester General Hospital

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Medications designed to affect blood clotting—both anticoagulants and drugs that encourage the clotting process—are extremely useful for patients with certain conditions, but can easily lead to dangerous side effects when used incorrectly. To promote their optimal use at Rochester General Hospital, an anticoagulation stewardship program was formed, led by an anticoagulation team (ACT) comprised of a hematologist and two clinical pharmacists with specialized anticoagulation training. Today, ACT works collaboratively to assist all clinical teams in the safe and responsible administration of these drugs.

The foundational work of ACT involves a daily surveillance of all cases involving hospital patients taking anticoagulant medication, with interventions triggered by drug orders that fall outside of the Food and Drug Administration (FDA) guidelines. ACT also conducted a drug-use evaluation that found overuse of a four-factor prothrombin complex concentrate (PCC), typically indicated for anticoagulation reversal in the event of severe, life-threatening bleeding or when an emergent, life-saving procedure is needed. The study found that only 63% of PCC use was within FDA indications. Because PCC carries a risk of thromboembolic complications and is very costly, limiting use to emergent situations is essential to maximize patient safety and improve the overall value of care provided.

ACT and hematology staff drafted evidence-based PCC use guidelines, conducted provider education, developed a questionnaire with the electronic medical record (EMR) team that must be completed by the provider, and designed a 24/7 on-call approval process to carefully monitor PCC use for diagnoses other than intracerebral hemorrhage. Together, the measures led to significant improvement in PCC use.

OUTCOMES ACHIEVED

- The number of appropriate PCC doses given in the post-intervention period (7.67 per month) remained consistent with pre-intervention doses (8.0 per month).
- Following the establishment of the ACT and the anticoagulation stewardship program, the percentage of inappropriate PCC orders dropped to 2.4%.
- Hospital costs related to inappropriate PCC orders were reduced from an average of \$34,758.11 per month prior to the establishment of the program to a total of \$3,971.55 in the first five months following its inception—dramatically increasing the value of care provided without reducing the quality of outcomes.

LESSONS LEARNED

- Having the structured support of the hematology staff helped ensure hospital-wide acceptance of the program, and the changes necessary to make it work.
- Implementing the 24/7 authorization process augmented early efforts around staff education, and created a more effective utilization model.
- Staff concerns about the possible over-regulation of potentially useful medications can be alleviated through transparent reporting of data that indicate appropriate usage has not been affected.

Antimicrobial Stewardship Program

Rome Memorial Hospital

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A review of Rome Memorial Hospital's antibiotic utilization showed opportunities for improved documentation and prescribing. The facility established the Antimicrobial Stewardship Program as a solution to ensure that every patient receives optimal antibiotic therapy.

To combat the increase of antimicrobial resistance, the facility instituted a framework to reduce inappropriate antibiotic utilization. This project was in part driven by the Centers for Disease Control and Prevention's identification that one in two patients receive an antibiotic during their stay. High occurrences of antimicrobial prescribing can lead to deadly nosocomial infections, such as *Clostridium difficile*. A number of Institute for Healthcare Improvement drivers also helped the hospital properly initiate this program.

In 2015, the program was expanded beyond the existing intravenous (IV) to oral (PO) and renal dosing protocols. Baseline data have continued to be collected to track and trend appropriate antibiotic selection.

OUTCOMES ACHIEVED

- The hospital modified its computerized physician order entry (CPOE) system to require entry of an order set when selecting an antibiotic.
- Medical staff approval of 72-hour soft stops to allow for de-escalation or discontinuation of ordered antibiotics at 72 hours.
- Antibiotic cost per discharge has been reduced.

LESSONS LEARNED

- Education for physicians and consistent communication with pharmacists are key components to successful documentation and reduction of inappropriate antibiotic utilization.
- It is important to understand how physician documentation has changed and how labor-intensive it is to complete documentation within the electronic health record.
- Gaining a physician champion for appropriate documentation is important.
- Understanding the physician's initial intention for symptomatic treatment is critical when attempting to make accurate and meaningful antibiotic recommendations.

Decreasing Sepsis Mortality with Early Identification and Evidence-Based Care

Samaritan Hospital, Troy

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In 2009, Samaritan Hospital identified opportunities to improve early identification and evidence-based treatment of septic or potentially septic patients in the emergency department (ED) and on the medical and surgical floors.

A multidisciplinary team initiated a comprehensive sepsis improvement plan that included sepsis education for physicians and nurses, and a sepsis order set based on the early goal-directed therapy recommendations from the Surviving Sepsis Campaign. Screening of patients for signs of sepsis during triage in the emergency room and sepsis screening on the medical/surgical units was initiated. Evidence-based bundles of care were identified and implemented, which included blood cultures before antibiotics, timing of antibiotics, lactic acid measurement, fluid resuscitation guidelines, vasopressor use, and other Surviving Sepsis Campaign guideline recommendations. Frequent meetings were held to monitor the care of sepsis patients, including compliance with the screening program and care elements, unplanned transfers to a higher level of care, and mortality rates.

Continued monitoring and feedback led to use of improvement tools such as a checklist for care elements, the addition of sepsis criteria to the rapid response team policy, and changes to physician orders to facilitate increased compliance with using standard orders.

The sepsis improvement team meets monthly with a strong physician champion and leadership support. Continuous improvement efforts are ongoing, based on results of care audits, guideline changes, and staff feedback.

OUTCOMES ACHIEVED

- Overall sepsis mortality decreased from 31% in 2009 to 9% in 2015.
 - Severe sepsis mortality decreased from 64% in 2009 to 11% in 2015.
 - Septic shock mortality decreased from 37% in 2009 to 26% in 2015.
- Performance on the “Antibiotics given within three hours” element of the bundle reached 97%.

LESSONS LEARNED

- A dedicated physician champion and quality improvement nurse is needed to drive change with real-time data and continuous feedback of success and failures.
- Buy-in of frontline staff, hospitalists, and ED and critical care physicians is necessary to sustain improvement.
- Senior leadership support is necessary to break down barriers.

A Multidisciplinary Approach to Evidence-Based Practice in the Diagnosis of Adult Malnutrition

Saratoga Hospital, Saratoga Springs

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Following the 2012 publication of the *Consensus Statement of the Academy of Nutrition and Dietetics and The American Society of Parenteral and Enteral Nutrition: Characteristics Recommended for the Identification and Documentation of Adult Malnutrition (Undernutrition)*, Saratoga Hospital recognized the opportunity to better define, diagnose, document, and treat malnutrition.

A multidisciplinary team was assembled to review the guidelines and develop an implementation plan using the Plan-Do-Study-Act approach. The clinical nutrition team was trained on the new guidelines and a reference tool was created for their use. A new screening system was put in place to identify patients at risk of malnutrition within four days of admission, compared to up to seven to ten days previously. As the nutrition experts, the clinical dietitians screen each patient for malnutrition at the time of initial assessment and with each reassessment.

Nursing informatics staff revised the electronic nutrition documentation templates to clearly identify a malnutrition diagnosis and the criteria used to support that diagnosis. When malnutrition is identified, nutrition interventions and patient education efforts are implemented. Nurses were educated on the new diagnosis criteria at a number of practice meetings and encouraged to notify the clinical nutrition team with concerns about individual patients.

The clinical documentation improvement specialists work closely with clinical nutrition to review reimbursement for malnutrition diagnoses and to educate provider groups on the new criteria and improved process for diagnosis and documentation. They track monthly reimbursement related to documented malnutrition diagnosis. A daily report is generated by the information support department that notifies clinical nutrition, clinical documentation, and the hospitalists' group of patients diagnosed with malnutrition. The data collected from the project was presented to the organization's Board of Trustees Quality Committee for review and input. The impact of this project on patient care and the prompt diagnosis and treatment of malnutrition has been significant.

OUTCOMES ACHIEVED

- The organization adopted Consensus Statement recommendations as standard criteria for adult malnutrition, diagnosis, and documentation.
- Proactive utilization of standardized criteria has resulted in early identification of malnutrition and timely intervention; interventions begin by day four of hospitalization, as opposed to day seven to ten.
- More accurate and complete documentation, especially in the case of severe malnutrition, has positively impacted reimbursement.

LESSONS LEARNED

- Incorporating current evidence-based best practice standards into clinical processes is critical to achieving excellent quality of care.
- Cross-institutional awareness of the latest research and the importance of complete documentation of malnutrition results in more comprehensive, accurate, and consistent documentation in patient records.
- It is imperative that diagnosis codes accurately reflect the actual level of care required by patients; the impact on the bottom line of the organization can be significant.

After Superstorm Sandy: Providing High-Quality Emergency Healthcare to the Barrier Island

South Nassau Communities Hospital, Oceanside

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After superstorm Sandy devastated Long Beach Medical Center, residents were without vital emergency medical care. The first major step in restoring health services was the July 2014 opening of a hospital-grade urgent care center. After the hospital received New York State Department of Health approval, it upgraded the center to a freestanding emergency department (ED), which opened its doors on August 10, 2015. The facility operates around-the-clock, 365 days a year, and receives ambulances via the 911 system.

To increase awareness of the availability of emergency healthcare services, the hospital launched an outreach effort and a marketing and communications plan that included newsletters, billboard and newspaper advertisements, and public meetings with business groups, community leaders, and elected officials.

The hospital also worked closely with the City of Long Beach to improve pre-hospital care by establishing a mutual aid partnership to augment Long Beach's existing ambulance fleet. The hospital's ambulances stationed in Long Beach act as a secondary backup under an agreement with the City of Long Beach, which sought the hospital's help to improve its emergency response system.

OUTCOMES ACHIEVED

- Emergency healthcare services were restored on the barrier island.
- Patient satisfaction improved; during the fourth quarter, the ED was recognized for an overall rating score at or above the 90th percentile in a HealthStream survey.
- Access to healthcare was increased by providing services close to residents' homes, especially important to the large elderly population who find it difficult to travel.
- Enhanced ED workflow: the percentage of treat-and-release patients discharged from the ED within 193 minutes of arrival was 83% and 84% over the third and fourth quarters, surpassing a projection of 60%.
- The facility achieved best practice in emergency medicine, with arrival-to-doctor time in less than 20 minutes for non-life-threatening conditions.
- Point-of-care laboratory, digital X-ray, and computerized tomography scans were used with real-time board-certified radiologists, resulting in the delivery of advanced treatment in less time.

LESSONS LEARNED

- Encouraging and maintaining an open dialogue with the barrier island's residents was vital in helping the community establish a plan for emergency medical care.
- Dedicated teams of administrators from all different levels, architects, ED physicians, and nurses working together was a key factor in the lightning-fast opening of the freestanding emergency department.
- Obtaining buy-in from community residents and effecting change can be a slow and arduous process.

The Impact of the Pharmacist on the Medication Reconciliation Process

St. Catherine of Siena Medical Center, Smithtown

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During a monthly audit, hospital pharmacists identified an opportunity for improvements in prior-to-admission medication lists (PTA med list) in the areas of incorrect medication, incorrect/missing dosage, incorrect dosage form, incorrect/missing route, incorrect/missing frequency, or omission of a medication.

National Patient Safety Goal 03.06.01 mandates that hospitals use medications safely. Medication reconciliation must be completed for each patient, comparing medications the patient is taking at home with what is ordered in the hospital. A complete and accurate medication list is a critical step to ensuring medication safety throughout all phases of care.

Administration charged pharmacy with facilitating this process, which has been a challenge since the hospital went live with the electronic medical record (EMR). Pharmacy designed a medication reconciliation plan after hearing concerns from physicians, nursing, and pharmacy regarding medication entry errors. If the PTA med list in the EMR is accurate from step 1 (triage), it saves staff time and improves patient outcomes. Erroneous medication dosages/routes, etc. can follow patients through their admission and discharge. Such errors perpetuate with the next admission to a system-facility since the prior-to-admission medications pull into the EMR from the last discharge.

The medication reconciliation pharmacist program began in February 2015 with the pharmacists doing a complete review of all medications through an interview with patients and families, and contacting nursing homes/assisted living facilities, if necessary. The medication reconciliation pharmacists prevent drug interactions, duplication, and the prescription of non-formulary medications. They target congestive heart failure (CHF)/chronic obstructive pulmonary disease (COPD) admissions and have the potential to prevent readmissions, facilitate early discharges, and improve patient safety and satisfaction. St. Catherine of Siena Medical Center's physicians appreciate this valuable resource and the rapport that has developed between them and pharmacy.

OUTCOMES ACHIEVED

- The hospital has achieved a downward trend in CHF and COPD readmission rates since March 2015.
- The medication reconciliation process is improved and the medication error rate has stabilized.
- Patient length of stay decreased for hospitalist patients from 5.19 days in 2014 to 5.11 days in 2015.

LESSONS LEARNED

- The hospital focused efforts on admitted patients and those most likely for readmission, including CHF/COPD diagnoses.
- The effort was more time consuming than anticipated; the pharmacists can review 100+ patients per month, while managing other duties including vaccination compliance, thus the need for an additional full-time employee.
- The organization identified a need for education regarding PTA medication lists and medication reconciliation for hospitalists, emergency department nurses, and providers.

Comprehensive Care for Joint Replacements: The Peri-Operative Surgical Home

St. Francis Hospital—The Heart Center, Roslyn

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The orthopedic service line, with an emphasis on lower total joint replacement, is a targeted area for growth potential at St. Francis Hospital. The total joint replacement patient population at the hospital increased 334% in 2015, compared to 2011.

With the increased volume, new initiatives were developed to allow for efficient, safe, and optimal experience of care for the orthopedic patient. With leadership support, in 2014, an interdisciplinary orthopedics steering committee was created, along with a “Peri-Operative Surgical Home” serving “a patient-centered, multidisciplinary, and team-based system of coordinated care that guides the patient throughout the entire surgical experience, from decision for the need for surgery to discharge from a medical facility and beyond.”

The committee was chaired by the director of anesthesia performance improvement and quality data analysis, and co-chaired by the orthopedic units’ clinical educator nurse specialist. Membership included representation from nursing, orthopedic surgeons, anesthesiologists, physical therapists, care managers, clinical dietitians, and mid-level practitioners. Data were collated and analyzed on a continuum basis and reported monthly.

Goals included:

- coordinate care with the highest standards for patient safety and efficiency;
- standardize practice (whenever possible) using evidence-based guidelines and clinical experience;
- reduce cost of care and decrease length of stay;
- minimize complication rate and re-admissions;
- improve overall satisfaction of patients, families, surgeons, and hospital staff; and
- demonstrate overall quality and performance improvements.

OUTCOMES ACHIEVED

- Overall length of stay decreased from 3.41 days in 2013 to 3.38 in 2014 and to 3.10 days in 2015.
 - Achievement of discharge disposition goal of patients discharged home increased from 15% in 2013 to 23% in 2014 and to 31% in 2015.
 - Readmissions decreased from 2.6% in 2014 to 2.1% in 2015.
 - Blood transfusions decreased from 10.4% to 4.8% in 2014.
 - Patient satisfaction increased (Press Ganey, “How Well Was Your Pain Controlled?”) from 86.4% in first quarter 2014 to 90.4% in fourth quarter 2015.

LESSONS LEARNED

- Lowering the length of stay and discharging a patient home when applicable for the lower extremity joint replacement patient population shows no compromise to patient safety, complications, readmissions, or experience of care.
- Physician and leadership buy-in is necessary for successful outcomes.
- Collaboration from all disciplines is imperative to ensure that the patient continues along the continuum of care and achieves the pre-determined length of stay.

Inter-Professional and Systems Approach to Proactively Decrease Inpatient Hypoglycemia

St. Joseph's Hospital Health Center, Syracuse

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St. Joseph's Health sees a high proportion of patients with diabetes compared to national and New York State averages; and insulin, considered a high-risk medication, is administered on 23% of hospital days.

A hypoglycemic task force was introduced in 2013 with a focus on education and standardization of protocols, and based on comparative benchmarks, the rates of hypoglycemia decreased to below comparable hospitals. However, events of preventable hypoglycemia continued. Because of the significant impact on quality of patient care for high-risk and chronic disease patients, safety, and overall population health, the goal of this initiative was to proactively decrease inpatient hypoglycemic events.

St. Joseph's objectives were fourfold:

- develop an inter-professional team composed of endocrinology, pharmacy, dietary, and nursing to evaluate episodes of hypoglycemia daily to identify etiologies and initiate changes at the patient and system level;
- educate pharmacy and providers about the principles of daily dose insulin regimens to standardize the approach and language around insulin regimens;
- modify insulin protocols to incorporate guidelines about appropriate dosing and automatic, pharmacy/protocol-initiated changes in basal insulin dosing for fasting glucose measurements <100 mg/dL; and
- leverage a new electronic health record to create an actionable report to identify patients on insulin with a hypoglycemic event, and to create an analytical report to determine accurate, ongoing rates of insulin-induced hypoglycemic events to monitor processes and outcomes.

OUTCOMES ACHIEVED

- Implementation of these initiatives resulted in a decrease in the rate of severe hypoglycemia, <50 mg/dL, by 44% from 8.12 to 4.56 episodes per 1,000 patient-insulin days. Similar decreases in the rates of hypoglycemia were also observed. Furthermore, repeat episodes decreased by 66% from 1.82 ± 0.93 to 0.61 ± 0.46 episodes per 1,000 patient-insulin days. Importantly, this decrease was not associated with an increase in rates of hyperglycemia.
- Multiple specific system etiologies of hypoglycemic events were identified and education and system changes were initiated, including timing of point-of-care glucose and insulin administration, stacking of insulin, and continuation of high basal insulin outpatient regimens.
- Treatment of hyperkalemia with intravenous insulin was also unexpectedly identified as a common cause of severe hypoglycemia (16.2%), and order sets incorporating insulin administration with bolus and continual glucose have been implemented.

LESSONS LEARNED

- Incorporation of an inter-professional team, Lantus protocol adjustments, and education significantly reduced inpatient hypoglycemic episodes.
- An inter-professional team composed of key stakeholders is a powerful resource that can address care at all levels and quickly make system changes, and amplifies manpower and dissemination of knowledge to increase institutional knowledge and improve community glycemic control.
- Daily review of hypoglycemic events reinforces team understanding of insulin regimen protocols and identifies areas for focused improvement.

Improving Sepsis Care: A Multidisciplinary Team's Approach to Implementing Best Practices

St. Luke's Cornwall Hospital, Newburgh

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Before the adoption of the New York State Department of Health severe sepsis regulations in 2013, St. Luke's Cornwall Hospital had made significant strides by forming a multidisciplinary team in May 2012. Comprised of both clinical and non-clinical team members, the sepsis process improvement (PI) team included representation from medical staff, nursing, quality, pharmacy, emergency department (ED), intensive care unit, infection control, health information management, corporate compliance, and case management.

Overarching goals of the project included:

- early recognition of a sepsis diagnosis in the ED;
- continuity of the medical treatment plan from ED to inpatient areas; and
- utilization of order sets, embedded with best practice recommendations (bundles).

OUTCOMES ACHIEVED

- The recognition and treatment time in the ED decreased by 57% from 2013 to 2015 (average time in minutes: 2013 = 98.65 to 2015 = 42.79).
- Development, educational instruction, and implementation of sepsis “triggers” (code sepsis, code shock) enabled rapid deployment of appropriate staff to the bedside and transition to the next level of care.
 - A “scoop and run” approach was adopted for patients in severe sepsis/septic shock for transfer from the ED to the intensive care unit.
 - Activation is based on biometric measures (vital signs), signs of systemic inflammatory response syndrome, biomarkers (lactate), and potential sources of infection.
- Sepsis order sets, founded on evidence-based practice principles, now serve as treatment guides.
- Compliance rates are now in the 98th percentile in New York State for meeting the three-hour and six-hour bundles of care for sepsis management.

LESSONS LEARNED

- A project of this magnitude requires the expertise of all departments; it is important to understand the work of others before making decisions about their work.
- Standardized workflow and clinical pathways using evidence-based practices establish a sense of professionalism and duty in patient care. It empowers staff to make informed decisions about the care that they provide for patients.
- Changing a culture of practice requires much communication; talk until everyone has heard it—and then talk again.

