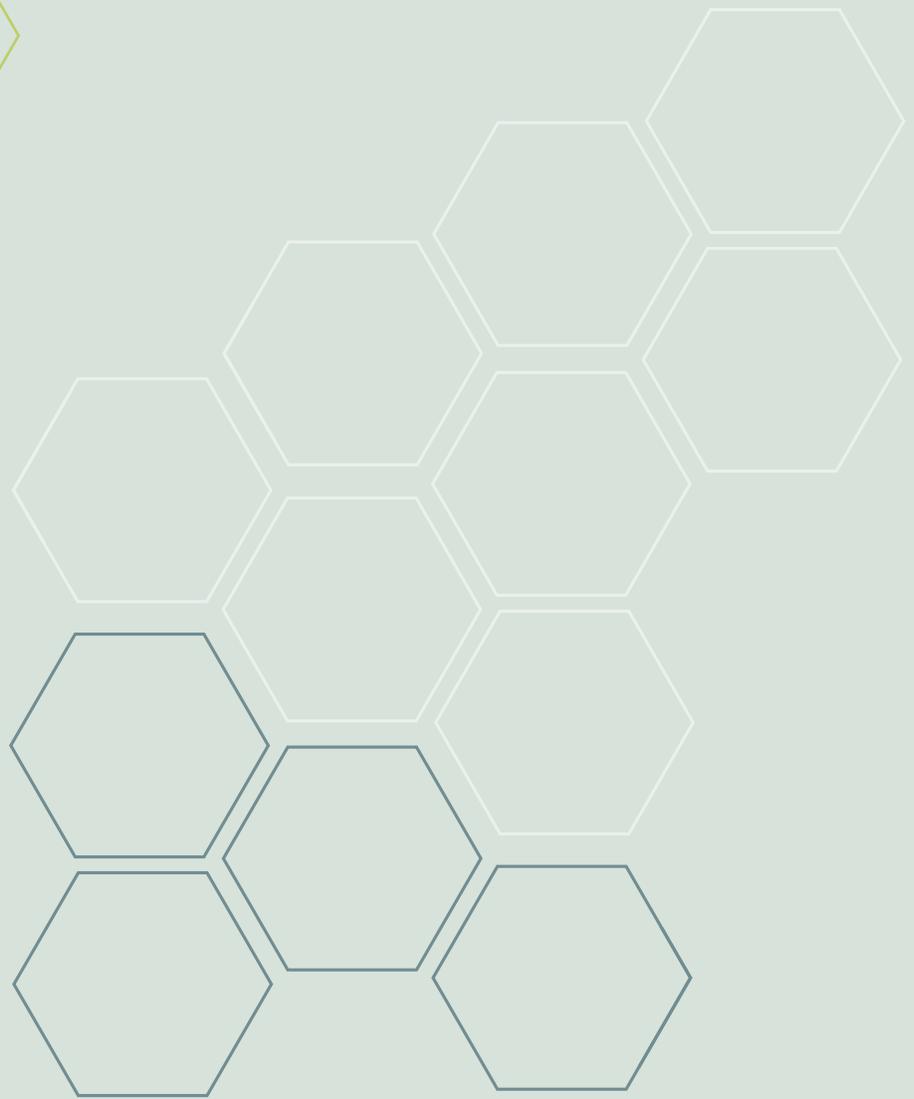


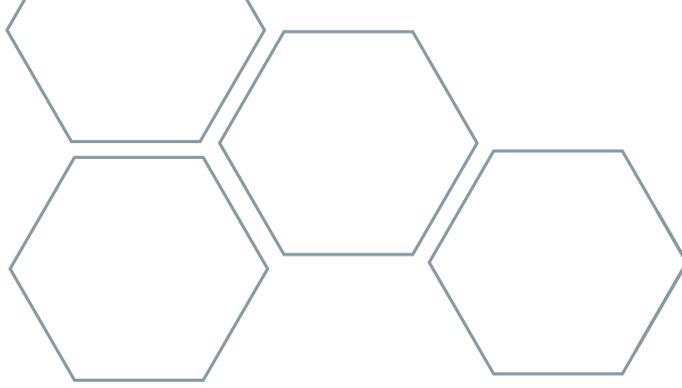


Healthcare Association
of New York State

**2017 PINNACLE AWARD FOR
QUALITY AND PATIENT SAFETY**

NOMINATION PROFILES





WE ARE PLEASED TO SHARE THIS ANNUAL COMPENDIUM

of the nominations for the HANYS Pinnacle Award for Quality and Patient Safety, which recognizes healthcare provider organizations that are playing a leading role in promoting improvements in healthcare quality in New York State.

HANYS IS PLEASED TO HIGHLIGHT THE 88 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 "Bea B. Grause". The signature is written in a cursive, flowing style.

Bea Grause, R.N., J.D.
President

2017 WINNERS

POST-ACUTE/ OUTPATIENT PROVIDER



BASSETT MEDICAL CENTER AND BASSETT MEDICAL GROUP, COOPERSTOWN

Achieving Electronic Clinical Quality Measure Success in an Integrated Healthcare System through a Team-Based Approach

Stephens Mundy (far left), HANYS Board Chair and President and Chief Executive Officer, The University of Vermont Health Network–Champlain Valley Physicians Hospital, and Robert Panzer, M.D. (far right), Chair of HANYS' Statewide Steering Committee on Quality Initiatives and Associate Vice President for Patient Care Quality and Safety and Chief Quality Officer, Strong

Memorial Hospital, stand with (from left) Bassett Medical Center's Martha Sunkenberg, Executive Director, Fox Practices; Anna Gaeta, Network Senior Director, Performance Improvement; Marie Maxson, R.N., B.S., Director, Quality Management and Clinical Effectiveness; and Ken Lentini, Manager, Data Analytics for Quality Performance/Improvement.

HOSPITAL WITH LESS THAN 200 BEDS



ST. JOSEPH HOSPITAL, BETHPAGE

Reducing Rule-Based Error: Implementation of PDSA and its Impact on Alarm Fatigue

(Left to right) Barbara Gibbons, Chief Nursing Officer; Suzanne Molina, Nurse Manager, Telemetry; Elaine Rowinski, Director of Nursing Critical Care; and Christopher Cells, Director of Nursing Quality and Informatics, all from St. Joseph Hospital, Bethpage, pose with presenter Stephens Mundy, HANYS Board Chair and President and

Chief Executive Officer, The University of Vermont Health Network–Champlain Valley Physicians Hospital and Robert Panzer, M.D., Chair of HANYS' Statewide Steering 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. CATHERINE OF SIENA MEDICAL CENTER, SMITHTOWN

Improving Patient Outcomes through Collaboration with Emergency Medical Services to Enhance Quality of Pre-Hospital Communication

Presenter Stephens Mundy (far left), HANYS Board Chair and President and Chief Executive Officer, The University of Vermont Health Network–Champlain Valley Physicians Hospital, is pictured with representatives from St. Catherine of Siena Medical Center: Catherine Videtto, Coordinator of Stroke Program; Mary Jane Finnegan, Chief

Nursing Officer; and Paul Rowland, Executive Vice President and Chief Administration Officer; alongside Robert Panzer, M.D. (far right), Associate Vice President for Patient Care Quality and Safety and Chief Quality Officer, Strong Memorial Hospital, and Chair of HANYS' Statewide Steering Committee on Quality Initiatives.

**SYSTEM OR HOSPITAL
WITH 500+ BEDS**



NYU LANGONE MEDICAL CENTER, MANHATTAN

Discharge Before Noon Initiative: Our Success in Improving Patient Care by Increasing Efficiency

Katherine A. Hochman, M.D., F.H.M., M.B.A., Associate Chair for Quality, Department of Medicine, Assistant Chief of Medicine, NYU Langone Medical Center, stands alongside Thomas Sedgwick (second from left), Senior Director of Social Work, NYU Langone Medical Center. Also pictured are Stephens Mundy (far left), President and Chief Executive Officer, The University

of Vermont Health Network–Champlain Valley Physicians Hospital and HANYS Board Chair, and Robert Panzer, M.D. (far right), Associate Vice President for Patient Care Quality and Safety and Chief Quality Officer, Strong Memorial Hospital, and Chair of HANYS' Statewide Steering Committee on Quality Initiatives.