Transforming Diabetes Care for Patients Undergoing Cardiothoracic Surgery: Creating a Culture of Excellence

Stony Brook Medicine

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Perioperative hyperglycemia has long been recognized as a significant contributor to increased rates of sternal wound infection, morbidity, mortality, length of stay, and readmission in patients undergoing cardiothoracic surgery (CTS). Stony Brook Medicine set out to transform perioperative hyperglycemia management within its cardiothoracic intensive care unit (CTICU).

After assembling a multidisciplinary team, Stony Brook underwent a dramatic cultural transformation surrounding management of diabetes mellitus (DM). Weekly “glucose rounds” and ongoing review of enhanced glucose “dashboards” allowed for identification of opportunities to improve and develop more efficient and effective processes in the patient population in near real-time. This led to a number of rapid Plan-Do-Check-Act cycles, working in concert with updated data reports. Throughout the improvement process, this CTS group reported updates to a larger diabetes advisory committee to promote and validate glycemic control while preparing to further expand select initiatives throughout the health system, including perioperative patient optimization.

OUTCOMES ACHIEVED

- A standardized insulin plan is in use with protocolized end points.
- Stony Brook saw a decrease in hyperglycemia from its 2013 rates (21% +/- 3.3, 95%CI) compared to 2015 (11.8% +/- 1.1, 95%CI) within the CTICU.
- There is no evidence of increased hypoglycemia as a balancing metric; rates remain below 1.0% throughout the improvement period. Consequently, the rates of normoglycemia climbed significantly, to nearly 90%.
- Dietary and nutrition standardization and a robust discharge education process were implemented for patients with a history of diabetes.
- Root cause analysis (RCA) is conducted for all diabetes “never events” including hypoglycemia and insulin/medication errors.
- A hospital-wide insulin pump policy was implemented for patient tracking and management.
- Information technology resources were developed for ongoing reporting to track patient histories, pharmacy management, laboratory testing, and outcomes data.

LESSONS LEARNED

- Standardized ordering, protocolized care, and staff education can quickly, safely, and reliably improve care in post-operative patients with diabetes. Cooperation and collaboration across services, key frontline stakeholders, and patients/families is imperative to success.
- Development of accurate and timely data reporting is required for rapid tests of change. This may include unit rounding, information technology reporting, RCA reviews, or outcomes databases.
- There are opportunities for enhancing the way in which patients with diabetes are identified, including indicative testing of patients with diabetes or pre-diabetes via hemoglobin A1C.

Enhanced Quality Care through Patient Blood Management

University of Rochester Medical Center

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In July 2014, University of Rochester Medical Center (URMC) contracted with a blood management consultation company to help establish a patient blood management (PBM) program. The goal was to implement scientifically-based transfusion practices across the entire medical center. The consultants provided URMC with educational resources and mentorship in creating its PBM program and supplied benchmarking data to compare URMC's practices to those of its peers

The core team consists of a medical director and patient blood management nurse coordinator. Pathology faculty provide additional direct support. The technical staff serve as the first layer in the transfusion order evaluation process, determining which orders need further assessment by pathology residents. URMC's residents and faculty function as a resource to all clinical providers, assisting with decisions to transfuse blood components using the most up-to-date evidence-based guidelines.

All change, even positive change, meets resistance. Bias and habit, as well as lack of information, contributed to this resistance in the early stages. Education, a strong evidence base, data collection and analysis, and dissemination of information improved compliance. Enhanced communication channels through newsletters, posters, presentations, and one-on-one coaching with faculty, resident, and nursing staff has fostered buy-in for these ideas and initiatives.

A key element of early success was high level executive support. URMC's information technology department has been instrumental in assisting with data collection and analytics. Influential, progressive physician and nurse leaders have served as champions.

OUTCOMES ACHIEVED

- Utilization decreased 22%, resulting in a direct purchase cost savings of more than \$1.1 million.
- According to National Surgical Quality Improvement Program estimates, this reduction translates to 199 fewer complications, 7,467 less patient days, 45 deaths avoided, and 10,952 fewer nursing hours (5.3 FTEs).
- Benchmarking improved from 12th percentile to 30th percentile in one year (100th percentile being best).

LESSONS LEARNED

- Communication is the most vital aspect of success and the biggest challenge.
- Persistence and tenacity are needed to drive change.
- Best outcomes are achieved when your message is delivered in the most concise manner possible, as time is a most valuable commodity.

Enhanced Recovery After Surgery for Elective Colorectal Surgery

Winthrop-University Hospital, Mineola

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Colorectal surgeries account for 10% of operative procedures and 25% of all operative complications, with post-surgical gastrointestinal recovery directly affecting length of stay (LOS). National Inpatient Sample data indicate that patients undergoing major small and large bowel procedures with major complications have a far greater LOS and hospital cost compared to those without a complication (14.5 days and \$13.6 billion vs. 4.8 days and \$4.2 billion, respectively). For New York State, the data are also staggering (16.6 days and \$628 million vs. 5.0 days and \$206 million, respectively).

Despite evidence-based guidelines to reduce adverse surgical outcomes, effective execution can be challenging. Winthrop-University Hospital implemented a quality improvement initiative, Enhanced Recovery After Surgery (ERAS), to reduce LOS after colorectal surgery. A multidisciplinary task force designed the program. The goal was to reduce LOS and improve outcomes for elective colorectal surgery patients through standardizing evidence-based practices across the care continuum.

Winthrop-University Hospital applied the principles outlined by Henrik Kehlet: to successfully implement an ERAS program, involvement of all patient care members, including nursing, nutrition, and anesthesia was paramount. Additionally, patient education on the process and projected hospital stay was essential. Involved team members reviewed the existing outcomes data to evaluate improvements after implementation. Finally, team triumphs, challenges, and assessment of process deficiencies were reviewed on a monthly basis to identify areas requiring reevaluation and improvement. The results included a reduction in LOS without increasing hospital readmissions, and improved patient flow.

OUTCOMES ACHIEVED

- LOS decreased from 7.64 days to 4.45 days.
- Compliance increased for all 14 American College of Surgeons National Surgical Quality Improvement Program data abstractions for elective colon surgery.
- Patient flow improved from admission to discharge.

LESSONS LEARNED

- Involving the patient and family as active participants in the healthcare team proved quite valuable.
- Involvement of all the surgeons in the initial draft and the final protocol produced 100% compliance with their patients being enrolled.
- Exercising patience with timelines reduces team frustrations.

CHAPTER 2

ENHANCING CULTURE AND LEADERSHIP

HANYS' PINNACLE AWARD
FOR QUALITY AND
PATIENT SAFETY 2016

Improving Patient Safety in Just 15 Minutes a Day!

Bassett Medical Center, Cooperstown

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Bassett Medical Center identified opportunities to improve its culture of safety in mid-2014. The organization was aware of the concept of leadership safety huddles as a way to address many safety challenges. However, Bassett knew that a number of hospitals had struggled with sustainability following the initial safety huddle “honeymoon.”

Bassett embarked on developing a safety huddle structure that employed a number of novel approaches to encourage and sustain engagement and accountability. The daily leadership safety huddle was created to promote situational awareness of issues within the previous 24 hours, as well as current issues that have the potential to impact the upcoming day. The huddle provides directions about the prioritization and responsibility for problem resolution. Further, the follow-up of investigations and actions taken in response to previously reported events are communicated at the huddle.

Bassett believes that the use of safety huddles is a major driver for safer care. The safety huddles have assisted in providing safe, quality care to patients by reducing the risk of system or process failures. Through “huddling,” Bassett has created a blame-free environment where teamwork is enhanced, staff are engaged, and harm is prevented. There have been numerous improvements in practice and process changes based on issues identified in safety huddles.

OUTCOMES ACHIEVED

- Incident/event reporting has increased (and been sustained) by 51% over previous years’ baseline. Near-miss reporting has increased/sustained by 86% over baseline.
- More than 1,500 issues were raised/reviewed at safety huddles during 2015. On average, 20 to 30 issues identified resulted in systems changes each quarter.
- Turnaround time for analysis and action related to events has decreased from seven days at beginning of safety huddle to an average of 48 hours.
- A staff survey found that 88% of huddle participants report that safety and quality issues are reported, investigated, and corrected more quickly since the inception of safety huddles; 89% of huddle participants report that it is considerably easier to connect face-to-face with colleagues about issues and events because of the huddles; and 86% of huddle participants report that organizational teamwork has improved.

LESSONS LEARNED

- The visibility of the chief executive officer and senior administrative and medical staff leadership at the daily huddle is the number one key to success.
- Recognition and reward are important. Each month, huddle attendees receive a small gift with a message of thanks. Each person recognized for a “good catch” or providing outstanding care receives a certificate of appreciation. When a staff member has done something especially noteworthy, his or her supervisor brings them to the huddle for recognition.
- Feedback is critical. A quarterly newsletter, *The Safety Huddle Spotlight*, is sent to all staff and typically includes an article covering a topic raised at the safety huddle.

“Commit to Zero” Safety Program

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

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“Commit to Zero” is an all-encompassing safety program with the goal of eliminating preventable harm to the patients served by the Cohen Children’s Medical Center of New York. Using a self-governance model, a group of key stakeholders engaged in a robust planning phase and then sponsored the rollout of this new safety program, which is aligned with the organization’s strategic objectives.

The hospital established a daily safety briefing to improve situational awareness at all levels of the hospital and to prevent risks from becoming accepted or routine. The organization also educated all team members on safety behaviors, using well-tested approaches available to members of the national Children’s Hospital Solutions for Patient Safety network. Training was delivered in phases, starting with the most high-risk areas and promoted transparency of harm events, recognition of unintentional errors, and systems to eliminate human error.

The hospital launched a “Great Catch” recognition program to ensure that staff are supported and recognized when they mitigate risk in real time to prevent safety events.

The hospital also implemented leadership rounds to identify safety concerns and provide an avenue to escalate these concerns to a level in the organization where solutions can be acted on immediately.

Finally, the hospital launched a safety coach program, knowing that the greatest opportunity to prevent harm is at the bedside. The hospital utilized frontline staff from all disciplines to encourage peer checking and coaching, and provide just-in-time interventions to those team members who may need support. The program is focused on reducing hospital-acquired conditions (HACs) and has developed ten HAC prevention teams.

OUTCOMES ACHIEVED

- The hospital achieved a sustained decrease (75%) in serious safety events from 2012 to 2015.
- There was a statistically significant increase in comfort of escalation, teamwork, and climate of trust from 2012 to 2014, as evidenced by the employee engagement score, a Morehead survey tool administered by Press Ganey.

LESSONS LEARNED

- Organizational commitment and active engagement from the chief executive officer, leadership team, and board of trustees are essential for success.
- The relentless drumbeat of safety can never cease and must be incorporated in the daily vocabulary of all team members.
- Developing and sustaining a culture of safety is an ongoing process that requires constant monitoring, nurturing, and the commitment of every team member who works in the organization.

Using Secret Observers to Improve Hand Hygiene Compliance in a Nursing Facility

Henry J. Carter Nursing Facility, Manhattan

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Healthcare-associated infections (HAIs) caused by multi-drug resistant organisms (MDROs) are increasing worldwide, with United States hospitals alone accounting for about 1.7 million infections and more than 98,000 deaths each year, according to the U.S. Centers for Disease Control and Prevention (CDC). HAIs are a major cause of hospitalization in long-term care, with one to three million serious infections and as many as 380,000 deaths every year.

The presence of bacteria on the hands of healthcare workers is known to be positively correlated with nosocomial infections and improved hand hygiene (HH) practices effectively reduce transmission and/or HAIs due to MDROs. Levels of HH compliance (greater than 70%) have been associated with lower incidence rates of MDROs including Methicillin-resistant *Staphylococcus Aureus* (MRSA), Vancomycin-Resistant Enterococci (VRE) and Carbapenem-Resistant Enterobacteriaceae (CRE). However, little is known about HH compliance and incidence rate of MDROs in long-term care settings, according to the World Health Organization. The objective of this quality improvement project was to establish a secret observer program in a nursing facility to investigate how any improvement of HH compliance could affect the incidence of common MDROs. Possible cost savings following any reduction in MDRO infections was also investigated.

OUTCOMES ACHIEVED

- The HH compliance rate increased from 75% (first quarter 2014) to about 96% (first quarter 2015) during the implementation of the secret observer program.
- The combined infection rates of MRSA, VRE, and CRE decreased 53% from 1.09/1,000 resident days (second quarter 2014) to 0.51/1000 (first quarter 2015). Infection rates then decreased to zero in fourth quarter 2015.
- The infection rates of MRSA decreased 32% from 0.75/1000 resident days (second quarter 2014) to 0.51/1,000 (first quarter 2015). Infection rates of MRSA then decreased to zero in both third and fourth quarters of 2015.
- Reduction of infection rates by MRSA resulted in significant cost savings for the facility.

LESSONS LEARNED

- The use of the secret observer program to reduce infection rate by MDROs and related costs in a long-term care setting is achievable and effective.
- Full adherence to HH protocols requires a complete culture change that can only occur gradually over time.
- Additional studies are needed to explore changing in HH behaviors by staff with a greater focus on their accountability.

Adopting Universal Protocol in Diagnostic Radiology to Help Prevent Wrong Patient, Wrong Site, and Wrong Examination Events

Lincoln Medical Center, Bronx

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Because of the prevalence of patient misidentification in healthcare, The Joint Commission ranks accuracy of patient identification as the number one National Patient Safety Goal. Patient and procedure verification errors occur not only during surgery but also on non-surgical procedures such as in radiology. Failure to correctly identify patients during imaging studies can result in wrong patient, wrong procedure, wrong side, or wrong site events. This can lead to unnecessary risks, including overexposure to radiation, delay in diagnosis and treatment, and incorrect treatment.

Following an unusual cluster of patient identification error events in radiology procedures at Lincoln Medical Center, a detailed root cause analysis was initiated. In addition, a multidisciplinary team from administration, radiology, nursing, patient safety, clinical, and clerical staff conducted a failure mode effects analysis and identified vulnerabilities and failure points in the procedure verification process of all modalities. Adopting best practices utilized in interventional radiology, a new verification procedure that adapted the universal protocol was implemented.

Employing the Plan-Do-Study-Act performance improvement methodology, the verification process was re-engineered based upon the issues identified during this process. The main issue identified was that the errors occur mainly after interruption in the procedures. Therefore, all staff were educated to repeat the patient identification immediately after any interruption.

OUTCOMES ACHIEVED

- Since initiation of the new protocol in June 2014, Lincoln has not experienced any wrong patient, wrong site/side, or wrong exam events in diagnostic radiologic imaging, correlating to more than 250,000 imaging studies.
- This outcome was achieved with no significant impact on wait time for imaging procedures.

LESSONS LEARNED

- Interrupting procedures can lead to site, exam, or patient identification errors, even after initial verification was completed correctly, especially in high-volume, high-intensity work environments.
- Performance improvement plans often involve implementation of peers' best practices and implementing new and novel approaches to a problem. This project demonstrates how an existing best practice in another field in medicine, in this case the universal protocol used for interventional procedures, can be adapted for use in diagnostic imaging studies.
- These changes were completed without any impact on patient flow and have improved the overall culture of safety in the department.

Improving Outcomes Through a Nursing Peer Review Council

Mercy Hospital of Buffalo

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Nursing peer review at Mercy Hospital involves a council made up of staff registered nurses with a leadership facilitator. The council reviews individual nurse performance and overall nursing practice for the purpose of ensuring safe, high-quality care for all patients.

In June 2013 under the leadership of a director of nursing, the council structure was evaluated and changed. The council was reinvigorated with the development of a council charter and council processes that focused on being educational and not punitive. The council discusses cases, identifies whether the issue is a system issue or an individual practitioner issue, and determines a case rating.

The council agreed upon the process of sending up to two educational letters to nurses communicating that their documentation and practice had been reviewed and opportunities for improvement had been identified. Issues considered too serious to be addressed by a letter are referred to the nurse manager for follow-up. Compliment letters are also sent when documentation is noted to be outstanding.

System issues are discussed with the purpose of improving processes or are referred to other departments for action. As other departments observe the effectiveness of the review council in making positive practice changes, more case referrals are being sent for action. Initially, deficiencies in core measures were the largest source of referrals. The council has reviewed sequential compression device documentation, vaccine offering and administration, lack of documentation or notification of practitioners, and delays/omission of medication administration.

The infection control nurses have become an integral part of the peer review council and are a source of referrals addressing urinary tract infections, peripheral intravenous infections, and central line-associated blood stream infections. Quality oversight is provided by sending the meeting minutes to the quality committee.

OUTCOMES ACHIEVED

- The electronic medical record (EMR) documentation process was improved for application of sequential compression devices and for identification of risk factors for patients under age 65 who required pneumococcal vaccine offering.
- Core measure data improved.
- Changes were made to the EMR based on identified flow concerns.

LESSONS LEARNED

- Formalizing the peer review process empowers nurses to evaluate practices and raise standards.
- Having the right stakeholders at the table is key; representatives from the operating room, emergency department, and catheterization lab increase the understanding of other impacted departments' processes. Having nursing education, infection control, and information technology present helps in the development of system solutions.

Safety First Friday Rounds

Mohawk Valley Health System, Utica

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Mohawk Valley Health System is comprised of two not-for-profit hospitals in Central New York that affiliated in March 2014. As part of the affiliation, all departments and services were asked to review current practices for quality, efficiency, and value; bringing together like programs and services, adopting best practices for those areas where the process may differ and eliminating the services that did not meet the criteria. A team comprised of staff from both facilities met in September 2014 to determine the best practice for patient safety, including a rounding program for the new entity.

After identifying opportunities for improvement through the Agency for Healthcare Research and Quality *Culture of Safety Survey*, the organization adopted the National Quality Forum's Safe Practices as the framework for this program and developed a formal and regular process for patient safety rounds.

The goal of patient safety rounds is to increase identification of actual and potential patient safety problems with a rapid plan for correction, increase the interaction of leadership with staff and patients/visitors around patient safety and patient centered-care, and advance the system value of safety and excellence. This new program provides "just in time" education with important safety topics on a monthly basis. This rounding program also provides opportunities to solicit real-time input from patients and their families about safety in the hospitals, gives a voice to their concerns, and promotes immediate action for change.

Mandatory Safety First Friday rounds are conducted by leadership staff every other Friday, every month. One Friday is devoted to units and departments at one hospital campus and the alternate Friday focuses on the other acute care campus. All leaders participate in a two-hour timeframe each Friday that is set aside to focus on safety. A brief educational presentation is completed and then leaders are randomly assigned to teams to audit the environment of locations throughout the hospital and outpatient offices, using a checklist for concurrent recording of answers and observations. Broken equipment or needed repairs are identified and an assigned leader takes responsibility to ensure repairs are completed prior to the next scheduled round.

OUTCOMES ACHIEVED

- Appropriate identification of isolation patient equipment rose from 68.5% to 85.3%.
- Dating of multi-dose vials improved from 61.5% to 95.8%.
- Staff recognition of safety on units and departments increased.
- Staff and patient interaction with leaders was enhanced.

LESSONS LEARNED

- Staff are eager to share safety ideas and concerns.
- Families and patients welcome the opportunity to talk with the leaders.
- Scheduled rounds allow the organization to be survey-ready every day.

Improving Performance by Implementing Strategies Focused on Task Execution

Mount Sinai St. Luke's, Mount Sinai West, Mount Sinai Beth Israel, Manhattan

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This initiative seeks to create a cooperative high-reliability organization (CHRO) to help teams achieve greater effectiveness across more patients, using the same team and existing technology resources. It accomplishes this by micro-targeting tasks at risk for failure, based on a U.S. Air Force model for predicting and preventing task saturation (i.e., too much to do in too little time, and tasks are dropped as a result). This CHRO can ultimately support clinical integration networks more cost-effectively.

The opening stage of the initiative focused on “task execution” as proven by compliance in core measures and targeted congestive heart failure (CHF), pneumonia, heart attack, stroke, and venous thromboembolism. It will next expand to target sepsis and failure to rescue.