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CHAPTER 1
**CLINICAL
IMPROVEMENTS**



Achieving Electronic Clinical Quality Measure Success in an Integrated Healthcare System through a Team-Based Approach

BASSETT MEDICAL CENTER, COOPERSTOWN

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Bassett Medical Center established a performance improvement quality metrics workgroup, data analytics team, and performance improvement executive council to increase access to the real-time information needed to improve patient outcomes and experience of care, and enhance performance on quality indicators.

The teams chose to use Kotter's Change Management model and Plan-Do-Study-Act (PDSA) methodologies. Through a comprehensive analysis of 76 clinical quality measures, the team prioritized hypertension and diabetes. Smaller teams were established to discuss and record process and work flows with subject matter experts (SMEs). Comprehensive work analyses were documented in great detail (e.g., end-to-end methodology for taking blood pressure).

Performance improvement advisories and evidence-based protocols and guidelines were developed for hypertension and diabetes in coordination with clinical SMEs. A toolbox of resources and educational tools is linked directly from the data source. The initiative resulted in a positive impact on disease management.

OUTCOMES ACHIEVED

- Hypertension control increased 11% (2015: 69.9%; 2016: 77.6%).
- 10% increase in hypertension screening in the diabetic patient (2015: 72.9%; 2016: 80.4%).
- Depression screening increased 98% (2015: 39.2%; 2016: 77.5%).
- Nephropathy screening in the diabetic patient increased 7% (2015: 81.0%; 2016: 86.7%).

LESSONS LEARNED

- Getting and keeping all the right people at the table (alignment) and working within an organized and steady structure (communication) is essential to planned and effective change. Physician leadership and engagement are critical.
- Provider and leader access to accurate patient-, clinic-, and organizational-level data for all measures is imperative.
- Executive leadership support through establishment of the performance improvement executive council ensured resources and guidance were available.

Radiation Dose Reduction for Patients Undergoing CT Examinations

JAMAICA HOSPITAL MEDICAL CENTER, QUEENS

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To better serve patients by reducing radiation doses, Jamaica Hospital Medical Center installed two new computerized tomography (CT) scanners with dose reduction software. Medical physicist, radiologist, and vendor application specialists worked together to optimize radiation dose and image quality for both scanners, which were located in the emergency department and in main radiology.

“Dose watch” software was also installed and is used for all CT exams. The CT supervisor is alerted to any exam that is above the thresholds set by the medical physicist and dose watch application specialist.

All alerts that exceed thresholds are reviewed by the CT supervisor for appropriateness and documentation. A radiation dose committee was established, which meets quarterly to evaluate, discuss, and continually monitor radiation doses.

National benchmark data were obtained from the American College of Radiology (ACR) Dose Index Registry to help understand and monitor the doses. Abdomen, pelvis, and chest CTs were initially chosen, since they were the exams that were more out of line with the ACR Dose Index Registry. The hospital brought in the CT scanner vendor, physicist, and radiologists to adjust protocols and to reduce the radiation dose by increasing dose reduction algorithms.

OUTCOMES ACHIEVED

- The team scrutinized dose watch alerts for reasons and possible solutions.
- All personnel became more aware of CT doses.
- Technologists were more aware of trying to limit patient motion.
- Protocols were adjusted to limit additional sequences where possible.
- Doses decreased significantly.
- The doses for these exams are now lower than national averages, thus ensuring that patients receive the lowest possible dose with the highest quality images.

LESSONS LEARNED

- A team approach involving radiologists, technologists, and medical physicists created greater awareness of patient radiation doses.
- Adding technologists to the initiative created better understanding and demonstrated that their help is needed and directly affects patient dose.
- Don't assume you are doing a good job without data and comparison benchmarking.

Safety Initiative for Diabetic Patients: Coordinating Meal Tray Delivery with Insulin Administration

JOHN T. MATHER MEMORIAL HOSPITAL, PORT JEFFERSON

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In December 2015, John T. Mather Memorial Hospital created an inter-professional committee to explore medication safety. The committee completed a Failure Mode and Effects Analysis, which demonstrated a high risk for complications surrounding insulin administration and time of meal tray delivery. Time delays between insulin administration and the intake of food placed patients at risk for poor clinical outcomes. As a member of the pharmacy and nursing committee, a clinical nurse was empowered by the chief nursing officer to conduct an evidence-based project aimed at identifying the existence and scope of patient safety problems, developing an action plan, implementing practice change, and improving outcomes.

Nursing conducted a comprehensive review of the literature and shared the results with the directors of food and nutritional services, pharmacy, and nursing informatics. Results of a retrospective medical record review indicated 33% of inpatients had a primary or secondary diagnosis of Type 2 diabetes. Pre-intervention data indicated the average time between insulin administration and meal tray delivery was 60 minutes, leading to more than 400 critical glucometer values. These findings substantiated the results of the risk stratification identified in the Failure Mode and Effects Analysis.

OUTCOMES ACHIEVED

- Critical glucometer results decreased.
- The average time between insulin administration and meal tray delivery is less than 15 minutes across the organization, surpassing the Food and Drug Administration recommendation.

LESSONS LEARNED

- It is imperative to create an inter-professional team based on respect and clear communication to break down silos.
- Comprehensive data mining is essential to validate actual or perceived patient safety issues.
- All quality initiatives need collaboration—from the boardroom to the bedside—to ensure accountability and sustainability.

Development of an Interactive CPOE Communication Tool to Reduce Patient Risk for Anticoagulation Therapy

PUTNAM HOSPITAL CENTER, CARMEL

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Reducing the likelihood of patient harm associated with the use of anti-coagulant therapy is one of The Joint Commission's National Patient Safety Goals. Patients are at increased risk if their laboratory values for coagulation fall outside normal values. It is a safe practice to obtain an International Normalized Ratio (INR) result prior to the first dose administration of warfarin.

This initiative at Putnam Hospital Center successfully developed an interactive alert whereby a practitioner is prompted about a patient's INR when ordering warfarin. The practitioner can act directly on the "alert" message tab to achieve the following:

- determine the INR value (if one exists) and whether it is super or sub-therapeutic;
- order an INR, if it does not exist;
- document a bleeding assessment if an INR is not required by the practitioner at the time of warfarin order entry;
- alert nurses of the INR or assessment documentation at the point of care/medication administration; and
- eliminate the need for the ordering practitioner to move out of the medication order entry screen to check INR lab results, progress notes, or order labs.

OUTCOMES ACHIEVED

- Customization enhanced a proactive and robust pharmacist-driven anticoagulation program.
- Physician/practitioner satisfaction, efficiency, and safety increased.
- Performance improvement compliance has moved toward achieving the 100% benchmark.
- The hospital achieved and sustained results above the 2015 baseline of 98% to 100% compliance in 2016.
- The team easily identified outlier practitioners for direct individualized follow-up.
- The hospital added functionality in the Cerner system for the pharmacist to electronically document bleeding risk.
- The Joint Commission commended Putnam Hospital Center on its early results at the inception of this initiative.
- The "interactive alert" allows the practitioner to execute labs, documentation, and warfarin orders from the "alert message."
- The hospital developed a training video for practitioners.

LESSONS LEARNED

- Putnam Hospital Center realized the need for a formalized "Job-Aide" to assist in maintaining compliance to the work-redesign for warfarin/anticoagulation medication orders.
- Robust pharmacist-driven monitoring is essential for successful follow-up and early or concurrent detection of practitioner outliers.

Decreasing Sepsis Mortalities Using Best Practices and Innovative Strategies

PUTNAM HOSPITAL CENTER, CARMEL

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A multidisciplinary team at Putnam Hospital Center undertook an initiative to incorporate best practices and innovative interventions to reduce the number of sepsis deaths within the hospital. The project focused on education, early recognition, and prompt intervention.