The project formed in an effort to reduce “checklist overload” from various initiatives, core measures, best practices, etc. It took effort to ensure buy-in from the stakeholders—in this case the staff providing direct patient care—and harnessing data to create worklists and alerts to identify and problem solve for tasks at risk for failure, helping ensure there is not overload of alerts sent to the care providers and their support teams.

OUTCOMES ACHIEVED

- Core measures improvements were sufficient to attain Joint Commission Top Performer status (2013), when neither hospital was on list prior to the initiative.
- Readmissions were reduced from 28% to a rate of 22% for CHF during 2013 at one of the hospitals.
- Checklist overload and alert fatigue were reduced in sepsis processes, which helped contribute to an overall reduction in hospital mortality from 19.6% (fourth quarter 2014) to 15.4% (third quarter 2015), compared to a statewide rate of 28%.

LESSONS LEARNED

- Training doctors and nurses for core measures or checklists has limits. Eventually a “wall” is hit where it is difficult to reach further improvements. Cognitive load balancing to reduce task saturation of individuals can lead to further significant improvements.
- The current approach to reliability typically requires more checklists to address new challenges or regulations, and then expects team members to “overachieve” to get them all done. This creates “checklist overload,” which leads to task saturation and more preventable mistakes. Thus, improving processes to identify tasks at risk for failure proactively reduces mistakes and significant failures of the team.
- Support teams must identify and intervene on these tasks at risk proactively to best help the frontline team and thus the patient.

Building a Culture of Quality and Safety

Olean General Hospital

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Olean General Hospital is committed to reducing patient harm events and improving quality and safety, and is creating a safety culture that fosters employee engagement and transparency. The journey began in 2013 and involved five distinct initiatives, each driven from the bottom up and focusing on a particular aspect of patient safety and the patient experience. The initial activity involved the drafting of a quality and safety culture statement that was developed with significant input from staff and was reflective of the hospital's patient safety commitment.

Next, the hospital introduced a safety champion program, which consisted of 60 employee volunteers who received special patient safety training. Their focus included the implementation, communication, and monitoring of the hospital's various safety initiatives. This program of direct employee engagement was consistent with one of the two basic tenets of the new safety culture.

Next, to foster greater awareness of patient harm events, the hospital began posting a harm score on the home page of the hospital's employee intranet site. The posted harm score is linked to detailed information by harm event category. Employee awareness and sensitivity to the fact that patient harm can and does occur was critical to efforts to prevent harm at the hospital. This initiative was consistent with efforts to underscore transparency, the second key attribute of the hospital's safety culture.

To empower employees with respect to their respective roles in improving patient safety, the hospital introduced "Stop the Line," a program used in the automotive industry. This program enables each employee to question and stop procedures that they believe pose a safety threat to patients. Finally, the engagement of all patients in promoting patient safety was encouraged through a "Patient Speak Up" program, an initiative that provides patients with a safety checklist to prompt patient questions to caregivers.

OUTCOMES ACHIEVED

- Sixty frontline staff members representing every hospital department were trained as safety champions to act as the "voice" and "face" of patient safety.
- All patient safety culture composite scores from the Agency for Healthcare Research and Quality Patient Safety Culture Survey from 2014 improved, with nine of the 12 composites scoring at or above the national average.

LESSONS LEARNED

- Initiatives are more successful if they are rooted in an appropriate culture. A focus on transparency and employee engagement as key safety culture attributes prompted significant improvement in employees' perceptions of the safety culture.
- Changing an established culture of job performance can be best achieved by consciously thinking of quality and safety as every employee's primary role and responsibility.
- Creating a palpable safety culture in a hospital of 900 employees is an ongoing effort. Its sustenance requires perseverance, creativity, and a willingness to engage staff at every level.

It Takes Two: Two Nurses, One Patient for Successful Hand-Off Communication

Oswego Health

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Prevention of central line-associated blood stream infections (CLABSIs) is enhanced by a multidisciplinary team approach and strict adherence to central line bundle insertion and maintenance guidelines. The organization has not had a CLABSI in the intensive care unit (ICU) in three years, so adherence to the bundle is evident in successful patient outcomes. The issue the unit experienced was documentation consistency.

The ICU staff recognized that the failure to consistently document shift-to-shift regarding site condition, external catheter length, and blood return from ports resulted in a failure to identify the catheter migration and subsequent extravasation. The ICU staff became determined to fix the problem and decided to include central line documentation as part of the unit's quality assurance plan initiative (QAPI) monitor, who evaluated the consistency and quality of documentation from shift to shift. This helped the staff identify issues and develop interventions for process improvement. The QAPI monitor was the beginning of the journey in identifying issues and developing the intervention that successfully solved this patient safety issue.

Several different approaches were explored with varying degrees of success. After more meetings, more brainstorming, and more education, the ICU staff realized that they had not yet addressed hand-off communication, which can ensure a smooth, safe transition of care and help mitigate patient safety risks. The staff suggested that nursing be required to sign off the central line documentation at shift change together, thus creating a successful solution to consistent documentation. Nursing staff hand-off takes place at the patient bedside with both nurses assessing the central line insertion site. The nurses now discuss and resolve discrepancies at the bedside, preventing patient harm and ensuring a culture of safety. The results of the QAPI monitor are now consistently 100% compliant.

OUTCOMES ACHIEVED

- Compliance in QAPI monitoring ensured consistent documentation from shift to shift.
- Development of a QAPI data collection tool used in all areas of the hospital makes data collection easier and more efficient.
- Situation, Background, Assessment, and Recommendation (SBAR) communication improved.
- Patient safety and quality of care improved.

LESSONS LEARNED

- A team creates a problem and a team resolves the problem. All of the ICU team was invested in the success of this initiative because they created the solution.
- Hand-off communication can make or break patient quality.
- Persistence pays off. Multiple solutions resulted in multiple failures and it was important to keep trying and looking for different solutions until one was found that was successful.

Improve Patient Engagement by Active Rounding of Leadership

St. Charles Hospital, Port Jefferson

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The Improve Patient Engagement by Active Rounding of Leadership (i-PEARL) program was established in July 2010 by St. Charles Hospital as an initiative to proactively engage the leadership team with patients by listening to, communicating with, and supporting them and their family members during their hospital stay. The program highlights the hospital's commitment to having the patient at the center of the organizational strategy by coordinating care around the patient's needs. This effort reflects the true mission of St. Charles Hospital and complements its overall advancement toward zero harm and improved patient satisfaction.

On a daily basis, each i-PEARL administrator is assigned a patient or two (depending on the census) to visit that day. Assigned patients are seen within 24 hours of assignment with follow-up visits scheduled as necessary. I-PEARL administrators are responsible for introducing themselves to their patients, explaining their role, asking brief targeted questions, and resolving any issues that are identified.

Monthly i-PEARL huddle meetings provide an opportunity for i-PEARL administrators to report to the committee about their experiences during rounding visits, identify trends and patterns, and discuss actions taken to resolve issues. This initiative is a classic example of an interdisciplinary effort to improve patient satisfaction.

OUTCOMES ACHIEVED

- Since implementation of the program in July 2010, there has been a dramatic decline in the number of complaints and a corresponding increase in number of compliments from patients.
- With 82% of patients admitted to the hospital visited in the last year under this program, the leadership team has been able to promote patient safety by advocating for a safe physical environment, appropriate use of call bells, and timely response to all patient needs.
- Over the last year, with the implementation of rounding with “words that work,” the hospital has seen a 6.1% improvement in its Centers for Medicare and Medicaid Services (CMS) “Overall Hospital Rating” patient satisfaction score.

LESSONS LEARNED

- This program has been an educational experience for all involved. The hospital believes that proactive engagement with all patients has led to improved satisfaction scores and a lower number of complaints/grievances.
- The members of the i-PEARL team act as advocates for their patients during their hospital stay and always hand their business cards to assigned patients. This practice empowers patients to speak up, knowing that a member of the leadership team is always there to listen.
- The i-PEARL program has resulted in a culture shift that focuses on the patient—mind, body, spirit—with the leadership team visibly demonstrating their commitment to a culture of safety and accountability. By prioritizing a patient-centered philosophy, a new culture of open communication and improved patient experience and satisfaction is evident among staff and patients.

CHAPTER 3

IMPROVEMENTS ACROSS THE CARE CONTINUUM

HANYS' PINNACLE AWARD
FOR QUALITY AND
PATIENT SAFETY 2016

Reducing Anticoagulation-Related Adverse Events, Hospitalizations, and Emergency Room Visits Using a Pharmacist-Managed Anticoagulation Management Service

FoxCare Anticoagulation Management Services/Bassett Healthcare, Oneonta

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This integrated rural healthcare network houses a nationally recognized award-winning anticoagulation management service (AMS) at the main medical center, the product of an exceptional level of care provided by the primary pharmacist clinician and support staff.

Based upon the success of the longstanding primary AMS, a secondary outreach AMS site was opened in 2013, a novel approach to expansion of the main service across a geographically distant and rural area. The outreach AMS modeled the workflow of the primary AMS, and was further enhanced via the innovative use of a registered nurse (RN) protocol for warfarin management under the supervision of the pharmacist clinician. The RN manages warfarin therapy as outlined in a protocol specifically developed for this practice model, which has allowed the pharmacist clinician to devote more time to the higher risk and more difficult-to-control patients, ultimately enabling improved outcomes.

The outreach AMS has grown significantly since its inception, increasing the number of patients served more than 100-fold. Throughout the growth process, the outreach AMS has maintained anticoagulation control well above the national average. Similar to the primary AMS, the outreach AMS has reduced adverse event-related hospitalizations and emergency room visits by 75% and 66%, respectively, compared to national rates. The benefits to the patients and healthcare system alike are well established, and support the mission of improving the healthcare of the entire community via better integration throughout the rural network.

OUTCOMES ACHIEVED

- Access for high-risk patients to receive best practice quality of care has been enhanced through specialty monitoring, evaluation, and management.
- Anticoagulation-related adverse event hospitalizations have been reduced by 75% and emergency room visits by 66%, compared to national standards.
- In addition to being financially cost-neutral, the service avoids eight major adverse drug events (e.g., stroke, major hemorrhage, or death) and reduces healthcare expenditures by about \$120,000 annually, as based upon nationally-validated methodology, compared to usual medical care not provided by the AMS.

LESSONS LEARNED

- An interdisciplinary team consisting of pharmacist clinicians and advanced practice nurses, championed by a physician medical director, allows for cost-effective utilization of available resources to optimize anticoagulation management and global improvement of the healthcare system.
- Provider satisfaction and patient satisfaction improved, compared to previous anticoagulation management methods.
- Utilization of all members of the healthcare team leads to improved efficiency and management workflow.

Improving Quality, Outcomes, and Efficiencies for End-Stage Renal Disease Patients Using a “Right Fit Program” Strategy

Bassett Medical Center and Bassett Medical Group Outpatient Dialysis, Cooperstown

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The management and care for end-stage renal disease (ESRD) patients is often driven by the divergent and simultaneous requirements from Medicare’s ESRD Quality Improvement Program and Prospective Payment System, presenting challenges to clinical teams that are focused on improving patient care and outcomes.

At the request of hospital leadership, a full assessment of the Network Dialysis Program was conducted in the last quarter of 2014. The interdisciplinary team identified that the artificial device selection and size mix were causative variables resulting in higher incidence of blood loss through contact clotting within these devices during treatments, contributing to unfavorable outcomes. Compensation for the cumulative loss of blood cells during dialysis resulted in higher dosing of medications to stabilize this already compromised patient population, specifically in anemia markers, albumen, and overall nutritional levels.

Incorporation of the “Right Fit” strategy at the beginning of 2015 included a complete conversion to dialyzers with smaller surface area and increased clearance of toxin efficiency, blood lines with reduced volume capacity, in addition to changes in the clinical approach to fluid management. The result was outstanding clinical and quality of life improvements for dialysis patients.

OUTCOMES ACHIEVED

All outcome data compare 2015 to 2014:

- mortality decreased 19%;
- hospitalizations decreased 17% in general and there was a 25% improvement in readmissions within 30 days for ESRD related diagnoses;
- fluid management improved 40% as indicated by the Medicare targets;
- serum albumin improved 173%; and
- use of erythrocyte stimulating agents (ESAs) was reduced 30%, resulting in 15 million less units of this medication used across the network dialysis programs.

LESSONS LEARNED

- The importance of quality assurance and performance improvement is a continuous evolution of care among interdisciplinary teams.
- The “bigger is better” theory to dialyzer selection can introduce variables to clinical dialysis practice that result in less-than-optimal patient outcomes.
- By changing a few variables, in this case disposable supplies and fluid management, patient outcomes can improve beyond expectations, while positively affecting many areas of care management for ESRD patients.

REACT™—An Innovative Solution to the Multifaceted Problem of Medication Management in the Home Setting

Catholic Home Care, Farmingdale

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Medication discrepancies frequently occur during the transition between hospital and home. To address this issue, Catholic Home Care adopted REACT™ (reconcile, engage, assess, coach, and teach-back) as a standardized medication management process. It focuses on patient and caregiver engagement in medication management using coaching strategies and teach-back to ensure an accurate medication list and an understanding of the purpose, administration, and side effects of physician-ordered medications.

The REACT™ process was developed after a review of evidence-based, peer-reviewed literature, as well as professional resources available from The Joint Commission, IPRO, and the Agency for Healthcare Research and Quality. Transitional care models developed by Eric Coleman, M.D., and Mary Naylor, Ph.D., R.N., were also incorporated into the program.

OUTCOMES ACHIEVED

- Catholic Home Care realized a steady improvement in medication management and a decreased risk for complications associated with adverse drug events (ADEs) as evidenced by 84% compliance in accurate documentation of current medications in fourth quarter of 2015, compared with 60% in first quarter of 2015.
- Communication regarding medications between patients, caregivers, home care staff, and physicians was improved through use of a standardized tool called “One Source of Truth.”
- Patient/caregiver involvement in the medication management process improved self-management skills and adherence to the plan of care developed by the interdisciplinary team through the patient-centered model.
- Patient satisfaction improved, as evidenced by a higher percentage of patients who indicated that clinicians discussed the purpose of their medications with them, according to the Home Health Consumer Assessment of Healthcare Providers and Systems survey.

LESSONS LEARNED

- Catholic Home Care needed a more standardized evidence-based medication management process to reduce potential risk from ADEs, including re-hospitalization.
- Patient/caregiver engagement in the medication management process improves self-management skills, increases adherence, and improves satisfaction with care, therefore improving overall patient outcomes.
- User-friendly tools facilitated patient engagement and enhanced communication between patients and the healthcare team.
- Involvement of key stakeholders including patients, caregivers, clinicians, and agency leadership is critical to the success of REACT™.

Improving Care of Patients with Depression in Primary Care: The Art of Collaboration, Communication, Compassion, and Commitment

Coney Island Hospital, Brooklyn

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Many of Coney Island Hospital's patients are immigrants with complex social issues and co-morbid conditions, including undiagnosed/untreated depression. Since primary care providers may be the first contact for patients, it is imperative that they do not miss an opportunity to screen for depression and treat accordingly. The clinical and administrative staff focus their efforts on continuously improving proactive, multidisciplinary care, and this population represented an opportunity to review care processes.

The hospital began this initiative by forming a collaborative care team situated in the primary care office practice, comprised of a psychiatrist, senior internist, and collaborative care nurse. The goal was to enhance the organization's ability to have a positive impact on the health management and safety of patients and to increase access to services for this challenging population.

The Collaborative Care Program, by definition, is a team-based integrated approach to improve outcomes in primary care for patients with depression, diabetes, hypertension, hyperlipidemia, and obesity. This includes comprehensive screening using the Patient Health Questionnaire-9 (PHQ-9) and evidence-based treatment such as motivational interviewing, behavioral activation, problem-solving interventions, brief action planning, and pharmacological therapy.

The organization faced significant challenges associated with language barriers, diverse cultural backgrounds, missed potential for referrals, unfamiliarity with the collaborative care process, missed diagnosis of depression, and loss of enrolled patients to follow-up. Despite this, the team persevered to meet the needs of this vulnerable population.

OUTCOMES ACHIEVED

Coney Island Hospital has enrolled 658 patients, of which 263 have graduated and maintained a resilient lifestyle.

The results of the project are as follows:

- increased identification of patients with depression;
- enhanced understanding of depression as an inevitable disease that is treatable;
- increased percent of depression diagnosis with PHQ-9 scores greater than 10;
- increased referrals and enrollment in the Collaborative Care Program;
- achievement of target clinical outcomes of patients with depression and other co-morbidities; and
- improved patient satisfaction.

LESSONS LEARNED

- Empathy, compassion, and communication are the foundation of patient care.
- It is critical to treat the whole patient and not an isolated diagnosis.
- Multiple factors impact patient outcomes, including the elusive interconnection of the body and the mind.

Transitional Care Program

Cortland Regional Medical Center

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The Transitional Care Program formally began at the end of November 2014 with the goal of reducing readmissions for patients with congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD) within 30 days of their discharge. The transitional care nurse developed the program based largely on concepts and tools associated with well-known programs such as the Care Transitions Intervention™ and Project RED (Re-Engineered Discharge).

Cortland Regional Medical Center's registered nurse transitions coach meets with patients in the hospital and calls them after discharge at least weekly for 30 days; patients may also call the transitions coach during their first 30 days after discharge. The coach facilitates interdisciplinary collaboration and care continuity following hospital discharge, and encourages patients and their caregivers to play an active and informed role in care plan execution. The coach teaches patients and their caregivers to identify specific warning signs that indicate that the patient's condition is getting worse and give direction regarding how to respond and who to call if these occur.

For the initial phase, Cortland Regional Medical Center chose to concentrate its efforts and data collection on the CHF population. Cortland enlisted the help of the area cardiology practice, which provides a cardiology consultation for CHF patients while they are in the hospital and appointments for follow-up care scheduled prior to discharge. The cardiology office staff partner with the transitions coach and offer early interventions in the office to prevent an emergency department visit and potential admission. They reinforce the importance of recognizing the signs and symptoms of early CHF.

The long-term home healthcare nurses visit each patient in his or her home within 72 hours after discharge to provide medication reconciliation, verify that the patient has follow-up appointments scheduled and transportation to the appointments, and assist the patient with completion of the personal health record.

OUTCOMES ACHIEVED

- More than 460 patients have been offered participation in the program; 86% of those accepted.
- Over the course of the year, 30-day hospital readmissions for CHF patients decreased to 14.3%.
- The 30-day readmission rate for the CHF patients in the program was reduced from 50% to 12%.

LESSONS LEARNED

- Early interventions to prevent emergency department visits/readmissions from cardiology care were vital.
- The registered nurse home visit within 72 hours of discharge can address four core issues: medication reconciliation, warning signs for CHF, medical care follow-up, and completion and utilization of a personal health record.
- Collaboration with nurses in the hospital is vital. The nurses lay the groundwork for the transition: they focus on disease-specific education during the stay and at discharge; and they teach about medication action and side-effects with the patient and the caregiver/person who will actually be managing the medications at home.
- Communication among all team members is crucial to a successful transition.
- Partnering with community agencies with this small population allowed Cortland to develop communication strategies that will continue to work when the program is expanded.

Improving Functional Outcomes for Sub-Acute Rehabilitation Patients: Patient Outcomes, Clinical Quality, and Reducing Overall Cost to the System by Avoiding Skilled Nursing Home Placements

Ellenville Regional Hospital

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Swing bed care is inpatient sub-acute rehabilitation care performed at Critical Access Hospitals (CAHs). Currently, there is no standard system in use to measure functional outcomes for these patients. In 2013, Ellenville Regional Hospital determined the need to be able to quantify patients' functional improvements from admission to discharge and, after some research, implemented the Barthel's Index.

Ellenville Regional Hospital chose to score each swing bed patient upon admission and discharge. The Barthel's Index enabled the hospital to look at ten specific self-care activities of daily living. These included feeding, bathing, grooming, dressing, bowels, bladder, toilet use, transfers (bed to chair and back), mobility (on level surfaces), and stairs. The hospital collected data from June 2013 through December 2015 and divided swing bed diagnoses into three categories: orthopedic, neurological, and deconditioned. The hospital implemented weekly physical therapy/occupational therapy re-evaluations, assigned two designated physical therapist assistants to the unit, and trained the physical therapy staff in using Standardized Functional Assessment tools, such as "Timed Up and Go" and "Gait Velocity."

OUTCOMES ACHIEVED

- There was a 14% increase in orthopedic patients who returned to their prior level of residence from 2013 to 2015.
- The Barthel's Index improved 16% from admission to discharge from 2013 to 2015 for all three categories.
- Interdisciplinary teamwork improved by using the Barthel's Index.
- Patient safety improved and there was a potential decrease in readmissions by using the Barthel's classification in family meetings to assist in objectively quantifying how much additional care will be required for the patient to return home to ensure the safest discharge plan.

LESSONS LEARNED

- By implementing the Barthel's Index at admission and discharge with the swing bed population, the facility had objective, quantifiable data with improvement in functional independence. This had a direct positive effect on safe discharges.
- By delegating certain domains of the Barthel's Index to the specialized discipline, the organization created a stronger multidisciplinary approach. The functional domains are discussed at weekly interdisciplinary care plan meetings, which improved teamwork and patient outcomes.
- Utilizing the Barthel's classification system significantly enhanced education of families and patients to ensure a safe discharge, ideally, to the patient's prior level of residence, or to a skilled nursing facility. This system significantly decreases patient harm by ensuring enough care will be provided when returning home.

Reduction of Acute Care Hospitalizations through Advance Care Planning

Good Samaritan Nursing Home, Sayville

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Good Samaritan Nursing Home became part of the New York-Reducing Avoidable Hospitalizations (NYRAH) Program in October 2012. As part of the program, facility staff were educated regarding the Interventions to Reduce Acute Care Transfers (INTERACT) program, which includes multiple tools for assessment, communication, advanced directives, and care planning. During the INTERACT education process, the facility reviewed its statistical data regarding advanced directives and advanced care planning approaches and recognized the need for improvement.

Before implementing the project, the facility offered a “comfort care” approach for residents nearing end of life; which was initiated when a significant decline in the residents’ condition was identified. The facility also offered hospice care, initiated during the very end stages of the resident’s life. There was an evident need for pre-planning and identifying resident and family wishes earlier to enhance the resident’s level of comfort and quality of life as he or she progressed to the end stages of the chronic disease process.

As part of the education program, the facility sent nursing and clinical support staff for training to obtain certification in palliative care. The training was well received by all staff. Care management and comprehensive care planning began to transition in 2013 to incorporate palliative care discussions with long-term care residents and families during quarterly meetings. A formalized policy and physician order set was developed to guide care plan meetings with the family and resident. These meetings are now proactive and provide education, information regarding prognosis, and options for care management for the resident.

These interventions transitioned the culture of the facility and enhanced not only the quality of life for the resident, but also support for the families and loved ones. Residents now remain comfortable in their own surroundings and the trauma of an unnecessary transfer and disorientation in an unfamiliar environment is avoided.

OUTCOMES ACHIEVED

- The facility effected a gradual reduction of resident transfers and hospital readmissions.
- The facility’s culture transformed to include palliative approaches to care and support of each individual resident’s quality of life.
- Communication with facility medical practitioners and resident families improved.
- There is increased acceptance of advanced directives and advance care planning.

LESSONS LEARNED

- Communication and relationship development with residents and families regarding prognosis is critical in encouraging them to decide how they would like to approach the end of their life.
- Physical, emotional, and spiritual support enhances quality of life.
- The culture of a facility can be changed and enhanced through continued educational opportunities, supportive intervention, and leadership direction and buy-in.

A Journey Through Health Home Implementation

Samaritan Hospital, Troy

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Samaritan Hospital participated as the lead Health Home in a cross-county, multi-agency platform for care coordination across medical, behavioral, and social services. Health homes are part of the larger effort to transform healthcare, leverage population health approaches, and simultaneously address cost reduction and improve quality.

Samaritan Hospital's unique approach to this model has had significant success. The implementation began with efforts to build a capable and properly resourced team to govern and manage operations. The approach embeds the Health Home within a behavioral health continuum of care. Significant effort was then placed on identifying gaps in the service system and developing network adequacy across providers and provider types serving the population.

The Health Home brought together agencies with specialties in HIV, housing, domestic violence, brain injury, mental health, substance abuse, and primary care as the downstream provider agencies. This approach allows Samaritan to match individual needs with the appropriate care management agency. The implementation included the development of a cross-county, multi-agency steering committee charged with shared decision making. This required and promoted the cooperation and collaboration necessary for the model to be effective. This initiative's success was further enhanced by the support and cooperation of local government units.

Much of the early success of this initiative has been the infrastructure development, the partnerships forged, and the development of an effective model. The facility has begun to see quality and cost outcomes in line with its goals.

OUTCOMES ACHIEVED

- A ten-agency care management team was developed to serve the cross-county needs of high-cost, high-utilizing individuals with chronic conditions.
- More than 40 network partners were engaged across healthcare and social services to ensure adequate services for Health Home recipients.
- The program demonstrated substantial growth, reaching 5,079 people in 2014 and 8,936 in 2015 (a 175% increase).
- Outreach increased by 67% in the two-year period and the number of enrolled members doubled.
- The conversion rate of 22% exceeds statewide averages.

LESSONS LEARNED

- Development of a model that brings together varied expertise allowed Samaritan to find care managers to best suit individual client needs.
- While statewide data demonstrates trending down in emergency room utilization and increased primary care usage, it is too early in the model to identify how significant outcomes could be.
- The time invested in planning the implementation, including the shared style of decision making, created strong inter-agency relationships that will positively impact the quality of service delivery.

Decreasing Patient Readmissions with Discharge Transitional Care Coaches

White Plains Hospital

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Many patients leave the hospital scared, vulnerable, and uncertain about their next steps. In some cases, instructions are reviewed just prior to discharge while the patient is feeling poorly or under the influence of medication and may be too nervous or sick to ask questions.

To be patient-centered, a facility must dedicate time and attention to the patients' needs. Discharge follow-up calls can improve compliance and, ultimately, clinical outcomes. The first 24 to 48 hours after discharge is when most patients have questions and need reassurance, advice, and reinforcement of the information provided. Post-discharge patient call programs are usually administered by third-party companies that do not have a direct connection with the hospital or its patients.

In April 2014, White Plains Hospital decided to develop a post-discharge call department. The Discharge Call Center (DCC) is comprised of clinical nurses devoted only to conducting post-discharge calls. As the program developed, it was noted that the nurses were doing more than just checking in on the patient and seeing how their stay was. The nurses were reviewing discharge instructions, reviewing and providing patients with medication education, and calling doctor offices if interventions were needed. The nurses were bridging the gap between hospital and home. The nurses decided that they could ask more disease-specific questions in an effort to prevent the patient from coming back into the hospital.

To meet this patient need, the nurses in the DCC created “discharge transitional care coaches” who helped to bridge the gap between hospital clinicians and patients. Discharge transitional care coaches connect with patients after discharge to clinically assess and work with patients to prevent readmissions. The DCC allowed for a centralized process that created positions for nurses to be away from the bedside and have dedicated time for supporting patients post-discharge.

OUTCOMES ACHIEVED

- Congestive heart failure (CHF) readmissions were reduced.
- Acute myocardial infarction (AMI) readmissions decreased.

LESSONS LEARNED

- Providing clinical support to patients in the 24 to 48 hours after discharge aids in reducing readmissions.
- To reduce readmissions, discharge telephone calls require more than assessing the patient experience and stay at the hospital.
- Serial phone calls played an important role by building relationships with the CHF patients to activate their engagement in wellness and health promotion.

CHAPTER 4

IMPROVING ORGANIZATIONAL EFFICIENCIES

HANYS' PINNACLE AWARD
FOR QUALITY AND
PATIENT SAFETY 2016

Implementation of a Pivot Nurse to Improve Emergency Department Triage Times

Kenmore Mercy Hospital/Catholic Health

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Kenmore Mercy Hospital assembled an interdepartmental group consisting of physicians, emergency department (ED) nursing, administration, quality and patient safety, security, and patient access to improve ED triage times. The group determined that a reasonable time for an Emergency Severity Index (ESI) level to be assigned was within 20 minutes or less of arrival for ambulatory patients. The goal of the project was to have 95% or greater compliance with an ESI level assignment within 20 minutes of arrival for ambulatory patients.

The team developed current state value stream maps identifying variations in the process due to different shifts and staffing patterns. Based on the reviews, a decision was made to develop a new pivot registered nurse (RN) assignment to be located in the ED waiting room. The triage process was broken down into two steps with the pivot RN completing the ESI process and the triage RN completing the second part. This new shortened process resulted in more timely identification of the ESI level while having an RN visualize ED patients in the waiting room to assure their safety.

The group worked together to determine how to change the staffing patterns to achieve the pivot RN assignment. The team decided to move the resource RN from the ED proper on shifts when there was one, and to add nursing hours to the staffing grid to cover other shifts. A Situation, Background, Assessment, and Recommendation (SBAR) was submitted to senior administration indicating the need for more resources, and it was approved. The role of the pivot RN was developed and competencies were completed. Adjustments were made to other workloads within the ED with the removal of the resource RN so that assignments would be appropriate. Education was also given to security regarding patient access, as their roles in the ED waiting room had been altered.

Initially there was daily monitoring and communication to the staff, but once well-established, it became weekly, then monthly. The project exceeded the stated goal. The success of the project was celebrated with the associates and shared with senior leadership and the other emergency departments in the system.

OUTCOMES ACHIEVED

- Since implementation of the project, there has been a monthly compliance rate of 97% or greater for patients being assigned an ESI level within 20 minutes.
- The average time from door to ESI for ambulatory patients has decreased from 18.3 minutes to 6.6 minutes.
- The patient experience question for timely ED check-in improved from 57.45% to 64.35%.

LESSONS LEARNED

- Make sure there is enough time for education of all ED staff, including the providers prior to the implementation of the new process.
- Address privacy issues early, when clinical staff are in close proximity to the waiting room interacting with patients.
- Monitor all stages of patient flow to assure that there is not an unanticipated downstream impact on quality.

Emergency Department Throughput Initiative

Mount St. Mary's Hospital and Health Center, Lewiston

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Mount St. Mary's Hospital developed its emergency department (ED) throughput initiative in response to patient satisfaction surveys and the release of safety initiatives from The Joint Commission to decrease wait times in EDs and thus increase patient safety. The initial focus is on moving patients from the point of entry to meeting with the medical provider as quickly as possible. Another focus is on increasing communication with the patient and his/her family members to keep them informed during their visits and to move them through the system safely. The initiative involves the constant transfer of information between frontline nursing staff, managers, and administrative staff to keep the process flowing smoothly. Consultants were brought in on two occasions to work with administrative personnel, medical and provider staff, nursing, nurse attendants, volunteer staff, and transport personnel, among many other ancillary staff members, to hardwire the flow process. This process aligns with clinical priorities to provide the best possible care while being effective and promoting a safe, satisfactory experience for the patient. This project engaged the chief executive officer, vice president of nursing, and countless members of the staff to gain support, belief in the process, and momentum to move ahead and succeed.

The initiative breaks new ground in an organization and department that believed “we have always done it this way.” Department staff had to use the available bed structure and department layout, which posed unique challenges to meeting the goals. The appropriate fast track, results waiting, pivot/triage areas, volunteer capabilities etc., were all challenges to creating appropriate patient care areas to ensure the project would succeed. A major part of the project was to roll out the split flow design to allow for vertical and horizontal level three patients based on the Emergency Severity Index model. Vertical level three patients can be treated and released from the fast track area and not use a valuable patient care area in the main ED.

OUTCOMES ACHIEVED

- ED patient satisfaction scores improved.
- Patients who “left before examined” and “left before triage” decreased.
- Collaboration with ancillary departments, staff and medical provider job satisfaction, and staff “buy in” to leadership initiatives improved.
- Patient outcomes improved.
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores improved for admitted patients.

LESSONS LEARNED

- A pod system allows nurses to take “ownership” of patients and their outcomes.
- Streamlining services has a dramatic impact on decreasing wait times.
- Creating change in an established ED requires substantial time investment and a culture change in the organization from the chief executive to the frontline staff.

Improving On-Time First Case Starts in the Operating Room

Northern Westchester Hospital, Mount Kisco

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Operating rooms (ORs) are expensive to run. Hospitals strive to be efficient, but one of the many challenges hospitals face is starting surgical procedures on time. Late first case start times have a cascading effect, resulting in subsequent delays, additional staffing costs, potential risk or safety issues, surgeon dissatisfaction, and patient complaints.

To improve a 26% first case on-time start rate, Northern Westchester Hospital commissioned an inter-professional team of surgeons, anesthesiologists, and OR and ambulatory surgical unit (ASC) nursing staff and orderlies to redesign the OR flow to improve efficiency. The team defined what “on-time” meant for each step in the patient’s flow. Internal data were collected to identify the barriers to the first case starting on time.

Using the Plan, Do, Study, Act (PDSA) approach, the redesign started with one service line, specific barriers to on-time starts were identified (i.e., equipment, environment, staff), and solutions developed to improve the flow. The first PDSA cycle was completed in one service line to evaluate and refine the new flow process. Additional PDSA cycles were completed as the new flow process rolled out through each of the surgical services. After testing the flow in all of the service lines, the new process was documented in a flow map to ensure consistency.

A forecast meeting was initiated to ensure that the patient and room were on time the day before and a morning huddle was initiated to provide real-time evaluation of that day’s potential barriers to support adherence to the process. Daily feedback about on-time starts was provided to each case team and posted in the OR lounges with team member names to increase awareness of successes and areas for improvement. After successful rollout to all surgical services and an increase in on-time starts to 60%, the facility celebrated with hospital-wide recognition and a luncheon for the entire surgical services team.

OUTCOMES ACHIEVED

- On-time first cases increased from 26% to 60%.
- Communication between team members improved.

LESSONS LEARNED

- An inter-professional team of key stakeholders (i.e., physicians, nurses, orderlies, patients, administration) facilitates meaningful operational redesign that improves the buy-in for change.
- A PDSA cycle was used with one service line, identifying implementation obstacles that were not identified during the planning phase. Getting the process right with one service line facilitated a more effective implementation for all surgical services.
- When designing an organizational improvement plan, building in consistent, real-time process evaluation and feedback builds accountability, and hard-wires long-term organizational change and sustained outcomes.

Patient Throughput and Capacity Management in a Five-Hospital Health System

Rochester Regional Health

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In the early 2000s, the closing of two urban hospitals in the Rochester area created an inpatient “bed crunch” from which the region has yet to fully recover. This reduction in acute care capacity was aggravated by the inevitable increase in service demand by the aging baby-boomer generation and, in turn, by the increase in insured people due to the passage of the Affordable Care Act in 2010. Consequently, many facilities in the region have had to deal with various overcapacity issues. But when a new health system was formed in 2014—with five hospitals and an integrated array of physician practices, long-term care, and skilled nursing facilities—an opportunity for unprecedented collaboration was realized.

A two-part process was developed for across-the-board implementation. First, a system-wide transfer center was established to address capacity management issues that could easily arise from one hospital to another. Experienced teams at each hospital interact with the transfer center around the clock to ensure a centralized awareness of each hospital's census from day to day; as referrers contact the transfer center, incoming patients can be redirected to whichever hospital within the system can provide optimal care without unnecessary overcrowding or delays.

At the same time, patient throughput is being optimized through continuing efforts to provide patients with the necessary level of care corresponding to their conditions. By increasing staffing and clinical capabilities at the long-term and skilled nursing facilities within the system, this throughput initiative ensured that patients no longer needing treatment in an acute care facility could still receive high-quality care in a non-acute setting, with system-level oversight maintained by the same clinical care teams.

OUTCOMES ACHIEVED

- Chronic overcapacity at the health system's largest hospital has decreased by sharing the patient load throughout the system, without sacrificing quality or consistency of patient care.
- There are now shorter waiting periods between a patient entering the emergency department (ED) and receiving an inpatient bed assignment, and decreased average inpatient lengths of stay.
- Emergency department boarding times decreased more than 30% at the system's busiest hospital between January 2015 and January 2016.

LESSONS LEARNED

- Leveraging system-wide solutions to these identified challenges required strong collaboration between system administrators, hospital presidents, and physician leaders.
- Each hospital came to the new system with its own culture and history, and with its own lexicon—breaking down silos to find shared terms and standards was essential in establishing a high-functioning communications model.
- Considering the perspective of the community—which had yet to fully grasp the potential of this new integrated five-hospital system—inspired more aggressive targeted outreach efforts among referrers, emergency medical services teams, and other key segments.

Improving Emergency Department Throughput and Patient Experience with Modified Lean Methodology

St. Joseph Hospital, Bethpage

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In an effort to improve patient satisfaction, decrease waiting times, improve clinical care, and decrease lost revenue from patients leaving without treatment, several technological, managerial, and communicative methods were adapted to form the crux of St. Joseph Hospital's emergency department (ED) throughput project.

For this project, St. Joseph's adopted concepts from Lean and the Stanford Operating System (SOS) to focus on improving:

- overall ED length of stay;
- time of arrival to time of roomed in the ED (door to roomed);
- time of arrival to time of assessed by ED provider (door to doctor);
- time of arrival to time of discharged (door to discharged);
- time of admission orders written to time of exit from ED (LOC to ED departure);
- rate of patients who leave without medical treatment (LWBS)
- rate of patients who leave against the providers advice;
- rate of patients who return to the ED within 72 hours of ED discharge; and
- patient satisfaction—ED Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys.

During this time, the hospital also experienced a 1,075 patient increase over the previous year.

OUTCOMES ACHIEVED

Despite an increase in volume, the hospital was able to achieve the following outcomes in 2015 while remaining cost-neutral:

- length of stay decreased 10.9% for “treat and release” patients;
- length of stay decreased 14.7% for patients to be admitted to the hospital;
- door to roomed time improved 33.6%;
- door to doctor time improved 45.9%;
- LOC to ED departure time improved 15.7%;
- patients who left the ED against medical advice decreased 26.3%;
- LWBS decreased 26.3%;
- patients who returned to the ED within 72 hours of ED discharge decreased 67.5%; and
- improvement in all 15 domains of the ED-CAHPS patient satisfaction survey.

LESSONS LEARNED

- ED throughput is not isolated to the ED; it requires the facility to act as a whole.
- Patient flow should be managed by a process, rather than a person.
- Active management and communication of patient needs to staff at all levels is required for the cultural changes necessary to having a meaningful impact.

Universal Bed Concept

The University of Vermont Health Network—Champlain Valley Physicians Hospital,
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The “universal bed concept” is an initiative to decrease patient transfers within a facility. This concept is currently in use on the progressive care unit at Champlain Valley Physicians Hospital. As medically complex patients are admitted to this unit, they remain throughout their stay, rather than transferring to a medical-surgical unit when they become more stable. The intended length of stay is five days. The goal is to admit, care for, and discharge patients from one unit, rather than moving them all over the facility.

As a result, patients experience:

- decreased transfers and hand-offs of care;
- decreased incidence of lost belongings;
- increased patient satisfaction;
- increased safety; and
- increased efficiency.

OUTCOMES ACHIEVED

- Transfers have decreased.
- Responses to the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey question that asks patients to rate the hospital on a 1-10 scale improved from a baseline of 66% in 2013 to 74% in 2015.
- Efficiency has increased.

LESSONS LEARNED

- Identifying a targeted length of stay allowed for more appropriate transfers.
- Revision of admission and discharge criteria may be necessary to ensure that the right patient is placed in the right bed.

Supporting Patient Outcomes Through a Redesign of Adult Emergency Response Services

Strong Memorial Hospital/University of Rochester Medicine

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As part of an ongoing effort to improve patient safety, Strong Memorial Hospital/University of Rochester Medicine began an initiative to review the current adult emergency response system. Based upon initial evaluation, opportunities were identified to improve the design and coordination of emergency response. In addition, opportunities were discovered to improve identification of at-risk patients and provide focused interventions and education, which could impact the rate of patient arrest in the hospital setting.