Given that 85% of septic patients presented to the emergency department with signs of the illness, a screening tool was developed and incorporated into the electronic medical record for use upon initial presentation. When screenings indicate sepsis is suspected, a “Code Sepsis” emergency broadcast is activated. The patient is brought immediately to a bed where a sepsis team responds.

In addition to the creation of the screening, broadcast, and team, a variation was discovered in antibiotic administration timing. A “Code Sepsis Kit” was made available at the bedside that includes single doses of antibiotics recommended for the treatment of sepsis, which eliminated delays due to medication unavailability.

OUTCOMES ACHIEVED

- Sepsis mortalities were reduced by 62% from 2015 to 2016.
- Sepsis treatment three-hour bundle adherence scores increased from 47th in the third quarter of 2015 to 91st in the third quarter of 2016.
- Sepsis treatment six-hour bundle adherence scores increased from 61st in the third quarter of 2015 to 98th in the third quarter of 2016.

LESSONS LEARNED

- Ensuring medication is immediately available enables prompt treatment for septic patients.
- Standardized processes increase sepsis bundle compliance.
- Broadcasting “Code Sepsis” in the same fashion as “Code Stroke” or “Code STEMI” enforces the sense of urgency needed to improve mortality rates.

Preventing Wrong Patient Electronic Orders in the Emergency Department

SBH HEALTH SYSTEM, BRONX

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Patient computerized provider order entry (CPOE) errors can lead to significant morbidity and mortality. To reduce wrong-patient CPOE errors at SBH Health, the organization developed an alert that required the ordering clinician to verify the identity (ID) of the patient.

SBH completed an assessment of the current error rate using a “retract and reorder” tool, which flags orders that have been placed for one patient and are then canceled and added to another patient’s chart by the same clinician within a ten-minute timeframe.

Next, SBH implemented an ID re-entry function, which alerts the prescriber to enter the patient’s initials and year of birth at the beginning of the order entry session. This active double identification system is in line with The Joint Commission’s National Patient Safety Goal of using at least two patient identifiers when providing care, treatment, and services. This system allows prescribers to proceed with the ordering process only when the above-mentioned patient information is entered correctly within two tries. If the prescriber failed two tries, a final alert is generated and the system will not allow the prescriber to proceed with the order.

OUTCOMES ACHIEVED

2015–Eight-Week Pilot:

- Emergency department (ED) near-miss events decreased 35%.
- There was a 49% decrease in ED near-miss CPOE events as a percentage of all (system-wide) CPOE near-miss events.

2016:

- The decrease in ED near-miss events was sustained.

LESSONS LEARNED

- The biggest challenges in implementing this project were unrelated information technology issues that delayed the start date.
- Testing is critical to ensure information technology systems are working as planned and that proposed changes do not have unintended consequences.

The Impact of the Pharmacist on the Medication Reconciliation Process: A Patient Safety Initiative

ST. CATHERINE OF SIENA MEDICAL CENTER, SMITHTOWN

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A complete and accurate medication list that compares medications the patient is taking at home to what is ordered in the hospital is critical to ensuring medication safety through all phases of care. An accurate prior-to-admission (PTA) medication list in the electronic medical record (EMR) saves time for the nurse and physician, and improves patient outcomes. Erroneous medication dosages/routes, etc. can follow patients through their admission, discharge, and possibly the next admission, since the PTA medications pull into the EMR from the last discharge.

The medication reconciliation pharmacist program began in February 2015. Key stakeholders were engaged from the initial planning stage, which included emergency department physicians and nurses, and hospitalists. The pharmacist completes a review of all medications by interviewing the patient and his or her family and calling nursing homes/assisted living facilities, if necessary. The medication reconciliation pharmacist stops drug interactions, duplications, and non-formulary medications from being prescribed. He/she targets congestive heart failure (CHF)/chronic obstructive pulmonary disease (COPD) admissions and has the potential to stop readmissions, facilitate early discharges, and help improve patient safety and satisfaction. The physicians appreciate this valuable resource and the rapport that has developed between them.

OUTCOMES ACHIEVED

- During a four-month review period, 2,971 errors were prevented and corrected prior to being ordered by providers for 917 patients.
- The hospital realized an estimated return on investment (ROI) at a four-month evaluation and 12-month projection of \$205,925 and \$617,760, respectively.
- PTA medication lists were more complete and accurate for the provider, which improved patient safety and outcomes from admission up to and after discharge.

LESSONS LEARNED

- With support from the EMR user group, the pharmacist has improved the way data are collected and calculated, to give a more in-depth view of the success of the program and the impact on patient safety.
- Due to the enormous impact on patient safety, an additional half-time pharmacist position was added solely for medication reconciliation. This speaks to the positive outcomes and value the pharmacist was exemplifying in turn, showing the need for 24/7 pharmacist coverage.
- Focusing on admitted patients and those likely for readmission, including CHF, COPD, pneumonia, and stroke patients, proved to be a good strategy.

Sepsis Early Recognition and Treatment

ST. FRANCIS HOSPITAL, THE HEART CENTER, ROSLYN

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Early identification and treatment of the septic patient has been a priority for St Francis Hospital, The Heart Center. As a result, the hospital assembled a multi-disciplinary team to improve recognition timeliness and treatment protocols for positive patient outcomes, including reducing morbidity and mortality.

The hospital has a particularly challenging case mix, due to high volume of cardiac patients and high proportions of elderly and transfer patients. The underlying comorbidities often impose great challenges to the early identification and treatment of sepsis cases.

To overcome these challenges, St. Francis Hospital started to review all sepsis cases for compliance with the sepsis protocol. Cases that do not comply with the protocol are reviewed by a multidisciplinary team. If the team identifies an opportunity for improvement, it will address the underlying reason for deviation. Feedback is provided to the involved individual, as well as to senior leadership. If underlying patterns or trends are identified that contribute to the deviation, the team will review and evaluate corrective actions. These actions could include education and/or process redesign to promote compliance.

OUTCOMES ACHIEVED

From the first quarter of 2015 to the third quarter of 2016:

- performance on the sepsis three-hour bundle improved 23.6%;
- timely lactate level improved 14.4%;
- timely blood cultures improved 16.7%; and
- timely antibiotics improved 7.7%.

LESSONS LEARNED

- Reduce best practice advisory alert fatigue so staff readily recognize the patient may be septic.
- Effective handoff communication and accurate and timely documentation among all staff are essential to ensure effective processes.
- Accurate and timely feedback to involved staff regarding compliance are essential to improve and sustain performance.

Reducing Rule-Based Error: Implementation of PDSA and its Impact on Alarm Fatigue

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The Joint Commission has made the management of clinical alarms a National Patient Safety Goal. In November 2015, an analysis of clinical alarms in a 32-bed unit at St. Joseph Hospital found that about six million visual and audio alarms are generated annually, equivalent to approximately three million patient events. This outnumbers the actual amount of interventions the hospital performed.

In recognizing the over-generated alarms problem, in December 2015, an interdisciplinary team consisting of nursing administration, nursing education, cardiology, biomedical engineering, monitor technicians, and frontline nursing staff decided to use the Plan-Do-Study-Act model for process improvement.

The project's main foci were:

- risk-stratifying and categorizing alarms by severity;
- changing nursing practice for lead placement to improve the alarm signal;
- having clinical experts educate the staff on the importance of alarm management; and
- drafting policies and procedures with frontline personnel to promote sustainability.

The implementation of this initiative resulted in improvements in alarm generation and quietness of environment, without jeopardizing patient care, measured by the number of transfers to a high level of care.

OUTCOMES ACHIEVED

- St. Joseph Hospital achieved a 39% reduction in non-critical clinical alarms per patient day. If there were no changes made, it is estimated that an additional 820,000 non-critical clinical alarms (visual and audio) would have been generated from the months of July through December.
- Transfers to a higher level of care decreased 9.6% post-initiative.
- There was a 26% improvement in the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) "Quietness of Room at Night" question, compared to the six months prior to implementation.

LESSONS LEARNED

- Early-stage risk stratification can highlight the small changes that can have a large impact. Impactful successes early on ease the burden of change management moving forward.
- All personnel affected by a change in policy should be adequately represented during the drafting phases to increase the likelihood of overlap between policy and practice.
- Patient experience and quality improvement are not dichotomous. Improvements to HCAHPS performance and the patient experience can be a natural byproduct of well thought-out patient safety and quality improvement initiatives.

Improving Medication Reconciliation

THE BROOKLYN HOSPITAL CENTER

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Failure to reconcile new prescriptions with ongoing home medications and inadequate reconciliation in handoffs during admission, transfer, and discharge of patients can result in patient harm.

The goal of this project was to improve and sustain medication reconciliation rates from below 90% in 2015 to 90% or above by the end of 2016, which is consistent with The Joint Commission's National Patient Safety Goal. A multidisciplinary group including attending physicians and residents, nursing champions, pharmacy, information technology managers, and quality managers was convened to conduct The Joint Commission's recommended healthcare Failure Mode and Effects Analysis. Possible effects that the failure of a process could have on patients were scored, and the most severe failure modes were prioritized. The team identified opportunities at admission, transfer, and discharge. The team used best practices and the new Joint Commission requirements to identify solutions that would have a high impact on improving the process. The project involved:

- policy changes;
- practice changes;
- comprehensive staff education;
- a correction plan; and
- a monitoring plan.

OUTCOMES ACHIEVED

- Home medication collection improved from 74% to 97%.
- Admission reconciliation improved from 80% to 97%.
- Discharge reconciliation improved from 73% to 97%.

LESSONS LEARNED

- Leadership support with continual involvement, focus, and commitment is integral to the success of a medication reconciliation project.
- Staff/physician ownership of the measure led to success of the initiative.
- Communicating feedback to staff and management and developing a communication plan for raising awareness of the project within the organization is crucial.

Antimicrobial Stewardship Program

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To combat the misuse of antibiotics, which contributes to the rise of multi drug-resistant bacteria such as *Clostridium difficile* (*C. difficile*), The Brooklyn Hospital Center initiated a deep-rooted antimicrobial stewardship program (ASP) in 2005. Initially, the goal was to provide oversight of the use of antimicrobial agents, but over the last decade, several performance improvement projects have been built on the ASP program. The pharmacy-driven initiative that drastically changed the hospital's approach to antimicrobial selection and initiation was studied in 2012. The creation and the implementation of a Rapid Administration of Antimicrobials by an Infectious Disease Specialist (RAAIDS) protocol resulted in a significantly faster antibiotic order entry, verification, and administration of empirical antibiotics in patients with bacteremia.

The ASP committee consists of a multidisciplinary team that includes infectious disease (ID) attendings, an ID pharmacist, a PGY2 ID pharmacy resident, a 24-hour on-call pharmacotherapist, nursing champions, a microbiologist, an infection preventionist, and quality management professionals.

OUTCOMES ACHIEVED

- The time of first antibiotic dose is reduced from a median of nine hours to one hour, and there was an 85% reduction in administration delays.
- The *C. difficile* standard infection ratio (SIR) remained below the national SIR for over five years.

LESSONS LEARNED

- Leadership support with continual involvement, focus, and commitment is integral to the success of the project.
- Communicating feedback to staff and management and developing a communication plan for raising awareness of the project was key.
- Multidisciplinary involvement is needed to address all aspects of the initiative.
- Fighting drug resistance is a constant battle.

Inter-Professional Antimicrobial Stewardship Program

UPPER ALLEGHENY HEALTH SYSTEM, OLEAN

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After noting rising trends in the hospital-onset *Clostridium difficile* (*C. difficile*) rate, increased use of broad-spectrum antimicrobials, and a worsening antibiogram, Upper Allegheny Health System's Pharmacy and Therapeutics (P&T) Committee created a system-wide multidisciplinary Antimicrobial Stewardship Program (ASP). An antimicrobial stewardship sub-committee meets bimonthly to lead the project and includes representatives from pharmacy, lab, nursing, providers, information technology, clinical education, infection prevention, quality, administration, microbiology, and respiratory therapy. Administration formally supports ASP.

Through ASP, new computerized provider order entry (CPOE) sets were implemented for common infections by enacting specific criteria for ordering the broadest or most costly antimicrobial agents. Prescribers were provided tools to choose appropriate medication, doses, routes, and therapy lengths with the option for extending treatment when clinical necessary. A protocol that allows the pharmacists to automatically initiate appropriate therapy for *C. difficile* was created. The protocol empowered nursing to automatically collect a stool culture from any patient with diarrhea and expanded the role of the infection prevention and laboratory departments as key to raising the alarm when a patient was identified as *C. difficile*-positive.

Clinical education and pharmacy departments work cooperatively to educate and to disseminate routine information. Pharmacy staff also underwent ASP-specific training for several months.

OUTCOMES ACHIEVED

- The hospital-onset *C. difficile* rate was reduced below the National Healthcare Safety Network (NHSN) benchmark (< 11.3 cases/10,000 patient days) since initiation of ASP.
- Utilization of broad-spectrum antimicrobials trended down to less than 100 doses/1,000 patient days for each medication monitored.
- Tracking of ASP-related metrics demonstrates high numbers of appropriate use.

LESSONS LEARNED

- High-level antimicrobial stewardship is achievable, even in small, rural hospitals with limited access to infectious disease physicians.
- An effective ASP must take an inter-professional approach.
- In hospitals where formal infectious disease healthcare providers are scarce, pharmacy is ideally situated to coordinate and spearhead ASP efforts.



CHAPTER 2
**ENHANCING CULTURE AND
ACHIEVING HIGH RELIABILITY**



Interdisciplinary Rounding Improves Communication, Decreases Length of Stay, and Decreases Cost per Discharge

A. O. FOX MEMORIAL HOSPITAL, ONEONTA

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In recognition of the benefits of interdisciplinary rounding, which improves efficient use of time and resources and streamlines the facilitation of care interventions for patients, A. O. Fox Memorial Hospital's vice president of nursing, with support from the senior leadership team and the medical director of the hospitalist service, implemented structured, daily, interdisciplinary rounds (IDRs).

Participants include: all on-duty hospitalist team members, along with representatives from the departments of nursing, pharmacy, rehabilitation services, nutrition services, respiratory therapy, lab, medical imaging, case management, discharge planning, utilization review, physical plant, environmental services, quality, and senior leadership.

Interdisciplinary rounds are held daily, limited to 30 minutes, in a conference room located near the nursing units. Members receive an electronic report generated from the electronic medical record (EMR) system providing basic information about all inpatients and patients who have been placed into observation status. The team leaders (physician/physician assistant/nurse practitioner) provide the status/plan for each patient, with each discipline adding pertinent information or asking questions to clarify the care plan. Special attention is also paid to patients who are at high risk for fall or readmission and have been readmitted, and the status of the emergency department and surgical services. Following rounds, information is communicated back to the staff on the nursing units by the nurse managers.

OUTCOMES ACHIEVED

- Length of stay (LOS) decreased from 4.34 days in 2015 to 3.89 days in 2016.
- Improved patient experience scores relating to communication:
 - nursing (72% in 2015 to 81% in 2016);
 - physicians (72% in 2015 to 78% in 2016); and
 - medications (58% in 2015 to 68% in 2016).
- Decreased cost per discharge: \$7,695 in 2015 to \$6,946 in 2016.
- Decrease in medication errors: 103 in 2015, to 84 in 2016.
- Improvement in employee opinion survey score related to this question: "My entity makes every effort to deliver safe, error-free care" (4.19 in 2014 to 4.33 in 2016).

LESSONS LEARNED

- Physician engagement is key to the success of interdisciplinary rounds.
- Senior leadership support is crucial in setting the expectations.
- Structured discussion streamlines and increases the efficiency of the interdisciplinary rounds.
- The Plan-Do-Study-Act methodology works; don't give up!