An assessment of rapid response team utilization and outcomes identified significant opportunities for growth. The rapid response system had been based out of the intensive care units (ICUs) and responses were based on patient type (medical vs. surgical). The organization determined that creation of a true team could allow for greater standardization of responses and improve utilization rates.

Under the new model, implemented in August 2011, utilization of the rapid response team grew quickly and general care staff expressed increased satisfaction. Efforts to focus on improved cardiac/respiratory arrest care were multidisciplinary. Mock code training was enhanced to concur with American Heart Association guidelines, improve team communication, and better define role expectations for team members. Criteria for team activation were widely dispersed and stressed during staff education; notifications via the electronic medical record (EMR) provide additional means of team activation.

Partnering with in-house emergency response training classes provided an opportunity to provide a greater number of frontline staff with information regarding actual arrest practices and improved identification of potential barriers and possible solutions.

OUTCOMES ACHIEVED

- Rapid response team activation rates grew rapidly.
- Rates of codes decreased both house-wide and in the general care units specifically.
- Staff satisfaction with the rapid response system increased.

LESSONS LEARNED

- Multidisciplinary coordination of emergency response programs is critical in impacting patient outcomes.
- The rapid response team is crucial in impacting patient outcomes and provides a unique teaching opportunity.
- Effective detection of at-risk patients is facilitated through electronic triggers and utilizing rapid responses.

CHAPTER 5

PATIENT EXPERIENCE OF CARE

HANYS' PINNACLE AWARD
FOR QUALITY AND
PATIENT SAFETY 2016

Predictive Analytics Helping Coordination of Care Through Case Management and Outreach Programs

Arnot Ogden Medical Center, Elmira

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One of Arnot Ogden Medical Center's most important strategic initiatives is care coordination to reduce readmissions and reducing frequent emergency department (ED) visits. Data analytics and predictive machine learning systems assist Arnot to focus on the right population with highest risk scores, using integrated outpatient and inpatient case management and outreach programs. This initiative has been implemented across all three hospitals: Arnot Ogden Medical Center, St. Joseph Hospital, Ira Davenport Memorial Hospital, and 52 outpatient clinics across 55 miles.

For this project, evidence-based practice risk-adjusted tools were used to research and develop the new risk-based tool to identify high-risk patients. Lean techniques like 5-50, Five WHYs, and 20-80 Pareto Rules were used to improve quality improvement methodologies. Machine learning system (MLS) was used to learn from the data continuously and improve and ensure continued success. Clinical priorities were assessed by outpatient and inpatient case management to focus their attention to track these high-risk patients.

Key stakeholders including case management, outpatient outreach programs, patients and their families, hospital executives, and the data analytics team helped build this initiative. Daily analytical reports were sent to case management using predictive probability to maintain chronic disease management and keep these high-risk patients away from the emergency department. Finally, patients were provided direct contact to a case management team member, who becomes their go-to person for any healthcare needs. The success of the initiative is monitored using real-time dashboards and presented to management for better visibility and sustainability.

OUTCOMES ACHIEVED

- Focus analytics helps to produce effective outcomes by identifying the highest risk patients.
- Better patient care is delivered through integrated care coordination using case management.
- Results show improvements in patient satisfaction and readmission scores.

LESSONS LEARNED

- Integration is a challenging pillar in healthcare in terms of outpatient and inpatient case management.
- Documentation is sparse and is not being shared effectively because of system integration issues.
- Patient communication for follow-ups and primary care physician appointments was siloed by disintegrated healthcare departments.

Honoring End-of-Life Issues Through Timely Placement of a Non-Hospital Do-Not-Resuscitate Form in the Home

Good Shepherd Hospice, Farmingdale

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This project focuses on improving the timelines and presence of a patient's non-hospital do-not-resuscitate (DNR) order in the patient's home to communicate his or her advance directive to other providers. This is achieved by obtaining physicians' written orders, which is evidenced by a signed non-hospital DNR form.

Many patients elect a DNR advance directive either upon admission to hospice services or for the duration they are on the program. If, while receiving services, the patient or family decides to call emergency medical services (EMS), it is important to have the non-hospital DNR in the home to prevent EMS from initiating cardiopulmonary resuscitation (CPR). Without this document, EMS is obligated to begin CPR. Baseline data showed that only 51% of patients had the non-hospital DNR present in the home at the time of death. Therefore, this project was initiated to assist in honoring end-of-life wishes for patients.

OUTCOMES ACHIEVED

- The agency process was improved to ensure consistent presence of the non-hospital DNR form in the home at end of life.
- There was a 10% improvement in having the form present in patients' homes at time of pronouncement.
- The risk of patients' end-of-life wishes not being honored at time of death decreased.
- This initiative decreased the burden and anxiety of caregivers, at the time of death, knowing patients' end-of-life resuscitation wishes will be honored.

LESSONS LEARNED

- Patients' end-of-life wishes have the potential to be jeopardized if the non-hospital DNR is not in the home.
- The agency's process of placing the non-hospital DNR needed to be changed to expedite the placement of this document in the home.
- Additional opportunities were identified within the changed process to further expedite placement of the non-hospital DNR in the home.

Patient/Family-Centered Care Experience in Endoscopy Unit

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

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The nursing staff at St. Mary's Hospital identified opportunities to enhance patient and family involvement during the endoscopy experience. St. Mary's looked at the endoscopy experience using the Patient/Family-Centered Care methodology, a simple six-step approach to creating ideal patient and family experiences to improve clinical outcomes while reducing waste and cost.

The organization defined the care experience as the admission process for the endoscopy patients and established the Guiding Council. The team shadowed 13 patients and families from the hospital entrance to the procedure room. The shadowing was done on different days of the week, with different doctors, and at different times of scheduled procedures. A summary of the shadowing showed touch points for improvement. These touch points were developed into recommendations for improvements that were assigned as team projects. The team used input from patients to make the recommended changes in process to enhance their experience.

OUTCOMES ACHIEVED

- Way-finding cards were developed, signage and lighting improved, and the work area was decluttered.
- The pre-procedure process was modified to include the family during the admission phase.
- An education pamphlet was developed for physicians' offices to inform patients about the procedure.

LESSONS LEARNED

- Data collected from patients and families in real time provided valuable feedback about the care experience through their eyes.
- The organization saw positive improvements in patient experience from the minor process changes that were made.
- The process of implementing a more organized patient and family engagement process was a positive experience for patients, families, and staff.
- Changing the culture in the unit has led to improved patient outcomes and better quality of care.

Improving the Patient Experience of Care

United Health Services, Johnson City

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United Health Services embraced “purposeful hourly rounding” as an evidence-based strategy to improve the patient experience nearly five years ago. Many strategies were used to accomplish sustained culture change. Direct caregivers were fully engaged in the program planning and design, with implementation in February 2012. Shared governance provided the structure for consistent communication and ongoing reinforcement of this evidence-based practice. Hourly rounding was incorporated into the nursing orientation. Performance appraisals and nursing competencies were revised to include this expectation, using the prescribed process.

A “yes/no” rounding question was also added to the Press Ganey patient satisfaction survey that year. Specifically, this question asked the patient, “During your awake time, did someone check on you once every hour?” A bedside shift report was introduced in 2014, which further enhanced the rounding process. A new job segment was added to the registered nurse and nurse aide performance appraisals at that time.

In 2015, significant hard-wiring took place, including redesigned unit process improvement boards with “communication with nurses” as a key metric. A new patient experience coach role was implemented to provide direct observation, mentoring, and feedback. Rounding logs were placed at the bedside and required sign-off to each scripted statement. This strategic approach will be used to improve the communication with providers.

OUTCOMES ACHIEVED

- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS): the Communication with Nurses ranking increased from the seventh percentile in 2014 to the 81st percentile in 2015, reaching the 90th percentile in February 2016.
- Press Ganey Prioritized Summary of Strengths (Press Ganey Gold Report):
 - four of the top five strengths were in the nursing section and all were related to hourly rounding in both the second and third quarters of 2015; and
 - all of the top five were in the nursing section in fourth quarter of 2015 based on the following analyses: Highest Percentile Rank, Positive Correlational Impact, Top Box Analysis, Historical Trend Analysis, and House-wide Commonalities.

LESSONS LEARNED

- Culture change takes time and sustained focus, particularly when changing the workflow of many caregivers.
- A performance change needs to be embedded into education, policy, performance appraisals, etc., and continuously reinforced.
- The new process must be hard-wired into documentation, measured through direct observation, and be accompanied by accountability mechanisms.

CHAPTER 6

PROVIDING CARE TO SPECIAL POPULATIONS

HANYS' PINNACLE AWARD
FOR QUALITY AND
PATIENT SAFETY 2016

Road to Recovery after Drug Diversion

Adirondack Health, Saranac Lake

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Research shows that nearly one in five nurses will suffer from a substance use disorder (SUD). The inherent nature of nursing work, which is high stress, injury prone, grief laden, and in proximity to highly addictive drugs, coupled with a “biological predisposition,” makes SUD an all-too-common occupational hazard for nurses and other healthcare professionals. The future of healthcare demands integrating the best available practices from each discipline to maximize patient and staff outcomes.

Adirondack Health’s “Road to Recovery after Drug Diversion” used a systems approach by initiating best practices from its nursing, pharmacy, information technology, and human resource departments and partnering with recognized experts in the field such as New York Statewide Peer Assistance for Nurses (SPAN). “Road to Recovery” has led to improved patient and staff safety due to tightened controls and accountability of both controlled and non-controlled substances, heightened awareness of the prevalence of this disease, recognition of signs and symptoms of SUD, and available treatment resources.

OUTCOMES ACHIEVED

- The number of controlled substance (CS) discrepancies decreased.
- The number of overall discrepancies decreased.
- Awareness of drug diversion in the workplace increased.
- There were investigations of all professionals whose medication administration had a standard deviation greater than three on the top-vended controlled substances.

LESSONS LEARNED

- Nurses often fail to notice (and report) a peer who may be suffering from addiction and SUD. This lack of reporting may prove fatal to addicted colleagues and places patients in danger. Staff need to be educated and vigilant to what SUD looks like and take the necessary steps to intervene.
- Adirondack Health learned that the “canned” two standard deviation report from the Pyxis® medication dispensing system was too controlled for its unique environment, so Adirondack Health adjusted the report to more accurately reflect its practice patterns. Other organizations may need to alter the “canned” reports to best reflect their unique practices.
- Using knowledge portal software monitoring by nurse and by unit represents a learning curve and requires time and commitment. Educating staff about monitoring and sharing the actual reports and graphs is key to achieving buy-in to the process.

Reduction in Hospital Length of Stay by Increased Utilization of Pediatric Trauma Service Management

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

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The American College of Surgeons (ACS) Committee on Trauma states that verified trauma centers should have a non-surgical admission rate of less than 10%. The goal of the ACS standard is to have surgical specialists directly overseeing patient care to improve quality of care through management of injuries by surgeons and the consultation of medical specialists for comorbid conditions.

To achieve institutional cultural change resulting in admission of all injured patients to trauma surgical services with surgical buy-in for the management of injured patients, Cohen Children's Medical Center implemented Kurt Lewin's Change Model. Lewin's research into group behavior identified that an individual leader among the group needs to view the present situation as being sustained by forces and behaviors from within the group in order to initiate change. This individual is referred to as the change leader and is charged with implementing the three steps to initiate change: unfreezing process, moving phase, and refreezing stage.

Administration buy-in is crucial to the change process and without their support change initiatives often fail. When the New York State Department of Health adopted ACS standards, Cohen Children's Medical Center envisioned that it would be a pioneer in trauma care and the successful verification of trauma centers became a key enterprise-wide initiative. The adoption of this new initiative added to the motivation for hospital leadership to support achieving ACS standards and commit to success in the verification process.

This initiative received support from physician leadership across the health system and the medical center, including the hospital medical director, who worked with the trauma program and held division chiefs accountable for compliance with admitting injured patients to surgical services. This work advanced practice changes that would ultimately lead to success.

OUTCOMES ACHIEVED

- Culture change was implemented regarding admitting service for injured patients.
- Interdisciplinary collaboration advanced the admission of injured patients to trauma surgical services.
- Non-surgical admissions were reduced by 75%.
- Hospital length of stay decreased by 21%.

LESSONS LEARNED

- Working as a team is key to implementing institutional culture change.
- Senior leadership buy-in impacts institutional change.
- Clear communication of goals and value to patient care are key to obtaining provider buy-in.

De-Escalation Emergency Assistance Team

Erie County Medical Center, Buffalo

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Erie County Medical Center's De-escalation Emergency Assistance Team (DEAT) began in April 2014 as the result of a clinical collaboration with Butler Hospital in Providence, Rhode Island. The team was created to increase patient and staff safety related to aggression and to decrease the number of seclusions and restraints in its behavioral health units. This unique performance improvement initiative afforded Erie County Medical Center the opportunity to not only partner with patients, but also to collaborate with other behavioral health facilities to provide the best patient care and initiate best practice interventions.

Verbal de-escalation and calming techniques are the primary intervention to assist patients who experience agitation. DEAT has been successful in providing patients with recovery during crisis situations. DEAT procedures were developed to mirror the hospital's rapid response procedures in assessment, intervention, and in the method of calling for team assistance. When a patient has a change in status, specialized staff are alerted and trained in de-escalation techniques to assess, intervene, and prevent any harm to the patients.

It is imperative to remember that agitation is an acute emergency that requires immediate intervention to prevent injury to patients and staff. It is every behavioral health staff member's responsibility to assist patients in mental health distress. DEAT is supported by physician and nursing administration, nursing education, direct care staff, and peers in the community. DEAT members know that verbal de-escalation provides an opportunity to partner with patients in managing and resolving their crisis. DEAT emphasizes there is only a small window of opportunity to work with patients from the time agitation begins, accelerates, and peaks, to prevent manifestation of high-risk behaviors.

OUTCOMES ACHIEVED

- There was a reduction in seclusions and restraints from May 2014 to November 2015.
- The facility underwent a culture change with respect to how it manages behavioral crises.
- Staff confidence in therapeutic communication and de-escalation skills improved.

LESSONS LEARNED

- Early intervention improves patient care.
- Early intervention significantly decreased episodes of seclusion and restraint.
- Staff have increased confidence in assessing and intervening with patients in behavioral crisis.

Geriatric Fracture Program

Good Samaritan Hospital Medical Center, West Islip

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The Geriatric Fracture Program (GFP) is an evidence-based, comprehensive, coordinated program that focuses on the care of patients 65 years of age and older who have sustained a fragility fracture. Research demonstrates that this population is particularly vulnerable and susceptible to fragility fractures and can have as high as a 25% mortality rate within one year of a fracture. In addition, loss of function and independence among survivors is striking, with 33% totally dependent or in a nursing home in the year following a hip fracture.

To serve this population, Good Samaritan Hospital Medical Center instituted GFP, which coordinates the care of the patient from the emergency department through discharge, the continuum of care, and the return home. GFP streamlines admission, optimizes patients for surgery, and provides early surgical intervention, where appropriate.

A dedicated clinical coordinator introduces the program to patients and families in the emergency department and serves as a point of contact with the patient/family and the healthcare team throughout the continuum of care. The comprehensive program is designed to reduce patient readmissions, length of stay, and mortality, and improve patient satisfaction. GFP ensures a positive patient experience, and additional benefits include reduction of the incidence of infection, deep vein thrombosis, pressure ulcers, delirium, pain, and immobility.

OUTCOMES ACHIEVED

- The readmission rate decreased.
- Patient mortality decreased.
- Surgical intervention for appropriate patients less than 24 hours after admission was achieved for 100% of patients. This is below the best practice recommendation from Synthes (24 hours) and the American Academy of Orthopaedic Surgeons (48 hours).

LESSONS LEARNED

- A culture of cooperation and open communication among the hospital disciplines must be cultivated to achieve excellent clinical outcomes.
- Setting expectations for the standardization of care is critical to the program's success.
- Providing patients and caregivers with educational resources that promote a return to preadmission functional levels prevents complications and readmissions, and reduces mortality for the GFP patients.

RISC: Reducing Restrictive Interventions and Staff/Client Injuries

Mayhaven Center of Hope/Catholic Health Services of Long Island, Port Jefferson Station

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Mayhaven Center of Hope provides comprehensive services to children, adolescents, and adults, many of whom have histories of severe challenging behaviors that often result in the use of restrictive physical interventions, which also leads to client and staff injuries. Injuries and physical interventions impact the functioning and satisfaction of everyone involved.

Recent research looking at communication-based behavior interventions has shown that a reduction in restrictive interventions and injuries is correlated with changes in policies, procedures, and supportive interventions endorsed by senior management—coupled with ongoing active and proactive training by clinicians. The goal of this project is a sustainable program that addresses the needs of both clients and staff by providing ongoing proactive training, ongoing assessment and modification of interventions, and improved data collection and analysis.

OUTCOMES ACHIEVED

- The agency's focus changed from reactive strategies to positive communication-based interventions and support.
- Positive approaches and language by staff increased when managing challenging behaviors.
- Restrictive physical interventions decreased.
- There was a reduction in staff/client injuries.
- The use of psychotropic medications was reduced—correlated with the increase in positive and proactive interventions and ongoing psychiatric assessment.

LESSONS LEARNED

- Top-down cultural change is the essential first step for providing long-term sustainable progress and positive client/staff interactions.
- Increased and ongoing training programs in proactive strategies are directly correlated with decreases in physical interventions and consequent injuries.
- Standardized assessment of skill use and attitude provide:
 - proactive and supportive client programming;
 - increased staff supports and education regarding managing challenging behaviors; and
 - active monitoring and treatment of medical and psychiatric conditions.

Breastfeeding Improvement Project

Mohawk Valley Health System, Utica

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Faced with breastfeeding rates that were below the state and regional averages, Mohawk Valley Health System's maternity center elected to participate in the New York State Breastfeeding Quality Improvement in Hospitals Learning Collaborative. The goal was to use the Collaborative as a springboard to improve breastfeeding practices and increase breastfeeding rates.

Through the Collaborative, Mohawk Valley Health System assessed its current breastfeeding policies and learned how to make evidence-based changes through a systematic approach and small tests of change. The improvement team consisted of maternity and nursery physicians and nurses, lactation staff, representatives from the quality improvement department, and a recent maternity patient.

With the guidance and direction of the Collaborative, a new breastfeeding policy was developed based on the Baby Friendly Initiative's "Ten Steps to Successful Breastfeeding." Staff were educated on the new policy by the lactation consultants and access to an 18-hour online breastfeeding course was provided. Nurse champions were identified and assisted with the changes. Facility-specific obstacles to implementing the program were identified and the team used the Plan, Do, Study, Act (PDSA) process improvement method to develop solutions.

OUTCOMES ACHIEVED

- The rate of breastfed infants who were exclusively fed breastmilk improved from 41% over the first 28 months to 54% over the past 20 months.
- The rate of infants born via cesarean section breastfed within the first two hours of life increased from 64% in the first 24 months to 92% in the past 24 months. The organization reached its goal of 80% every month since September 2013.
- The rate of infants born vaginally and breastfed within the first two hours of life increased from 89% to 96%. The organization met and sustained its goal of 90% every month since September 2013.

LESSONS LEARNED

- Participation in the Collaborative helped Mohawk Valley Health System achieve buy-in from staff. The realization that the necessary changes were supported by the larger group and staff's active engagement in the improvement process helped ensure success.
- Having a multidisciplinary team involved was critical because it allowed the process to move forward and addressed the challenges identified and examined from multiple perspectives.
- The consistent tracking of progress and feedback from the staff helped keep the team on track and engaged throughout the process.