Striving for High Reliability: Using Lean Methodologies to Reduce Stage III and IV Hospital-Acquired Pressure Injuries

ARNOT OGDEN MEDICAL CENTER, ELMIRA

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Arnot Ogden Medical Center strives to become a high reliability organization and identified stage III and IV hospital-acquired pressure injuries as an opportunity to optimize early interventions and improve patient outcomes. In January 2016, the hospital launched an initiative to decrease the number of hospital-acquired pressure injuries and ultimately eliminate stage III and IV pressure ulcers. Arnot Ogden used Lean methodologies to identify root causes and investigated the steps of its skin documentation and tracking processes. Each step of the processes was mapped out from admission to discharge. Data from 2014 through 2016 were collected and reviewed. Staff from multiple disciplines identified barriers and key areas for improvement.

OUTCOMES ACHIEVED

- The total number of hospital-acquired pressure injuries decreased by 57% from 2014 to 2016.
- Stage III and IV hospital-acquired pressure injuries decreased 71% from 2015 to 2016.
- The hospital has maintained a 12-month consecutive period (to date) with zero stage III and IV hospital-acquired pressure injuries.
- Earlier identification of pressure injuries led to earlier treatment, improved patient outcomes, higher patient satisfaction, and decreased length of stay.

LESSONS LEARNED

- Teamwork involving frontline staff participation and engagement improved patient outcomes.
- When properly identified, organizational issues are better tackled by a multidisciplinary team rather than a specific individual or small group. Frontline staff participation is invaluable to identify issues and improve outcomes.
- Simplify the process. Make it easy to do the right thing.
- Hardwiring these new processes through continuous communication, monitoring, follow-up, and education will result in ongoing, sustainable results.

Great Catch Program

CATHOLIC HEALTH SYSTEM, BUFFALO

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Catholic Health System recognized that despite some improvements achieved, more action is needed at the point of the occurrence to identify, intervene, and modify processes and behaviors that will result in the prevention of “near miss” events. A near miss is an unplanned event that did not result in injury, illness, or damage, but had the potential to do so.

The Great Catch program was developed to promote the identification and reporting of recommended process improvements by associates, providers, and residents. The reporting of a Great Catch has contributed to an overall safer environment and reduced patient harm events. This program is about celebrating a culture of safety and empowering associates to take the initiative to help improve the work environment and provide the safest level of care to patients. One of the key components of this program was the implementation of electronic occurrence reporting. This enhanced reporting system encouraged participation through a user-friendly and non-punitive reporting system.

OUTCOMES ACHIEVED

- More improvement opportunities have been identified, which resulted in proactively instituting measures that will prevent adverse events of death or permanent harm to a patient.
- The Great Catch program reduces harm and can save lives.
- This program engaged frontline associates to actively promote a culture of safety in their own work areas, resulting in a positive impact on the overall culture of safety.
- It became a valuable source of data for identifying patient safety priorities.
- Empowering staff to participate in new ideas and improvement initiatives resulted in greater associate engagement.

LESSONS LEARNED

- Increasing awareness of Great Catch reporting requires teamwork and support from the frontline staff, leadership, and providers.
- Instituting electronic occurrence reporting reduced the fear of retribution by enhancing the ability to report anonymously.
- The importance of celebrating and recognizing successes resulted in stronger engagement of all associates across the organization.

Safety Matters

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Patient safety is Columbia Memorial Hospital's highest priority. The focus of its Safety Matters Program is to sustain a culture of safety within the entire organization and to improve patient safety. The program's focus is prevention of all errors that may lead to harmful events.

In 2009, the hospital embarked on a highly-structured methodology that defines actions by staff, physicians, and administration to minimize errors and profoundly change culture. The project model is based on an in-depth safety culture diagnostic assessment and specific interventions. The plan has focused on all hospital staff and is designed to eliminate the number of serious safety events with in-house patient care services. Safety coach programs made 50 trained coaches available to facilitate the habit formation phase of patient safety culture change.

OUTCOMES ACHIEVED

- Columbia Memorial provided extensive staff education, including all physicians.
- The hospital-wide goals and effort reflect multiple National Patient Safety Goals (The Joint Commission) and continuously reduced the serious safety event rate from above 1.0 in 2008 (baseline year) to around 0.5 in 2012, and to consistently below 0.25 in 2013 through 2016.
- The hospital developed tools for the identification of safety behaviors and error prevention.
- Hand-off communication between shifts, units, and when a patient transfers to a different level of care were improved.

LESSONS LEARNED

- Hospital administration buy-in is essential; leadership methods improved effectiveness of communication among caregivers.
- All staff, ancillary staff, and physicians must be included in program implementation.
- A transparent and robust process is needed to learn from serious safety events and near misses; a strong accountability system drives individual compliance across the organization.
- Safety coach programs allow for sharing success stories and create an environment of fairness that reinforces behavior expectations without punishing individuals for unintended errors.

Using a “Coding Time-Out” to Validate HAC/HAI Identification and Reporting

GENEVA GENERAL HOSPITAL

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Geneva General Hospital is committed to achieving zero harm. To that end, its journey includes an established process goal to hard-wire evidence-based practices aimed at the prevention of hospital-acquired conditions (HACs) and hospital-acquired infections (HAIs).

A retrospective review of the medical records of 2013-2014 HAC/HAI cases revealed a validation gap between clinical findings and final coding, the latter of which was reported on claims and used by the Centers for Medicare and Medicaid Services to calculate the hospital's performance and payment reduction in the 2016 HAC Reduction Program. In fact, several of the cases that were reported on claims as HACs did not meet the clinical HAC criteria.

In calendar year (CY) 2016, through the collaboration of a multidisciplinary team, Geneva General Hospital expeditiously implemented a concurrent validation process, which takes place prior to final coding and claims submission. This proactive process has allowed the hospital to identify opportunities for improvement in provider documentation and in meeting staff and provider HAC education needs. As a result, a significant number of “coding-acquired events” were prevented in CY 2016.

OUTCOMES ACHIEVED

- Geneva General Hospital implemented a “coding time-out” for all potential HACs and HAIs.
- A process was hard-wired into the organization to require clinical review and validate all potential HACs and HAIs based on interpretative guidelines, prior to claims submission.
- 2016 Validation Performance: Between January 1 and December 31, 2016, 36 potential HACs/HAIs were avoided as a result of the coding validation process (all insurance classes) with 11 avoided HACs/HAIs specific to Medicare claims.
- This process resulted in a 40% overall reduction in coded HACs/HAIs from CY 2015 to CY 2016.
- Accuracy of provider awareness and documentation of HACs/HAIs increased.

LESSONS LEARNED

- Validation of all HACs and HAIs is essential to avoid “coding-acquired events.”
- Preventing “coding-acquired events” has positive quality reporting and financial impacts to healthcare organizations.
- The performance improvement department plays an essential role in “closing the validation gap” for all potential HACs and HAIs. This is accomplished through collaboration with the clinicians providing and documenting patient care and the coding department prior to final coding and claims submission.

Surgical Tray Injury Reduction Initiative

KENMORE MERCY HOSPITAL

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In October 2015, Kenmore Mercy Hospital's operating room (OR) associates expressed their concern regarding the perceived amount of injuries related to lifting surgical trays. In November 2015, the perioperative unit-based council met with the surgical technicians, sterile processing department (SPD), perioperative nurse clinical advisor, director of perioperative services, and the nurse safety officer to initiate the process of evaluating the surgical supply trays (SSTs).

The workgroup weighed each SST and identified which trays weighed 25 pounds or greater, the Association of Perioperative Registered Nurses standard. Instead of dividing over-weighted trays into multiple ones, which would increase the number of SSTs per case by 25%, the workgroup decided to apply visual reminders to reduce injuries.

The group differentiated SSTs weighing 25 pounds or greater by wrapping them with pink wrappings while others are wrapped in blue. This would serve as a visual cue to all perioperative staff that SSTs wrapped in blue would delineate trays less than 25 pounds and trays wrapped in pink, 25 pounds or greater. This process was then implemented with the vendor trays.

Placement of the SSTs in the OR was also a concern. Originally, the heavier SSTs were being placed on both the bottom and top rack on the case carts. After an ergonomic evaluation by physical therapy, the decision was made that all SSTs identified as weighing 25 pounds or greater would be placed in the center of the case carts to allow for the set up to be ergonomically correct. This is easily monitored by the visual identification of the pink-wrapped SSTs in the center in both the sterile processing department (SPD) and in the OR.

OUTCOMES ACHIEVED

- Since the time of implementation, there have been no injuries resulting from lifting trays.
- There has been better communication and comradery between the operating room and SPD since their work on the team project.
- A safety board shares the number of days without injury and milestone celebrations are held.

LESSONS LEARNED

- Get all the players involved early, including vendors.
- Get frontline staff involved in the solution from the beginning.
- Pre-schedule meetings on a regular basis so momentum is not lost.

Organ, Eye, and Tissue Donation Collaborative

MERCY HOSPITAL OF BUFFALO

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Mercy Hospital partnered with UNYTS, Inc., an organ, eye, and tissue procurement organization, to develop the 2016 Organ, Eye, and Tissue Donation Collaborative. This initiative involved a multidisciplinary team of the hospital's nursing leadership, physician leadership, and staff nurses, as well as the clinical donation specialists from UNYTS, Inc.

Mercy Hospital's aim was to increase the number of organ, eye, and tissue referrals at the hospital, thereby enhancing the amount of consented organ, eye, and tissue donors in 2016. This initiative focused on staff education through routine in-services on timely referrals to UNYTS, daily rounding in the critical care areas at the hospital to build relationships with staff members making the referrals, after-action reviews with the critical care teams post-donation, and participation in monthly critical care committee meetings with hospital leadership to share monthly referral and donation data. The hospital leadership actively enhanced hospital policies in support of the donation process and provided UNYTS, Inc. with tools to facilitate the donation process (i.e., hospital ID badges, electronic medical record access).

OUTCOMES ACHIEVED

- This program included 18 organ donors total, 49 organs procured for transplant, 36 kidneys procured (11 transplanted to local recipients), seven livers procured, four hearts procured, and two pairs of lungs procured.
- A total of 117 tissues were recovered and 130 birth tissues were collected.
- An organ donation conversion rate of 100% was achieved (goal: >75%).
- An organ donation referral rate of 98% was achieved (goal: 100%).
- A timely notification rate of 98% was achieved (goal: 100%).
- An effective request process rate of 97% was achieved (goal: 100%).
- A total death referral compliance rate of 100% was achieved (goal: 100%).

LESSONS LEARNED

- Educating physicians and advance practice providers on the importance of partnering with UNYTS, Inc. prior to discussion of donation options for families and their loved ones is crucial to the successful outcome of the donation process.
- Building a culture of donation awareness, support, and education requires a team effort to facilitate learning, recognize the opportunities to create organ referrals, and partner with UNYTS, Inc. for donation best practices.
- Facility policies, procedures, order sets, and electronic medical records documentation must be built, enacted, and taught in order to facilitate the donation process and achieve outcomes.

Improving Medication Barcode Scanning Compliance

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One serious medication error can do irrevocable harm to a patient and seriously threaten a healthcare organization's viability. Mercy Medical Center adopted barcode medication administration (BCMA) to improve patient safety. However, the BCMA compliance rate was relatively low (85% in 2013).

Recognizing the seriousness of this issue, both nursing and pharmacy began to review barcode scanning compliance by unit in September 2013. A number of issues were identified, such as medications not being scanned for convenience; medications lacking barcodes; patient labels covering barcodes; the same override reason being entered, not necessarily valid, negating the entry as useful data to guide improvement; a high number of high-risk, high-alert medications being overridden; and repeated incorrect overrides such as "bolus from a bag," when medication was an ointment.

Further drill-down was done to identify problematic processes, units, staff noncompliance, and medications trends. Findings were shared with nursing leadership, nurse managers, and pharmacy staff. Individual staff noncompliance was shared with all nurse managers, and reviewed with individual staff, focusing on patient safety. A plan of correction was developed for each issue that was identified.

OUTCOMES ACHIEVED

- By 2014, the bar code scanning compliance rate was increased to 95% from 85% in 2013.
- Through ongoing monitoring and education, the hospital has been able to maintain 98% compliance for 2105 and 2016.

LESSONS LEARNED

- Implementing BCMA systems requires increased collaboration and communication among nursing, pharmacy, and information technology staff.
- User-specific data are paramount in identifying outliers.
- Recognize and celebrate achievements.

Our Journey to High Reliability ... First Destination: Harm Awareness

OLEAN GENERAL HOSPITAL—UPPER ALLEGHENY HEALTH SYSTEM

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Care quality and patient safety are the top priorities at Olean General Hospital, and making a commitment to transparency is a key to promoting patient safety. In an effort to be transparent and raise staff awareness about the hospital's performance, in August 2014, Olean General Hospital began posting the daily avoidable patient harm score on its intranet homepage, front and center in distinctive colors, for all employees to see.

When employees open their computers, they see the intranet home page and an icon in a bright green field with a number in a bright red box. That number represents the number of total hospital harm events during the current month. When clicking on the number, the viewer opens a page showing breakdown of harm events across the organization for the current month and previous months in 11 harm categories. Descriptions are also available for the 11 harm categories, such as a patient fall with injury, an adverse drug event, a hospital-acquired infection or bed sore, and other preventable harm events.

Posting the harm score has become an engagement and motivational tool to enhance the culture of safety.

OUTCOMES ACHIEVED

- The daily posting of total patient harm scores on the hospital's intranet page enhances staff awareness of patient safety and helps to drive down total patient harm events to zero.
- Event reporting by staff increased.
- A decline in harm events was achieved over a three-year period, from a total of 54 events in 2014, to 50 in 2015, to 30 events in 2016.

LESSONS LEARNED

- Posting harm scores will not by itself reduce harm events, but it is an effective way to ensure overall organizational awareness.
- A disciplined approach to investigation, follow up, and recommendations for improvement involving staff at all levels is critical to reduce harm events.
- The harm score initiative must be coupled with the organization's overall safety program.

Achieving Quality through Improved Employee Engagement

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“Quality is the result of a carefully constructed cultural environment. It has to be the fabric of the organization, not part of the fabric.” ~Philip Crosby

The culture of an organization has a direct impact on patient quality measures. Oswego Hospital’s leadership is committed to improving quality measures by focusing on improving employee satisfaction and engagement. With the board’s support, employee forums identified teamwork, communication, compassion, quality, respect, and ownership as organizational values. In addition, leadership focused on visibility, communication, and transparency. During the “walk a mile in my shoes” program, executives were visible by not only offering support but also working side by side with employees in different roles. A director/chief executive officer blog and bi-monthly around the clock open forums were created to improve communication.

After reading and discussing the lessons explored in the book *The Florence Prescription* by Joe Tye, employees began to appreciate the positive effects of culture change. Participants in a first-ever organization-wide, off-site culture-building seminar discussed and contemplated actions to better improve the culture of the organization in three categories:

- What can I do?
- What can we do?
- What can all of us do?

Plans were developed and implemented throughout the facility. Extensive benefits and wage reviews, job descriptions, implementation of recognition programs such as the Nurse Levels Program, and a “Celebrate Everything” initiative further fostered a culture of ownership and teamwork across the organization.

OUTCOMES ACHIEVED

- Employee satisfaction increased from the eighth percentile to the 52nd percentile, nationally.
- The Leapfrog quality score improved from a C to an A.
- Oswego Hospital received the Patient Safety and Excellence Award from Healthgrades.
- The hospital had a successful survey by The Joint Commission in June 2016.
- Oswego Hospital was recognized as an Excellus Hospital of Distinction for Maternity Care.
- There was improvement in patient satisfaction and fewer patient complaints.