Improving Quality and Safety on the Labor and Delivery Unit: A Multi-Step Risk Reduction Strategy to Reduce Cesarean Section Rates

Mount Sinai Beth Israel, Manhattan

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This project's hypothesis postulates that a comprehensive change management program on a labor and delivery unit can reduce the number of total cesarean sections (c-sections), primary c-sections, and Nulligravida Term Singleton Vertex (NTSV) c-section rates through:

- improved education/shared decision-making between provider and patient;
- a change in the culture in the labor/delivery unit;
- hiring a full-time medical director and patient safety officer;
- initiating a dedicated obstetrical hospitalist (laborist) program;
- implementing a web-based, electronic scheduling system with decision support and hard stops with a foundation of evidence-based algorithms for the timing of deliveries;
- a change in obstetric management processes consistent with evidence-based practices and American College of Obstetricians and Gynecologists (ACOG) guidelines to:
 - discourage latent phase admissions/increase use of ambulation and discharge to home;
 - reduce the number of inductions of labor with unripe cervix;
 - institute a "41-week policy" for post-date inductions without medical indications;
 - encourage and support trials of labor (TOLAC) for appropriate patients who have had previous c-sections and desire a vaginal birth after c-section (VBAC);
 - reduce and discourage patient choice/elective primary c-sections; and
 - encourage external cephalic versions of breech presentations in appropriate patient populations.

OUTCOMES ACHIEVED

Positive trending and change was achieved in:

- reduction in total c-section rate;
- reduction in primary c-section rate;
- reduction in NTSV rates to a rate below the Healthy People 2020 goal of 23.9%;
- increase in TOLAC and VBAC rates; and
- zero rate of elective scheduled deliveries prior to 39 weeks.

LESSONS LEARNED

- A cultural change on the labor floor can be achieved through commitment and education of all staff and providers and can effect real change in quality and outcomes.
- The oversight, supervision, and 24/7/365 presence of a full-time obstetrical hospitalist (laborist) program is vital to quality and safety on a labor and delivery unit.
- Use of an electronic scheduling program with decision support algorithms can reliably assure and facilitate appropriate timing of scheduled deliveries.

Caring Smiles Dental Program

Mount St. Mary's Hospital and Health Center, Lewiston

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Mount St. Mary's Hospital established this program to address critical oral health needs for uninsured or underinsured patients of a health center located in the poorest census tract of the city. A survey and the hospital's experience in primary care services indicated that the majority of adults had not received dental care for three to 15 years. Mount St. Mary's recognized that the health of its patients was compromised and illness was exacerbated by serious dental problems. Oral disease covers a wide array of levels of severity across the majority of those who are poor and vulnerable. Even though much of this type of disease is considered preventable, obtaining the necessary services is not always possible. Patients often must choose between dental care and food for their family.

On the advice of a dental advisory team, the hospital collaborated with local organizations that had existing dental programs. These relationships enable the poor and marginalized to obtain and enjoy good oral health. The program is managed and integrated into the operations of the services the health center provides daily, where primary care patients can be connected to dental services. No one is turned away.

Caring Smiles was started with a generous grant in 2012. Substantial support from the Hospital Foundation has been used to continue the program into the future.

OUTCOMES ACHIEVED

- The conditions and structure were created so that the poor in our community can attain and maintain good oral health as part of their overall health status.
- Progress with oral health has fostered additional change and value for patients and their families, so that participation in maintaining good oral health is valued for future generations.
- The hospital established a complementary action within the initial dental interview to promote health and alleviation from underlying social determinants to health and wellness.

LESSONS LEARNED

- The majority of patient services were at a modest expense due to a reduced fee schedule; however, the hospital regularly faced cases that required significant services (i.e., oral surgery, partial dentures, and root canals). This required an agreement for additional specialty services.
- Transportation was critical for the success of the program. The Hospital Foundation provided a van to transport patients to and from their appointments.
- The patients' experience needed to be positive in relation to daily activities. Choosing the right partner to provide services is extremely important—the partner provides multiple services to those with financial limitations and physical challenges due to disability.

Successful Alternatives to Psychoactive Management of Resident Behaviors

St. Catherine of Siena Nursing Home and Rehabilitation Center, Smithtown

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In 2013, following directives from state and national regulators, nursing homes began to work on reducing antipsychotic usage due to potential serious side effects and to formulate alternative plans for the management of dementia and dementia-related behaviors. Following a collaborative Lean Six Sigma Project with the other system nursing facilities, Saint Catherine of Siena Nursing Home and Rehabilitation Center successfully reduced antipsychotic usage from 24.6% to 2.8% using non-pharmacological alternatives for behavioral management.

The facility rate of other psychoactive medications remained high; sedative/anti-anxiety medication usage was at a rate of 28% and hypnotic/sleep medication usage was at a rate of 12%. In 2014, the facility participated in a Lean Six Sigma Project focusing on the reduction of these additional psychoactive medications. Following the same process and alternative measures identified in the antipsychotic reduction project, the facility tried to reduce the use of sedative and hypnotic medications but found the non-pharmacological interventions previously used were not as effective in this population.

The facility's leadership began to research alternate non-pharmacological approaches that would provide a sense of comfort, improve focus, reduce fear and uncertainty, and facilitate positive sleep patterns. Residents receiving sedative/hypnotic medications were identified as having utilized these medications long-term, most even prior to facility admission, and were reluctant to have these medications reduced or substituted.

In addition, anti-anxiety medications were being administered for comfort as residents approached the later stages of their life, pre-dialysis administration for comfort and anxiety reduction, and to enhance sleep patterns. The facility trialed numerous alternative measures and has successfully reduced sedative and hypnotic usage.

OUTCOMES ACHIEVED

- Use of hypnotic medication decreased from 12% to a current rate of 2.8%.
- Sedative medication usage decreased from 28% to 18.5%.
- The reduction in antipsychotic use was maintained at 2.8%.
- Newly identified non-pharmacological interventions for management of residents with anxiety-related behaviors and insomnia have a current benefit rate of 70% as evidenced by elimination or reduction of sedative/hypnotic usage.

LESSONS LEARNED

- Management of resident behavior requires individualized review and observation to identify successful alternatives for each resident.
- Management of the resident's environment and medication regimen must occur collaboratively to promote success of the initiative and the comfort of the individual resident.
- Reduction of medications that cause sedation can improve resident quality of life and participation, and reduce the risk of serious side effects.

Asthma Coalition: Improving Population Health

St. Luke's Cornwall Hospital, Newburgh

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In 2014, St. Luke's Cornwall Hospital became a member of the Hudson Valley Asthma Coalition (HVAC), a consortium of professionals who work to improve the management of asthma. HVAC is a program of the American Lung Association in New York and is funded by a grant from the New York State Department of Health. As a member of this coalition, St. Luke's Cornwall actively sought to collaborate with community partners to enhance management of asthma in an outpatient primary care setting and decrease the number of patients who are seeking care in the emergency department (ED).

The hospital launched its asthma committee in December 2014 with a focus on:

- analysis of current organizational data;
- establishing a registry of 53 asthma patients (ages five to 30) who have presented two or more times to the ED with a diagnosis of asthma in the past year;
- educating healthcare providers on asthma care best practices and supporting staff to obtain national asthma educator certification; and
- incorporating the National Asthma Education and Prevention Program, Expert Panel Report-3 Asthma Guideline into practice.

OUTCOMES ACHIEVED

- ED visits among HVAC patients decreased by 72% from January 2014 to November 2015.
- Five hospital staff members completed Asthma Educator Certification (AE-C).
- An asthma care plan was implemented for all asthma patients presenting to the ED.
- Continuity of care was maintained in the community healthcare setting through the development of a post-discharge process.

LESSONS LEARNED

- The value of the partnerships and communication among all healthcare organizations to support the transition from the hospital to community setting is paramount to continuity of care.
- The social determinants in the patient population (unemployment, poverty, old and/or substandard housing, and exposure to environmental hazards) must be addressed in the improvement processes.
- The promotion of self-management is integral to optimizing patient health.

Hospital Medicine Integrated Psychiatric Care Program

Stony Brook Medicine

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Stony Brook Medicine piloted an integrated care program on a 30-bed hospital medicine unit from January through December 2015, with the goal of reducing the length of stay (LOS) for people with co-morbid psychiatric or substance use disorders. The program included a full-time psychiatrist, and aimed to augment psychiatric services and communication with the interdisciplinary team of hospitalists, social workers, and nursing staff, with a focus on proactively identifying and addressing psychiatric or substance use problems that could negatively impact medical care and prolong hospitalization.

Stony Brook studied LOS for all patients with co-morbid psychiatric or substance use diagnoses on the integrated care unit during the 12-month pilot period in 2015 and during the 12 months pre-implementation in 2014. The team compared these metrics to those for the comparative population on its three regular care hospital medicine units during the same periods, which received psychiatric consultation as usual. Additional outcomes studied included changes in the actual versus University Health Consortium (UHC)-expected lengths of stay and the net return on investment.

OUTCOMES ACHIEVED

On the integrated care pilot unit, among all discharges with psychiatric or substance use primary or secondary diagnoses, the following changes occurred, comparing 2015 to 2014 data:

- the mean LOS decreased by 0.55 days;
- the mean excess days beyond the UHC-expected LOS declined by 0.45 days;
- the total number of hospital days decreased by 429 days;
- the difference between the mean LOS on the integrated care unit and that on the usual care comparison units was reduced by 1.85 days; and
- the net return on investment was 150%.

LESSONS LEARNED

- A strong case for integrating psychiatric care within hospital medicine settings is made by the high prevalence of psychiatric and substance use disorders in those areas, and the associated prolonged LOS in that population.
- The increased LOS for this population presents an opportunity to improve care at no additional net cost. Reductions in LOS from early and proactive psychiatric intervention allows for additional bed refills, the revenue from which pays for the cost of this enhanced service.
- Frequent communication between a psychiatric provider and the unit hospitalists, social workers, and nurses allows for early case finding and intervention to address psychiatric conditions and associated barriers to medical care.

Frequently Admitted Patients Improvement Collaborative

State University of New York Upstate University Hospital, Syracuse

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This project analyzed data and assessed the characteristics of the most frequently admitted patients at Upstate University Hospital. The characteristics that were identified for increased risk included complex behavioral health histories (i.e., psychiatric and chemical dependency diagnoses), the presence of social determinants such as housing needs, limited supports and financial resources, complex clinical histories, multiple co-morbid conditions, and limited engagement and activation for appropriate self-management. In addition, this population had predominantly Medicaid and dual-eligible payer sources.

Factors that negatively influenced the management of these complex patients included the lack of emergency department workflow and access to pertinent information that would direct caregivers on how to treat these patients, limited or no communication across care settings, incomplete staff and patient awareness of community resources, lack of knowledge about who is involved in community patient care management, and limited knowledge about who is familiar with individual patients on the inpatient or ambulatory side. To test this intervention, the Upstate University Hospital team selected 20 patients who were appropriate for this intervention; two were ultimately excluded. Ten months prior to the intervention these patients had a total of 76 admissions.

OUTCOMES ACHIEVED

- Twelve months post-intervention, there were 35 total admissions, a 54% decrease.
- Improvement was evenly distributed across 18 patients.
- Emergency department utilization decreased by 36% over the 12-month period.

LESSONS LEARNED

- There was significant improvement in outcomes by connecting primary social workers and Health Home (HH) care managers with real-time communication. The significance of this lesson caused the organization and its partners to dedicate staff to this effort.
- Inpatient and ambulatory staff gained significant knowledge regarding services available in the community and how these services can improve outcomes for patients. Embedded HH care managers have been dedicated to the hospital and ambulatory clinic to meet these needs and to educate staff and patients.
- An information technology solution that allows real-time access for communication of care plans across care settings is required for sustainability and growth.

CHAPTER 7

REDUCING HOSPITAL-ACQUIRED CONDITIONS AND READMISSIONS

HANYS' PINNACLE AWARD
FOR QUALITY AND
PATIENT SAFETY 2016

Utilization of Care Bundles to Reduce Central Line-Associated Blood Stream Infections to Zero

Arnot Ogden Medical Center, Elmira

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In an effort to prevent hospital-acquired infections, enhance quality, and reduce patient harm, Arnot Ogden Medical Center implemented best practice, evidence-based bundled care initiatives to prevent central line-associated bloodstream infections (CLABSIs) across all hospitals and nursing units.

Lean and Six Sigma processes such as failure mode effects analysis (FMEA), root cause analysis (RCA), and flow charts using VIZIO were used to understand bottlenecks, breakdowns, loopholes, and opportunities for improvement. Continuous secret observer audits are being performed daily to ensure continued success as well as continuous improvement in nursing education and care pathways. The initiative was supported by leadership and related meetings were well attended by physicians, nurses, and hospital executives to drive decisions immediately to impact outcomes. The performance improvement and volunteer departments conducted Curo caps audits to assess patients and families for educational opportunities as well as nurses and physicians for compliance and continued education.

This initiative was measured over 12 months; before and post-implementation outcomes were reported. Data analytics was used for visual reporting and dashboard presentations to educate, make process improvements, and share recognition and rewards when sustained outcomes were observed. Electronic health record systems were utilized to hardwire clinical pathways and produce alerts for nursing assessments to prevent hospital-acquired infections through central lines. The organization went through a cultural change to think proactively rather than reactively to problems involving CLABSI.

OUTCOMES ACHIEVED

- Nursing care processes were standardized using Lean methodologies, and continuous improvement Lean efforts are being put in place to sustain results.
- Alcohol-impregnated Curo caps were used for central lines as well as for patients with peripheral lines.
- Zero CLABSI throughout the hospital was sustained for December 2015, and January and February 2016.

LESSONS LEARNED

- Nursing education had to be completed more frequently than expected.
- Hardwiring processes using electronic medical record systems needed to be put in place.
- Cost analysis was performed to show return on investment.

Teamwork and Collaboration Toward Quality and Safety— Pressure Ulcer Prevention Program

Bellevue Hospital, Manhattan

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With patient safety as the compass for all clinical activities, Bellevue Hospital recognized that hospital-acquired pressure ulcer (HAPU) is a significant challenge warranting a multidisciplinary approach. Nursing took the lead to improve outcomes and established a wound care team led by a Wound, Ostomy, and Continence Nurses Society (WOCN) Board-certified staff and two registered nurses.

The wound care team has tirelessly championed patient safety in the prevention of HAPU and facilitated change in both clinical practice and the prevailing culture of nurses and physicians toward avoidance of skin breakdown. The team provides guidance on clinical decisions that are supported by evidence, backing up recommendations with studies relating to wound care prevention and healing. The team mobilized the nursing staff's involvement in skin care by developing bedside, patient-directed education efforts with measurable results. To change the focus on safety and prevention, the team modified the pressure ulcer monitoring tool, focusing on prevention through assessment of staff knowledge and awareness.

Bellevue Hospital analyzed the process to identify gaps and barriers in detecting risk factors and targeted interventions on those areas. With electronic documentation, the wound care team, in partnership with dietary clinicians, received an automatic alert once a patient was assessed as high risk for developing HAPU, resulting in early detection and interventions to promote prevention or healing. The skin care and wound care formularies were revised, choosing the most efficient and effective products based on scientific evidence and outcomes. Policy and procedures for HAPU prevention were revised to facilitate unfettered access of the staff to numerous products such as offloading devices, pillows, wedges, etc.

Concentrating on education at all levels, the wound care team advanced practical, patient-oriented, competency-based training for all nursing staff along with skin safety strategies, electronic medical record documentation and risk assessment, and rapid improvement events focused on reduction of pressure ulcers. The pressure ulcer training program has become a component of the annual competency mandates. To further stimulate HAPU prevention thinking, Bellevue developed a color-coded system that serves as a visual aid for all involved disciplines in identifying patients with different levels of pressure ulcer risk based on Braden assessment tool scoring.

OUTCOMES ACHIEVED

- In 2015, compared to the previous year:
 - total HAPU incidence was reduced by 19%; and
 - heel ulcers were reduced by 22%, compared to the previous year.
- The incidence of pressure ulcers is 0.08%, which is below the national incidence rate (NDNQI) of 0.4%.
- A pressure ulcer prevention protocol for peri-operative services resulted in zero-acquired HAPU in the operating room for two consecutive years

LESSONS LEARNED

- HAPU is preventable when timely and appropriate interventions are initiated.
- Continuing education and training are vital to pressure ulcer prevention and care.
- Safety and quality is achieved when there is collaboration among disciplines.

Electronic Clinical Decision Tool for Venous Thromboembolism Prophylaxis

Bronx Lebanon Hospital Center

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Traditionally, venous thromboembolism (VTE) prophylaxis was administered to all individuals admitted to Bronx Lebanon Hospital. The facility developed an electronic clinical decision tool that aids in risk stratification to ensure that all patients at risk for VTE will receive the appropriate prophylactic measures.

Currently available electronic decision tools are not able to identify patients at lower risk, which results in overuse of anticoagulants. The tool is unique in that it can classify patients into several groups based on the risk factors and avoid use of anticoagulants in patients with low risk for VTE, thereby reducing adverse events associated with these medications.

OUTCOMES ACHIEVED

- Compliance with VTE prophylaxis increased in all departments.
- The occurrence of preventable hospital-acquired VTE decreased.
- Unnecessary use of anticoagulants for VTE prophylaxis in the low-risk patient population was avoided.
- Overall patient care improved.
- The organization created a tool to efficiently stratify patients into various groups and identify recommended treatment protocols
- The use of anticoagulants in low-risk patients was reduced, thereby avoiding adverse events associated with these medications.

LESSONS LEARNED

- Electronic clinical decision tools have proved to be efficient, accurate, and cost-effective. The team observed the same findings in the hospital when integrating electronic decision making tool in stratifying risk of VTE
- Managing patients based on a structured tool lead to increased compliance and avoided unnecessary use of anticoagulants.

Hospital-Acquired *Clostridium difficile* Infection Prevention

Brookhaven Memorial Hospital Medical Center, Patchogue

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This hospital-wide initiative began six years ago when Brookhaven Memorial Hospital Medical Center began collecting and reporting data to the U.S. Centers for Disease Control and Prevention (CDC) through the National Healthcare Safety Network (NHSN). The hospital serves a large nursing home and dialysis population. Many admitted patients are chronically, critically ill patients who are extremely vulnerable and at risk of developing a *Clostridium difficile* infection (CDI). In addition, the hospital does not care for the typical low-risk patients, as it does not have an obstetric service, a nursery, or a dedicated pediatric unit.

Through continued prevention efforts, Brookhaven Memorial Hospital Medical Center was able to consistently reduce CDI rates each year and in 2015. Prevention efforts included:

- *C. diff* is a daily agenda item at morning reports, where each *C. diff* test and patient is discussed. It is also an agenda item for every infection control committee meeting with reports to the medical board and the Quality Medical Oversight committee.
- New isolation door signs were created to alert environmental services staff that the new “Special Contact” isolation signs require cleaning with bleach.
- New over-the-door personal protective equipment (PPE) cabinets were installed.
- Bio-K Plus® (*Lactobacillus acidophilus* CL1285 and *Lactobacillus case* LBC80R) and Florastor® (*Saccharomyces boulardii* lyo) was added the medication formulary for the primary and secondary prevention of recurrent CDI, respectively.
- All patients on proton pump inhibitors are evaluated, with a five-day re-order requirement.
- Antibiotic stewardship improved.
- Awareness increased, resulting in a higher level of hospital cleanliness.
- Hospital-wide awareness and education about *C. diff* infection increased.
- Hospital policies and processes were changed to identify high-risk patients, to isolate them early in their hospital stay, with ordering of the *C. diff* test only when clinically indicated with timely collection of specimens.
- There is a concurrent review of all cases with diarrhea and clinically high risk based on the policy every morning with all departments.
- High-risk patients are immediately isolated based on daily departmental huddles.

OUTCOMES ACHIEVED

- Appropriate *C. diff* test ordering and decreased *C. diff* testing were achieved (about 50% reduction in testing over the past two years).
- *C. diff* infection consistently decreased over the past six years.

LESSONS LEARNED

- Hospital education is done most effectively when it is done based on cases.
- Concurrent review is a very effective tool both for education and performance improvement efforts.