LESSONS LEARNED

- Active listening by senior leadership provides insight on employee needs and fosters ownership among employees throughout the organization.
- Increased communication, transparency, and visibility by senior leadership improves employee engagement/satisfaction.
- Increased employee engagement improves patient quality and satisfaction measures.

Difficult Airway Response Team

STRONG MEMORIAL HOSPITAL, ROCHESTER

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Adverse airway events, while infrequent, were identified as a cause of significant harm to patients. Strong Memorial Hospital created a Difficult Airway Response Team (DART) in September 2015 in response to the findings from a comprehensive review of the adverse airway events occurring in the non-operating room (OR) areas at the institution. The following issues were identified: inconsistency in communication process; limited access to experienced experts and necessary equipment; lack of knowledge on airway support and specialized and advanced airway techniques in non-OR areas; and lack of clear roles during difficult airway events.

The goal of the initiative was to achieve high reliability in airway management outside the OR by preventing irreversible anoxic brain injuries and mortalities associated with the inability to properly ventilate and oxygenate the patient in a timely manner.

During the implementation process, efforts included organizing the paging system to ensure quick arrival of multiple experienced personnel with expertise in difficult airway management; creating difficult airway carts to decrease the time to mobilize equipment for difficult/surgical airway management; and developing a multidisciplinary educational program in difficult airway management.

OUTCOMES ACHIEVED

- There were 27 activations of the DART team in 15 months; 100% of activations resulted in successful management of the difficult airway at out-of-OR locations.
- Zero cases of irreversible brain damage occurred due to “cannot intubate, cannot ventilate” since DART implementation.

LESSONS LEARNED

- A team-centered approach to difficult airway management ensures increased patient safety and decreased occurrence of brain injury and mortality.
- Multidisciplinary education across the institution is needed for successful implementation.
- Ready availability of appropriate equipment (DART carts) decreases time to establish an airway, thereby reducing the likelihood of injury.



CHAPTER 3
**IMPROVEMENTS ACROSS
THE CARE CONTINUUM**



A Journey to Reduce Preventable COPD ED Visits

BROOKHAVEN MEMORIAL HOSPITAL CENTER, PATCHOGUE

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In a catchment area of 400,000 residents, six percent of the population presenting to Brookhaven Memorial Hospital Center's emergency department (ED) are "super utilizers," accounting for a disproportionate level of ED visits (38%) and inpatient admissions (52%). The hospital implemented a multi-step approach to manage their care and decrease hospital dependency; these steps include patient identification, planning, management, and follow-up.

The hospital analysis revealed that 62 patients contributed to 432 chronic obstructive pulmonary disease (COPD) ED visits, and 27 patients contributed to 71 COPD readmissions.

A multidisciplinary collaborative approach with weekly team meetings helped facilitate communication and resolution of identified challenges. The key to the planning phase was psycho-social assessments by social workers. Social workers were also important to the management phase, as was creating a structured care pathway encompassing a multidisciplinary collaborative approach.

Education about the benefits of Health Home enrollment resulted in a culture change in the staff's approach to care. Home visits helped to identify key factors of utilization, and a home care assessment tool to identify the priority needs for each patient was vital. The team identified the needs of these patients, even before they visited the ED.

OUTCOMES ACHIEVED

- Of the original super utilizer cohort, 85% were engaged by the team, 70% were enrolled in a Health Home, and 75% are now connected to home care and/or other community resources.
- There were significant reductions in ED visits for COPD patients (46%).
- Inpatient admissions for COPD patients were reduced by 40%.
- COPD readmissions decreased by 32%.

LESSONS LEARNED

- Patients: A more engaging process with a linkage to community-based organizations is necessary. The importance of regular community contact for the super utilizers cannot be overstated.
- Process: Process maintenance is as important as process generation.
- Teams: Frequent and high-touch contact by consistent resources builds relationships. Key insight in patient care is gained through a culture of support and teamwork, along with development of resource partnerships.

Reducing Preventable 30-Day Re-Hospitalizations for Patients with Heart Failure through Home Telemonitoring

CATHOLIC HOME CARE, FARMINGDALE

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Clinical guidelines emphasize that post-discharge systems of care, such as telemonitoring, should be used to facilitate the transition to effective outpatient care and disease management. Catholic Home Care used the Plan-Do-Study-Act process to address the difficulties faced by patients and caregivers, who are often given the responsibility of taking control over their chronic disease processes with minimal preparation.

The telehealth program provided education and support for patients diagnosed with heart failure (HF) using advanced biometric technology and specially trained registered nurses and support staff. Through the daily use of this equipment, combined with support and education received from the telehealth team, the patient/caregiver is equipped with the skills and support needed to manage this disease process, minimizing the potential for additional clinical complications.

OUTCOMES ACHIEVED

- Catholic Home Care increased admission of HF patients in the telehealth program.
- The telehealth program boasts a 90% and 91% patient satisfaction rating in 2015 and 2016, respectively, with a 70% to 75% return rate of patient surveys.
- The 2016 all-cause re-hospitalization rate for HF patients receiving telehealth services was 13.3%, compared to an average of 26.6% of the agency's all-HF patients.
- HF-related 30-day readmissions for patients on telehealth were lower than 7% in 2016.
- Enhanced transparency of patient data was achieved by instantaneous integration into the electronic medical record for easy accessibility by all clinicians involved in the care of the patient.

LESSONS LEARNED

- Telehealth is an effective component of patient-centered care and outcomes, effectively reducing the readmission rate of patients with HF by providing transitional support from the acute to post-acute phase of care.
- Daily monitoring combined with the incorporation of evidence-based practice allows for early detection of subtle changes in clinical status, resulting in early intervention of symptom management.
- Promoting patient/caregiver engagement to support lifestyle changes through behavior modification lays the groundwork for efficient self-management.

Emergency Department High Utilizer Reduction Initiative

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The organizations implemented a High Utilizer project to reduce emergency department (ED) visits driven by Medicaid or uninsured patients characterized by a combination of behavioral health issues, substance abuse issues, social isolation, and chronic medical conditions, often complicated by an acute life crisis.

The High Utilizer project employed a Rapid Cycle Continuous Improvement methodology, using data to identify and track ED activity by the target population. Subsequently, patient-specific issues driving the utilization were identified and a collaborative, individualized care plan was developed after consent by the individual. Ultimately, the team sought virtual system integration across numerous organizations and agencies to address individual patient needs and reduce ED visits.

OUTCOMES ACHIEVED

- In the initial cohort, there were 28 patients who had three months of pre-visit history of high utilization, followed by an index visit with assessment, an intervention, and three months of follow-up post-intervention. In this group, overall utilization was reduced 74%.
- An original cohort of 107 patients with ten or more visits generated a total of 1,628 ED visits in 2015. In 2016, the number of ED visits was reduced to 1,015, and 82 out of the 107 patients visited the ED less often.
- Through the real-time alert system, emerging super-utilizers are identified outside of the original cohort. To date, more than 100 patients have been discussed at team meetings with more than 90 formal multidisciplinary care plans.
- Working relationships between multiple community-based organizations, the hospital ED, the Patient-Centered Medical Home, and social services have created new opportunities for patient-centered approaches.

LESSONS LEARNED

- Super-utilizers are a unique population that is dynamic and often in crisis. Contact with these individuals is best made in the ED, but they are best served through a combination of primary care and support from other community-based organizations.
- Persistence is required to build the trust needed to get to the core issues driving each person's utilization.
- A full-time coordinator is needed to transition from a pilot to a program and expand into other super-utilizer populations.

Improving Health Literacy in the Congestive Heart Failure Patient Population

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Erie County Medical Center developed a structured health literacy program for congestive heart failure patients to improve medication adherence and self-care. A hospital-wide multidisciplinary team including nursing, dietitians, physicians, and case management adopted multiple educational approaches such as bedside teaching, food model demonstration, food menu selection, supermarket instruction, post-hospitalization discharge telephone calls, and utilization of teach-back instruction methods for patient education.