Healthcare-Associated Infection: Getting Closer to Zero by Improving Hand Hygiene Compliance

Catholic Health Services, Melville

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As an integrated system with several acute care hospitals, skilled nursing facilities, and a division for continuing care, Catholic Health Services' commitment to excellence made hand hygiene compliance the top patient safety initiative for 2014-2015. The Joint Commission (TJC) Center for Transforming Healthcare Targeted Solution Tool (TST) for Hand Hygiene was used to help the organization improve and sustain hand hygiene compliance. The tool helped accurately collect baseline data and identify the contributing factors for noncompliance.

The directors of infection prevention led the safety initiative at each of the system hospitals, selected pilot units, and recruited team members from clinical and non-clinical areas. Education was mandatory and required completion of a TJC web-based education module. Education ensured consistency in hand hygiene observations, resulting in accurate data collection and submission.

Baseline measurement of compliance yielded 6,132 recorded observations that were collected anonymously. Data were analyzed for each pilot unit and revealed the top reasons for hand hygiene noncompliance. Improvement strategies specific to the factors identified were developed collaboratively using techniques such as brainstorming and "just in time" coaching. Process improvement strategies were implemented throughout the organization; compliance data were collected, analyzed, and shared; and a plan for sustainment was put in place.

OUTCOMES ACHIEVED

- Hand hygiene compliance increased 20% over 12 months.
- The HAI *Clostridium difficile* rate decreased 12% from 2014 to 2015.
- The initiative saved an estimated \$366,129 from decreased HAI, according to a CDC cost estimate.
- Hand hygiene data collection was standardized.
- This initiative resulted in staff empowerment and increased awareness of process improvement.

LESSONS LEARNED

- Senior leadership, staff engagement, and commitment are integral to implementation and sustainability.
- Brainstorming as a multidisciplinary team allowed for identification of more dynamic solutions and strengthened system-wide communication.
- Information technology does not always simplify the process. Data entry, extraction, and interpretation were challenging.

Project “CAUTI Reduction”

Chenango Memorial Hospital, Norwich

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In 2012, it became clear that a team approach was necessary to achieve the goal of implementing evidence-based best practices to reduce catheter-associated urinary tract infections (CAUTIs). Through the deployment of a Lean Six Sigma (LSS) project, Chenango Memorial Hospital was successful in achieving this goal. Its last CAUTI in 2012 occurred in October. Beginning in November of 2012, the hospital experienced a CAUTI rate of 0.00 for 23 months before its next CAUTI, which occurred in October 2014.

Following the “CAUTI Reduction Project” from November 2012 through February 2016, the combined medical/surgical and intensive care unit CAUTI rate is 0.4. The hospital attributes this success to a strong team approach, staff “buy-in,” and education about the revised processes.

OUTCOMES ACHIEVED

- Awareness of the importance of the CAUTI bundle has increased.
- The hospital achieved 23 consecutive months without a CAUTI in an intensive care unit (ICU) or medical/surgical unit.
- Between November 2012 and February 2016, 35 of 40 months were without a CAUTI in an ICU or medical/surgical unit.
- Sustained 100% compliance with the Centers for Medicare and Medicaid Services (CMS) Surgical Care Improvement Project (SCIP) Core Measures Indicator for catheter removal by post-operative day one or two.
- The hospital was the 2014 recipient of the New York State Partnership for Patients Rural and Critical Care Hospital Award for Best Outcomes.

LESSONS LEARNED

- Interdisciplinary staff involvement in the root cause analysis and implementation process is vital because it provides staff with a vested interest in the outcome and a better awareness of how processes impact patient outcomes.
- Using evidence-based best practices to help drive improvement is critical.
- To ensure sustainability, leverage technology, such as electronic health records.

Universal Decolonization of Multi Drug-Resistant Microorganisms

Kingsbrook Jewish Medical Center, Brooklyn

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Kingsbrook Jewish Medical Center began an initiative to reduce multi drug-resistant (MDR) infections and central-line associated bloodstream infections (CLABSIs) in high-risk settings. Hospital-acquired infections caused by multi drug-resistant microorganisms (MDROs) place a significant financial and ethical burden on healthcare institutions. According to the U.S. Centers for Disease Control and Prevention (CDC), two million people are infected by MDROs annually, leading to 23,000 deaths. Patient bathing with 2% chlorhexidine gluconate (CHG) reduces central line infections, especially those caused by MRSA, in high-risk settings.

This initiative implemented daily patient bathing with cloths impregnated with CHG into standard patient care practice to achieve universal decolonization of skin flora. This successful initiative has continued on high-risk units, such as the intensive care unit, critical care unit, and the ventilator unit.

OUTCOMES ACHIEVED

- Pre- and post-intervention rate improvement for
 - MDR *Klebsiella*: 1.57 vs .47 (-69.8%).
 - MDR *Acinetobacter*: 1.30 vs .18 (-86.3%).
 - *vancomycin resistant Enterococcus*: (VRE) 0.59 vs 0.12 (-80.1%).
 - MRSA: 1.51 vs 0.77 (-49.3%).
 - MDR *Pseudomonas*: 0.22 vs 0.12 (-45.4%).
 - CLABSI: 1.42 vs 0.59 (-58.4%)
 - *Carbapenem resistant Klebsiella, Enterobacter and E coli*: 1.3 vs 0.41 (-68.5%).
- Overall MDR healthcare-acquired infections/1,000 patient days were 5.57 pre-intervention vs. 2.25 post-intervention (-59.6%).

LESSONS LEARNED

- Given the promising results of this initiative, daily patient washing with CHG has the potential to be a standard protocol in inpatient units to prevent HAIs caused by MDROs.
- Daily patient washing with CHG had minimal effect on *C. difficile* infections 0.43 vs. 0.41 (-4.3%) because CHG does not kill *C. difficile* spores.
- These results were achieved without the use of costly Bactroban nasal decolonization, since MRSA rates showed a 49.3% reduction with CHG washing alone.

Multidisciplinary Re-Intubation Reduction Initiative

Kingsbrook Jewish Medical Center, Brooklyn

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Kingsbrook Jewish Medical Center began a quality and patient safety improvement initiative to establish a protocol for extubations, with the goal of reducing re-intubations. The protocol implemented a multidisciplinary assessment of a patient's readiness for extubation that was built into its patient documentation system. The protocol requires an assessment of neurologic status, respiratory parameters, cough/secretions, cardiac function, laryngeal edema, and difficulty of intubation, prior to extubation and 24 hours post-extubation. The multidisciplinary team includes respiratory therapists, nurses, and pulmonologists/intensivists, and the assessment is embedded in the medical center's quality assurance review process.

The organization's population experiences multiple chronic diseases at a rate higher than the national average, which is reflected in the case-mix index (CMI) and leads to increased intubation rates. The medical center's goal was to reduce the re-intubation rate, which was already under an identified optimal rate of 5%, to improve patient safety and to reduce tracheostomies.

Despite an increased Medicare CMI (1.66 in 2012 to 1.727 in 2014), the use of this protocol reduced the re-intubation rate from 3.6% in 2012 to 1.4% in 2014.

OUTCOMES ACHIEVED

- The re-intubation rate was reduced from 3.6% in 2012 to 1.4% in 2014.
- There was a 7.5% increase in planned endotracheal extubations, from 82% in 2012 to 89.5% in 2014.
- Involvement of a pulmonologist/intensivist in the decision to extubate increased 2.1%, from 94.2% in 2012 to 96.3% in 2014.
- The organization's 2014 re-intubation rate (1.4%) exceeded the industry standard of 15% to 23%.

LESSONS LEARNED

- Pulmonologist/intensivist involvement resulted in safer extubations and is reflected in the decreased re-intubation rate.
- Monitoring the protocol as a standard procedure and documenting in the patient record assured compliance.
- As a result of safer extubations, the medical center also reduced the number of tracheostomies.

Decreasing the Incidence of Medical Device Pressure Ulcers in Critical Care Areas

Long Island Jewish Medical Center/Northwell Health, New Hyde Park

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There has been limited research on reduction of hospital-acquired medical device pressure ulcers (MDPUs). The sources of MDPU include respiratory equipment, feeding tubes, orthopedic equipment, vascular aids, and elimination catheters. Patients in critical care areas are especially at risk for MDPUs.

Internal pressure ulcer incidence data showed MDPU accounted for 65.5% of critical care pressure ulcers at Long Island Jewish Medical Center, so the organization created an interdisciplinary, frontline, critical care task force to develop and implement an evidence-based bundle to decrease MDPU incidence in critical care areas. The D.E.V.I.C.E.S. bundle was developed using a deductive methodology from established pressure ulcer prevention and management guidelines. The bundle encompassed all essential evidence-based interventions that, when implemented together, result in prevention of MDPU. Based on critical appraisal of literature for each device, the D.E.V.I.C.E.S. bundle was applied to medical devices frequently associated with pressure ulcers in the critical care areas.

The ACE Star Model of Knowledge Transformation was used to guide the task force through the project, beginning with the assessment of need for a practice change and ending with implementation, evaluation, and dissemination of the D.E.V.I.C.E.S. bundle. Internal data were collected about current practices and the scope of the problem. The task force performed a stakeholder analysis and identified ways to overcome barriers at the individual, unit, and organizational level to facilitate successful implementation of the project. Educational programs were provided for all levels of practitioners who participated in care of patients with medical devices.

The MDPU incidence rate and compliance with bundle implementation in critical care is monitored daily at briefs and during rounding, and improvements have been sustained. The D.E.V.I.C.E.S. bundle has been disseminated throughout the hospital.

OUTCOMES ACHIEVED

- MDPU was reduced 70% (2014) and 98.7% (2015).
- The total number of MDPUs in critical care decreased annually as follows: 78 baseline data (2013); 23, a 55 MDPU decrease (2014); 1, a 22 MDPU decrease (2015).
- The organization estimated significant cost avoidance for hospital-acquired MDPU, depending on severity (2013 vs. 2015).

LESSONS LEARNED

- It is essential that frontline staff projects align with organizational and nursing strategic goals.
- Engaging frontline staff and providing them with resources and tools to succeed is vital for improving patient outcomes.
- Daily rounding for monitoring of MDPU facilitates sustainment of achieved goals.

Improving Colorectal Surgical Outcomes: A Four-Pronged Approach

Maimonides Medical Center, Brooklyn

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Using the 2011 data as the index year, Maimonides Medical Center implemented a multidisciplinary approach to improve colorectal surgical outcomes. A team was formed consisting of leadership and frontline staff from the surgery, anesthesia, perioperative services, critical care, nursing, pharmacy, and performance improvement (PI) departments. The action plan included implementation of four evidence-based processes. PI facilitated this initiative using the Plan, Do, Study, Act (PDSA) methodology.

The improvement strategies included stakeholder identification, staff involvement, process mapping, and use of standardized and evidence-based protocols. The action plan involved setting goals, assigning responsibilities, creating a timeline for implementation, and establishing measures of effectiveness.

Initially, the Enhanced Recovery After Surgery (ERAS) protocol was implemented. The group agreed upon an ERAS order set, which was placed in the hospital Computerized Order Entry System (CPOE) and included all components of the ERAS protocol; postoperative management of intravenous fluids, pain management, and early ambulation and alimentation. An ERAS brochure was developed to provide pre-admission patient education. All aspects of the program were presented and discussed at grand rounds in the departments of surgery, anesthesia, and nursing prior to implementation.

In addition to the ERAS protocol, the institution adopted the advanced colon bundle recommended by the American College of Surgeons to decrease the surgical site infection rate for colorectal surgeries. The group then elected to use the Medical Early Warning System. The last patient care initiative added to the program was the use of Postoperative Co-management of colorectal surgical patients by internal medicine hospitalists. This program included frequent rounding by internists to optimize the patient's post-operative course, particularly those with high-risk medical co-morbidities. The co-managers were part of the primary care team and communicated directly with the surgeons.

OUTCOMES ACHIEVED

Using 2011 as the index year, the American College of Surgeons National Surgical Quality Improvement Project (NSQIP) semiannual report for 2015 showed notable downward trends in colorectal surgical outcomes:

- The odds ratio for colorectal mortality decreased from 1.16 in 2011 to 0.82 in June 2015 (29.3% reduction).
- The odds ratio for overall colorectal morbidity decreased from 1.38 in 2011 to 1.03 in June 2015 (25.4% reduction).
- The odds ratio for colorectal returns to the operating room decreased from 1.31 in 2011 to 0.77 in June 2015 (41.2% reduction).

LESSONS LEARNED

- Leadership support is critical for success.
- Participation in a nationwide quality improvement initiative (NSQIP) facilitated the implementation of strategies and evidence-based protocols to improve colorectal surgical outcomes.
- Physician engagement and early end-user feedback are essential for implementing a new process.

Severe Sepsis Improvement

Mercy Medical Center, Rockville Centre

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Finding ways to improve outcomes for sepsis patients is a high priority for Mercy Medical Center. The first step was to collect baseline data. Mercy chose the following indicators:

- time to antibiotics;
- time to resuscitation;
- three-hour bundle compliance; and
- six-hour bundle compliance.

The medical center created a multidisciplinary sepsis committee that met monthly to review best practices, severe sepsis performance, outliers, and continuous improvement. Severe sepsis was discussed at monthly emergency department (ED) meetings with suggestions on how to improve performance and patient care. Each outlier was reviewed by both the ED and the quality department. Individual feedback was given to each provider and nurse involved with each outlier case. Order sets were initially modified to change intravenous (IV) fluid boluses from 20cc/kg to 30cc/kg as a default.

After initial staff education, performance improved in some areas but did not meet Mercy's goals in other areas. Using the Plan, Do, Check, Act (PDCA) methodology for improvement, the team decided to revisit its process and analyze the outliers. They focused on three areas to further improve: antibiotics ordered late; antibiotics given late; and inadequate IV fluid boluses ordered. The facility decided to prioritize sepsis patients to the same level as ST elevation myocardial infarction (STEMI) and stroke patients. Patients who screen positive for sepsis are triaged at Emergency Severity Index (ESI) level 2, requiring a physician to be called immediately to the bedside and antibiotics are given immediately instead of waiting for lab results. There is increased emphasis on using the sepsis order sets and protocol. A smart phrase was created in the electronic medical record to assist with the reassessment requirements of Centers for Medicare and Medicaid Services sepsis core measure.

OUTCOMES ACHIEVED

- Time to antibiotic: 80% improvement overall for 2015.
- Three-hour bundle: 135% improvement overall for 2015.
- Six-hour bundle: 180% improvement overall for 2015.

LESSONS LEARNED

- Prioritizing ED sepsis patients as ESI level 2 is vital for timely resuscitation and treatment of severe sepsis.
- Outlier analysis allowed the facility to focus on certain problem areas resulting in significant improvement in sepsis patient care.
- A multidisciplinary approach to severe sepsis treatment in the hospital is crucial.

Fall Prevention Initiative

Mercy Medical Center, Rockville Centre

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Healthcare professionals are dedicated to practicing within a culture of safety and are committed to excellence. In 2013, Mercy Medical Center 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.

A strategic planning team was formed, working within a shared governance model, committed to improving the fall prevention/reduction program. This team consisted of registered nurses (RNs) and frontline staff 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, Mercy conducted a review of evidence-based literature and shared knowledge to identify areas for improvement. The organization 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.

Mercy Medical Center collected baseline data from 2013, and the goal at the beginning of 2014 was to reduce inpatient falls by 10%. The 2014 fall rate was reduced to 2.4% and the 2015 fall rate remained constant at 2.4%. The goal was to sustain the achieved goal—which was accomplished.

OUTCOMES ACHIEVED

- Mercy Medical Center exceeded its goal and decreased falls by 20%.
- The 2015 fall rate remained constant at 2.4%.

LESSONS LEARNED

- Ongoing staff education is necessary to raise awareness and maintain expected standards of patient safety.
- Positive outcomes occur when patients and caregivers are engaged in the process.
- Continuous changes in techniques and methods of awareness are the linchpins to sustainability.

Reducing CAUTI through Prompt Removal of Indwelling Catheters

Mount St. Mary's Hospital and Health Center, Lewiston

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Healthcare-associated infections (HAIs) are an ongoing focus for quality departments and 40% of HAIs are catheter-associated urinary tract infections (CAUTIs). There is both a human and financial cost to HAIs. Many evidence-based methods have been explored for decreasing catheter use, and thus CAUTI, including reminders on charts or guidelines for insertion and maintenance.

Working with IPRO and its 11th Scope of Work, the hospital's infection control coordinator led a collaborative effort with physicians, nurses, and patient care services staff to devise a physician-ordered, patient-specific catheter removal protocol 48 hours after insertion. To implement this approach, physicians first developed, documented, and approved the recommended order set. Following the physician-ordered, patient-specific protocol, nurses assess each patient daily. If there is no contraindication, the catheter is removed 48 hours after insertion. Physicians continue to document the need for Foley catheter use daily through the electronic medical record.

Education and support for staff was key. Nurse champions on each floor monitor catheter use and provide feedback to the medical staff and nurses. It was determined that ongoing assessment of catheter use and medical necessity are key to ensuring that catheters are discontinued at the earliest medical opportunity.

OUTCOMES ACHIEVED

- Foley catheter prevalence dropped from 11.7% in 2013 to 9.8% in 2014 and finally to 8.4% in 2015.
- CAUTIs decreased:
 - There were six CAUTIs in both 2013 and 2014.
 - After initiation of the physician-ordered, patient-specific protocol, that number dropped to one in 2015. Foley prevalence also dropped from 11.7% in 2013 to 9.8% in 2014 and finally to 8.4% in 2015.
- Staff collaboration increased.

LESSONS LEARNED

- It is important to engage a full interdisciplinary team when creating a culture change.
- Leadership must provide staff with support and resources to improve patient care.

Working With What You Have: Value of an Inter-Professional Team and Quality Dashboard for Preventing Hospital-Acquired Conditions

NewYork-Presbyterian/Queens, Flushing

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As part of an institutional commitment to improve quality and patient safety for the critically ill, in 2014 NewYork-Presbyterian/Queens incorporated a structured interprofessional morning report into the daily workflow for patients admitted to the medical critical care service. While a morning report has typically been viewed as an educational opportunity for house staff, its utility as a process-targeted quality improvement tool was unknown. The facility hypothesized that by implementing a daily morning report format into the intensive care work rounds and measuring performance using a quality dashboard, outcomes could be improved in hospital-acquired conditions (HACs) and core measures for patients admitted to the medical critical care service.

To test this hypothesis, the facility formed an interprofessional team comprised of nurses, clinical pharmacists, respiratory therapists, house staff, midlevel providers, and critical care attending physicians who care for patients in the medical intensive care unit (ICU). Through daily auditing of each patient, the team enforced hospital guidelines for prophylaxis against venous thromboembolism (VTE), appropriate use of indwelling urinary catheters, and compliance with best practices for prevention of central line-associated bloodstream infections (CLABSI).

Next, NewYork-Presbyterian/Queens created a quality dashboard for all four intensive care units (ICUs) that measures 15 performance indicators. The dashboard was used as a tool to measure team performance and to provide timely feedback to frontline staff and executive leadership.

OUTCOMES ACHIEVED

- The facility achieved a 62% reduction in the CLABSI rate in 2015 relative to 2014.
- The rate of catheter-associated urinary tract infections (CAUTI) decreased 78% in 2015 relative to 2014.
- A 100% compliance rate for prophylaxis against VTE was achieved in 2015—and sustained for one year.
- Implementation of a quality dashboard for critical care services that improved institutional awareness of healthcare-associated conditions created opportunities for different units/departments to learn from each other's successes, and allowed clinicians and administrators to compare local practice and performance with national benchmarks.

LESSONS LEARNED

- A morning report format using an interprofessional team can function as a process-targeted quality improvement tool.
- High-performing interprofessional teams must pass through several developmental stages and may take six to eight months to fully demonstrate optimal productivity.
- Quality dashboards are essential tools to analyze the effects of high-performing teams. A morning report format combined with a quality dashboard has a very favorable cost-benefit ratio and is easily adaptable across healthcare systems.

An Innovative Approach to “CDIFFerently”

North Shore University Hospital/Northwell Health, Manhasset

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Hospital-acquired conditions (HACs) like *Clostridium difficile* (*C. diff*) have an enormous impact on patient suffering, mortality, and hospital cost. North Shore University Hospital developed a standardized approach to control the incidence of *C. diff*. The hospital engaged teams from all sections of the hospital including leadership, nursing, infection prevention, environmental services, materials operations, providers, patient logistics (bed assignment team), information technology (IT), and laboratory services that were highly engaged in efforts to drive change and facilitate innovation.

Using the Plan, Do, Check, Act (PDCA) performance improvement methodology, the team standardized evidence-based recommendations for infection control practices, developed explicit policies and procedures, selected and purchased patient care equipment, partnered with IT staff to establish systems for ordering processes, evaluated the results, and communicated the lessons learned in multiple forums to share the factors they reduced to lower risk of infection.

The hospital chose a pilot medical floor to lead the hospital in taking a focused and energized approach to reduction and control of *C. diff*. The team partnered with environmental services and patient logistics staff to ensure terminal cleaning when the patient was taken off isolation during the hospital stay. In addition, the team collaborated with the materials operations team to design standardized disposal kits with supplies the staff needed to thoroughly provide care in the patient's room.

The lab began to use the Bristol Stool Chart to evaluate stool samples and reduce inappropriate tests. Empowered infection prevention nurses concurrently review indications for *C. diff* orders and provide multi-modal education with the tracer methodology. The antimicrobial stewardship program helped to prevent the development of multi drug-resistant organisms and reduce unnecessary drug use and costs associated with expensive, broad-spectrum therapies.

OUTCOMES ACHIEVED

- Evaluating stool samples using the Bristol Stool Chart reduced inappropriate tests, achieving a savings of \$21,201 in 2015.
- By implementing guidelines for appropriate use of selected antibiotics, the antimicrobial stewardship program saved \$169,059 in 2015.
- The 37% reduction of 87 hospital onset *C. diff* cases from 2014 to 2015 led to less suffering, and saved \$1,283,685.

LESSONS LEARNED

- Supported by leadership, the committed intraprofessional team empowered frontline staff to question appropriateness of *C. diff* stool testing, isolation adherence, and personal protective equipment utilization.
- A patient-centered approach drove the “CDIFFerently” campaign to reduce harm, identify what contributed to the outcome, and enabled everyone to celebrate achievements.
- Evidence-based practices promoted use of standardized equipment, better utilization of isolation beds, and appropriate ordering, eliminated unnecessary testing.

Aiming for Zero: Best Practice Strategies to Eliminate CAUTIs Across a Large Multi-Hospital Organization

Northwell Health, Great Neck

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Urinary tract infections (UTIs) are the fourth most common type of healthcare-associated infection (HAI). In the U.S., it is estimated that more than 13,000 deaths are associated with a UTI. Due to the potential for patient harm and morbidity/mortality, senior leadership at Northwell Health prioritized a catheter-associated urinary tract infection (CAUTI) initiative to eliminate intensive care unit (ICU) and non-ICU CAUTIs across its acute care hospitals and children's hospital.

In 2012, an organization-wide steering committee was formed to plan and oversee the initiative. Each site identified an executive sponsor, designated nurse, physician leaders, and CAUTI champions, and established an inter-professional team. Site-specific CAUTI teams convened each month to share best practices, discuss challenges, and brainstorm innovative ideas. Uniform guidelines and best practice prevention strategies were implemented. An executive dashboard (used for executive variable compensation) includes thresholds and goals for CAUTI reduction. Uniform CAUTI metrics are posted on the employee intranet, as well as Northwell's public website.

OUTCOMES ACHIEVED

Intensive care unit (ICU) CAUTIs:

- The ICU CAUTI Index decreased 60% (2012 vs. 2015).
- Three hospitals sustained zero ICU CAUTIs in 2015 and ten hospitals were ICU CAUTI-free in December 2015.
- The ICU standardized infection ratio (SIR) steadily declined from 1.7 (2012) to 0.69 (2015) with a statistically significant decrease in the ICU SIR value in 2015 compared to 2012.

Non-ICU CAUTIs:

- The non-ICU CAUTI Index decreased 43% (2012 vs. 2015).
- Non-ICU SIR declined from 1.40 (2012) to 0.78 (2015) with a statistically significant decrease in the non-ICU SIR value in 2015 compared to 2012.

Foley catheter days (device utilization) declined as follows:

- The number of ICU and non-ICU indwelling catheter days decreased from 195,802 days (2012) to 159,182 days (2015).
- The device ratio decreased from 19.6 (2012) to 14.9 (2015).

Children's hospital:

- One ICU CAUTI (2014-2015).

LESSONS LEARNED

- Compliance with indwelling catheter insertion and maintenance bundles requires strict adherence to evidence-based guidelines, tools, and resources to support frontline staff, teamwork, enhanced communication, and staff empowerment.
- Leadership commitment and accountability are necessary to achieve high reliability and sustained improvement.
- Ongoing monitoring of defined metrics with thresholds, goals, and stretch goals motivate improvement.

Reduction of Readmission Rates

Oneida Healthcare

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Oneida Healthcare adopted Project RED (Re-Engineered Discharge) in 2011 after recognizing a need to address hospital readmissions in high-risk populations. The facility evaluated several programs and decided to pursue Project RED with Boston University Medical Center (BUMC) due to its alignment with Oneida Healthcare's organizational values, goals, and initiatives. Care Transition Service (CTS)—a team of registered nurses and social workers—initially targeted patients with pneumonia and heart failure (HF). The hospital independently tracked readmissions and identified chronic obstructive pulmonary disease (COPD) as a diagnosis that also required intervention.

At admission, CTS discusses medication regimen, primary care providers, and potential referrals. Patients receive low-literacy educational packets for their specific diseases. CTS reviews the packets with the patient and caregivers throughout the stay. CTS schedules follow-up appointments for the patient with primary care providers and specialists prior to discharge. Patients who do not have primary care providers receive an appointment at one of the hospital clinics or affiliated practices. Post-discharge telephone calls provide an opportunity to identify and solve any obstacles or social determinants preventing the patient from following his or her plan. The *After Hospital Care Plan* is an easy-to-read booklet with critical information a patient will need to access following discharge. It includes a large-print medication schedule, a list of all providers and the conditions they are treating, and a calendar with scheduled appointments and prescribed activities and diets. Patients are encouraged to take the *After Hospital Care Plan* with them to all appointments so that it can be kept current. By keeping the plan simple, patients are able to easily find information they need.

Project RED empowers and enables patients within these chronic disease populations to navigate the healthcare system and their own plans of care. Patients leave the hospital safer and better prepared to manage their chronic diseases than ever before.

OUTCOMES ACHIEVED

- HF readmissions decreased from 25.6% in June 2011 to 21.3% in June 2015. The organization is now below the U.S. average for HF readmissions.
- Pneumonia readmissions decreased from 18.7% in June 2011 to 15.8% in June 2015. Oneida Healthcare is now well below the U.S. average for pneumonia readmissions and very close to the top 10% in the nation (15.7%).
- COPD readmissions decreased from 20.4% in December 2014 to 19.0% in June 2015. Oneida is consistently below the U.S. average for COPD readmissions and is approaching the top 10% in the nation (18.8%).

LESSONS LEARNED

- Patient and caregiver education needs to be started as soon as possible during admission and reinforced throughout the stay.
- Readmissions need to be approached in a multidisciplinary manner, which includes pharmacy, respiratory therapy, nursing, social work, dietary, physical therapy, occupational therapy, outside vendors, and home care agencies.
- Medication reconciliation is very important for reducing polypharmacy and patient confusion regarding the medications, their purpose, and when to take them.

Journey to Achieving Zero Harm: Reducing Healthcare-Associated Infections

Soldiers and Sailors Memorial Hospital, Penn Yan

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In early 2012, Soldiers and Sailors Memorial Hospital began participating in the New York State Partnership for Patients and was closely monitoring performance on all patient safety indicators. The hospital actively engaged in the “Zero Harm” initiative and adopted an initial goal of reducing its healthcare-associated infection (HAI) rate to below 2%. The “stretch goal” was to have no HAIs.

With the support from the leadership team and guidance from the Partnership for Patients, the hospital began by assembling a multidisciplinary team to review current performance data and practices. The team consisted of infection prevention, nursing, housekeeping, materials management, and administration. After comparing current practices to evidence-based recommendations, the team agreed to implement changes aimed at decreasing HAI rates.

These changes included:

- staff education on proper hand hygiene;
- increased hand hygiene surveillance and monitoring;
- use of bleach when cleaning all patient rooms and equipment;
- intravenous start kits that included chlorhexidine gluconate skin prep;
- chlorhexidine gluconate central line dressings;
- adoption of catheter-associated urinary tract infection (CAUTI) and central line-associated blood stream infection (CLABSI) insertion/maintenance bundles;
- daily review of necessity of all urinary and central line catheters;
- removal of unnecessary lines;
- monitoring the number of urinary and central line days for evidence of reduction in usage; and
- adoption of a nurse-driven urinary catheter removal protocol.

OUTCOMES ACHIEVED

- Zero HAIs since August 11, 2013:
 - 100% reduction in *C-difficile* HAIs;
 - 100% reduction in MRSA HAIs;
 - 100% reduction in intravenous site HAIs;
 - zero CLABSIs;
 - zero CAUTIs;
 - 100% observed hand hygiene compliance for 2014 and 2015; and
 - recognized by *Becker's Infection Control and Clinical Quality* in 2015 as one of the Top Five Hospitals in New York State for room cleanliness.

LESSONS LEARNED

- There were unanticipated knowledge gaps about established protocols for intravenous insertions.
- Hand hygiene practice and monitoring were inconsistent.
- There were opportunities to improve the consistency of using the appropriate disinfectant needed to destroy specific bacteria.

Using a Performance Improvement Team to Reduce Catheter-Associated Urinary Tract Infections

St. Francis Hospital—The Heart Center, Roslyn

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In 2013, the National Healthcare Safety Network (NHSN) redefined catheter-associated urinary tract infections (CAUTIs), which raised concerns about the potential to significantly expand the number of patients identified as having a CAUTI.

The CAUTI reduction performance improvement team was chartered by St. Francis Hospital's performance improvement steering committee. Its focus was to reduce the number of CAUTIs while maintaining patient safety and positive patient experience. The team performed in-depth analysis of processes and practices associated with urinary catheters.

Significant education was needed to change practice. Screening, testing, and application methods were re-evaluated. A daily assessment of the need for a urinary catheter began with an emphasis on timely removal. The team placed limitations on staff members who could perform urinary catheterizations and who could collect urine cultures on patients.

Alternatives to the use of catheters were researched and implemented, including bladder scanning and straight catheterization. External catheters for men were promoted and female urinals were evaluated and approved. The surgical intensive care unit developed a CAUTI bundle. Staff throughout the hospital became aware of which patients had urinary catheters on their units. As a result, the hospital CAUTI rates were significantly reduced.

OUTCOMES ACHIEVED

- The total critical care unit CAUTI rate was reduced from 4.50 in 2013 to 1.76 in 2014 and to 0.89 in 2015.
- The total medical-surgical unit and intermediate care unit CAUTI rate:
 - 2013: 5.93
 - 2014: 1.35
 - 2015: 0.58

LESSONS LEARNED

- Efforts were needed to improve the mindfulness of the staff to know which patient required urinary catheters and early removal of the catheters.
- Limiting who performed urinary catheterization and who obtained urine cultures allowed for specialized training and resulted in decreased CAUTIs.

Catheter-Associated Urinary Tract Infection Prevention

The Brooklyn Hospital Center

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The Brooklyn Hospital Center convened a multidisciplinary group to conduct a failure mode and effects analysis (FMEA) study with the goal of reducing catheter-associated urinary tract infections (CAUTIs). The group, comprised of infection control, quality management, nursing, physicians, and information technology (IT) staff, used The Joint Commission-recommended healthcare FMEA matrix designed by the Veterans Affairs (VA) National Medical Center on Patient Safety. The matrix enabled the group to identify possible effects that the failure of a process could have on patients. The effects were scored on a scale from one to ten for severity, probability, and detectability. The workgroup then prioritized the failures by empirically calculating the most severe failure modes.

The team used the FOCUS-Plan, Do, Check, Act performance improvement methodology for the improvement projects, root cause analysis to identify causes in each individual CAUTI, and an in-depth review was done on each of the CAUTI cases to search for patterns or trends. The goal was to reduce CAUTI by 40%.

The CAUTI prevention project involved process changes, practice changes, comprehensive staff education, correction plans, and monitoring plans. It focused on education of physicians and nurses, implementation of a better surveillance program and CAUTI prevention practices, feedback on CAUTI outcomes, and process measures. The CAUTI prevention project is largely focused on reinforcement and re-education of best practices including full barrier precautions for insertion, proper hand hygiene, daily assessment for ongoing use, and daily nursing maintenance outcomes and process measures.

OUTCOMES ACHIEVED

- The ICU CAUTI rate decreased steadily and the standardized infection ratio (SIR) remains below the national SIR and state average for three quarters (second quarter 2015 to fourth quarter 2015).
- The SIR for the non-ICUs has remained below 1.
- Overall ICU and non-ICU units have remained below SIR of 1; there have been zero CAUTIS for the past seven months in ICUs and for four months in non-ICU units.
- The total number of infections decreased from 122 in 2014 to 24 events in 2015. The goal is to achieve and maintain zero infections overall.

LESSONS LEARNED

- A restrictive urinary catheter policy together with daily review of necessity and discussion of appropriateness of catheter use were important interventions for the decline in CAUTI rates.
- Education and engagement of house staff and nursing staff were key.
- A daily active surveillance program for CAUTIs combined with root cause analysis of each infection resulted in optimum outcomes.
- Daily bedside huddles by the nursing staff combined with multidisciplinary rounds reinforced the best practices.

Reducing Hospital Acquired *C. difficile* as a Team Approach

The University of Vermont Health Network—Champlain Valley Physicians Hospital,
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With the support of hospital leadership, the organization took a multidisciplinary approach to prevent the spread of *Clostridium difficile* as well as other antibiotic-resistant organisms. Successful interventions included having all newly admitted patients with diarrhea immediately placed on contact precautions, regardless of the suspected source of diarrhea. A key component of the success was significantly increasing the turnaround time for *C. diff* testing using new technology. In addition, patients developing diarrhea while hospitalized were tested for *C. diff* and placed under contact precautions quickly.

Interdepartmental notification of *C. diff* positives was enhanced to include phoning results to the nursing unit and infection control, and placing a flag in the patient's electronic medical record, including the type of isolation required. An enhanced visual cue to other patient care providers was implemented by developing a red contact precautions sign (designated for *C. diff* infection alone) with a picture of a sink to remind staff to use soap and water handwashing. All positive patients remain on contact precautions until discharge.

Recognizing that patient and family education plays a vital role in limiting the spread of *C. diff*, patients with *C. diff* infections receive a brochure and specific education from the unit nurse. In addition to addressing the prevention goal within the hospital, it enables families to understand the measures needed once the patient returns home regarding surface cleaning and personal hygiene.

The hospital's environmental services department played a key role and responded to prevention efforts by switching to a double cleaning in addition to the established practice of using bleach disinfection for daily room and discharge cleaning. The hospital also invested in two Bioquell hydrogen peroxide vapor devices for use in all *C. diff* rooms following the normal discharge cleaning process.

The facility incorporated 24/7 electronic hand hygiene compliance monitoring in addition to spot audits, using direct observation of isolation compliance to validate that *C. diff* prevention protocols are being followed.

OUTCOMES ACHIEVED

- The facility's *C. diff* infection rate decreased 36% from 2012 to 2014.
- The organization built awareness around *C. diff* and how it impacts patients.
- *C. diff* prevention is a hospital priority.

LESSONS LEARNED

- There is no single product or action to prevent hospital-acquired *C. difficile*. Using a bundle approach targeting the environment, people, and processes can achieve a sustainable decrease in hospital-acquired *C. diff*.
- All members in the facility must be aware and committed to their role in prevention of hospital-acquired *C. diff*.

Evidence-Based Best Practices Lead to a Significant Reduction in CLABSI

State University of New York Upstate University Hospital, Syracuse

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To reduce the number of central line-associated bloodstream infections (CLABSIs) in the adult intensive care unit (ICU) setting, in 2014 Upstate University Hospital created a multidisciplinary team consisting of staff from nursing, physician groups, quality, infection control, hospital administration, value analysis, and organizational training and development. The team assessed the hospital systems and environment at both the macro and micro levels and determined the best course of action was to develop a CLABSI prevention bundle founded on traditional evidence-based best practices based on Infusion Nurse Society and Centers for Disease Control and Prevention recommendations.

These best practices included adoption and implementation of standardized procedure carts, maximum barrier kits, Curoc caps, and chlorhexidine gluconate (CHG) bathing of patients. Additionally, multi-pronged education was mandated for all care team members: web-based sessions followed by live demonstrations and in-services including a simulation lab for physician training on proper central line insertion techniques.

After successful implementation in the ICU and a significant reduction in CLABSIs, this initiative was implemented in the hematology/oncology setting in August 2015. The same bundle and education were implemented with the addition of a peripherally-inserted central catheter (PICC) team, which consists of a group of specialized trained nurses.

The multidisciplinary team continues to meet monthly to conduct a root cause analysis on every central-line infection, review best practices, brainstorm new initiatives, and deploy strategies to further reduce CLABSIs. The team will continue to roll out these best practices to other units across the hospital. With collaboration, hard work, and utilization of evidence-based practices, this team has made a significant difference in the quality of care patients receive and has saved lives.

OUTCOMES ACHIEVED

- CLABSIs decreased 70% in the ICU and hematology/oncology units from 2013 to 2014. In 2014, the ICU was CLABSI-free for five months.
- The addition of the PICC team in hematology/oncology has resulted in a further reduction in CLABSIs compared to the ICU. Hematology/oncology went seven months without a central-line infection in 2015.
- About 3,200 patients in the ICU and hematology settings benefit from this intervention annually.
- The New York State Department of Health recognized the facility for CLABSI reductions in 2015.

LESSONS LEARNED

- Standardized processes for care and insertion of central lines are essential to infection prevention.
- Mandatory education for all frontline healthcare providers significantly increases compliance of prevention bundle strategies.
- Input from all members of the healthcare team into policy creation is pivotal to the success of the initiative.

Implementing Technology—How Biovigil Helped Reduce Multi Drug-Resistant Organisms

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In an effort to build upon its extensive infection control initiatives, clinical nurses on one unit at White Plains Hospital volunteered to implement an innovative new hand hygiene awareness system called Biovigil. This innovative technology is an easy-to-use badge system designed to reinforce proper hand hygiene practices. Clinical nurses wearing a Biovigil badge receive reminders with audible alerts when hand sanitizing is required. Visible red, yellow, and green lights on the badge provide patients with visual communication that proper hand hygiene protocol has been followed.

An interprofessional team was formed to assess the current process and help implement the new technology on the pilot unit. Educational sessions were initiated for clinical nurses on the use of Biovigil and re-education was provided. Through clinical nurse involvement, physician assistants, environmental services, food services, and other members of the healthcare team, Biovigil technology became a successful tool for the staff members and even engaged patients and visitors in identifying the importance of appropriate hand hygiene.

Once it identified success on its pilot unit, White Plains Hospital implemented the Biovigil technology on other units and with other disciplines, and continued to show improvement in the reduction of multi drug-resistant organisms (MDROs). Consistent hand hygiene is the single most powerful method to prevent transmission of hospital-acquired infections. White Plains Hospital is the first in the state to adopt this innovative system, which has been shown to deliver and sustain high hand hygiene compliance rates at other leading hospitals across the country.

OUTCOMES ACHIEVED

- MDROs were reduced 46% on the pilot unit.
- MDROs were reduced 75% on a subsequent unit.

LESSONS LEARNED

- Engagement of the interdisciplinary team is critical to success.
- Use of a technology-based compliance monitor is more efficient than traditional compliance monitoring methods.
- The healthcare team's involvement in the development and implementation of Biovigil enhanced the promotion of patient safety and resulted in an overall increase in a culture of safety.

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