For instance, the food model demonstrations include the use of models of common foods with education regarding nutritional values. Patients can see common foods with a visual representation of the amount of sodium present. Education regarding daily recommended sodium intake compared to common foods is presented with visual and tactile materials. The inpatient food menu was revised to include visual cues for healthy choices.

Supermarket instruction is provided by staff educating patients regarding techniques to improve food selections when shopping, using budgets appropriately, and making healthy choices. Teach-back was added to confirm patient comprehension and recall of information presented.

OUTCOMES ACHIEVED

- The percentage of patients who received 60 minutes or more of heart failure education increased by 108%: 46.2% in 2012 vs. 96.4% in 2016.
- The majority of patients reported that they decreased their consumption of canned soups/vegetables and fast food, post-hospitalization.
- The percentage of patients with a scheduled follow-up visit within seven days or less after hospital discharge increased by 123%; 37.7% in 2012 vs. 84.1% in 2016.
- In 2016, more than 99% of patients reported that they have a clear understanding of the dose, route, and frequency of new and continued medications post-hospitalization.
- The percentage of patients who successfully obtained prescriptions for new medications and had them available to take as prescribed post-discharge increased to 94% in 2016.

LESSONS LEARNED

- Healthcare professionals must remain accountable to their patients and ensure that they receive the appropriate level of education based on their health literacy level.
- A multidisciplinary approach to patient education is essential to ensure that patients receive sufficient and appropriate information regarding heart failure management
- Visualization of foods and sodium content make an impact on patient's dietary selections.

Improving Compliance with Radiology Recommendations: Preventing Patients from Falling through the Cracks

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To ensure the follow-up recommendations are being performed for patients with unexpected, incidental radiology findings, F. F. Thompson Hospital developed a three-stage follow-up tracking system program that serves as a safety net to back up existing tracking within primary care providers' (PCP) offices. The program's goal is to reduce the risk of delay in diagnosis and timely treatment.

This automated database tracks unconditional recommendations for all patients seen at the hospital. Each radiology recommendation in the tracking database requires a specific imaging modality or modalities that would satisfy the recommendation, and a due date. F. F. Thompson Hospital hired a clerical navigator to handle sequential interventions:

- One month after recommendation due date, the navigator re-sends the radiology report with the recommendation, along with a cover letter explaining the follow-up program.
- One month after resending the report, the navigator calls the PCP, offering to assist with scheduling.
- The radiologist calls the PCP if the exam still has not been completed after another month.
- The program also sends letters to all patients for whom an exam completion or clinical closure event cannot be identified.

OUTCOMES ACHIEVED

- A total of 591 unconditional recommendations were tracked to completion over 13 months.
- The hospital achieved 86.1% closure, compared to 47% closure at baseline.
- The compliance rate improved 74%.
- The exam completion rate increased 52%.

LESSONS LEARNED

- Each stage of communication intervention is valuable in terms of driving up the closure rate.
- With this initiative, quality pays for itself because revenue generation well exceeds the clerical navigator cost.
- Data gleaned from the clinical closure cases gives radiology further insight into patient experiences beyond exams, showing 55% were referred to a specialist, 24% had limited life expectancy, 7% had surgical resection/biopsy, and 13% of recommendations were canceled after new information obviated the need for follow-up imaging. Radiology now has a better appreciation of patient outcomes.

Road to Recovery Advanced Orthopedic Program

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Foreseeing an increase in the number of hip and knee arthroplasties associated with the aging population, the organization implemented an intensive home-based rehabilitation program in 2015 that allows patients to recuperate in the comfort of their own homes. The program is designed to provide patients the same intensive rehabilitation services they would otherwise receive in post-acute inpatient facilities, while simultaneously achieving the same or better outcomes.

The program starts with home care staff participating in the hospital's pre-surgical class, during which the patients learn about post-operative rehabilitation expectations. It also includes early engagement with front-loaded rehabilitation visits and aggressive therapeutic interventions.

The program required extensive collaboration with orthopedic physicians to provide a level of confidence that the home health agency would provide seven-day-a-week rehabilitation service in order to send their patients directly home. The program began with one hospital orthopedic department and, after demonstrating positive patient outcomes for the facility, it was rolled out to several other acute care hospitals.

OUTCOMES ACHIEVED

- The acute care re-hospitalization rate decreased.
- Outcomes are better than national benchmarks in the following areas:
 - improvement in pain;
 - improvement in bathing;
 - improvement in transferring;
 - improvement in ambulation; and
 - discharge to the community.

LESSONS LEARNED

- Education of physicians and hospital discharge planners is vital to acceptance of new protocols.
- Sharing positive results and outcomes with field staff is necessary to achieve a culture change that embraces a seven-day operation.
- Early involvement of the patient and family/caregivers is essential to patient participation and managing patient expectations.

“Bridge Team” Inpatient Care Management Program

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The “Bridge Team” is an inpatient care management program focused on reducing readmissions and emergency department utilization by improving the discharge process and facilitating follow-up with primary care providers for patients who are hospitalized with congestive heart failure (CHF). The “Bridge Team” prioritizes individualized patient education, medication reconciliation, and care plans addressing social drivers of utilization to improve patient self-management. It consists of a multilingual group of two registered nurses, a clinical pharmacist, two social workers, an administrative assistant, a project manager, and a physician advisor.

The team conducts a needs assessment to assess medical and non-medical factors that lead to readmissions for hospitalized CHF patients, such as health literacy, non-adherence, psychiatric and chronic disease comorbidity, polypharmacy, poverty, substance abuse, and engagement with community resources. The Bridge Team meets with the patient at the bedside to provide patient education with a focus on teach-back and medication reconciliation with accompanying written materials, integrating each patient’s specific needs into his or her individualized care plan.

Prior to discharge, the patient’s primary care provider is engaged to ensure timely follow-up after hospitalization. Within 72 hours after discharge, the team members conduct a phone outreach, allowing patients to ask questions or to report concerns to a provider with whom they have a rapport. The Bridge Team members huddle daily to review the patient census and maintain team communication, and hold larger meetings weekly to review continued patient needs after discharge.

OUTCOMES ACHIEVED

- From August 2015 to December 2016, CHF 30-day readmissions dropped from 26% to 13%.
- From August 2015 to December 2016, the percentage of CHF medication reconciliation was maintained between 98% and 100%.
- From April 2016 to December 2016, patients who received education with teach-back increased from 56% to 71%.

LESSONS LEARNED

- Emphasizing personalized and individualized care plans for high-risk patients improved the 30-day readmission rate among adults hospitalized with CHF.
- In a large urban hospital serving a culturally and ethnically diverse population where more than 100 languages are spoken, addressing social determinants of health is essential in improving patient engagement and outcomes.
- Using the electronic medical record as a communication and reporting tool helps streamline management of the program.

Reducing Inpatient Admissions for a “Super Utilizer” Population

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Saint Joseph’s Medical Center targeted “super utilizers” who have had more than four inpatient admissions or ten emergency department (ED) visits within one year by identifying the needs leading to frequent visits. After significant data analysis, the team found that many of the patients were also on hemodialysis, residents of assisted living facilities, uninsured, or requiring mental health and behavioral health services. These themes were consistent regardless of primary medical indication for admission.

A multidisciplinary team used a rapid cycle improvement methodology to develop an electronic alert triggered at registration to identify “super utilizers.” A focused needs assessment was implemented to more efficiently assess underlying reasons for visits. The organization leveraged the hospital network by structuring a program that uses the established partnership with the medical health home and the existing psychiatric network of care to meet the complicated needs outside the boundaries of the acute inpatient hospital care setting. The team implemented process-specific algorithms for common care cohorts (such as hemodialysis). Real-time care planning was initiated internally and outside of the organization. Collaboration with and among community organizations was strengthened.

OUTCOMES ACHIEVED

ED visits and inpatient readmissions were compared for the same patients at least 90 days pre- and at least 90 days post-intervention. The following results were observed for those patients:

- ED visits decreased by 28%.
- Inpatient admissions/readmissions decreased by 71%.
- Overall acute visits decreased by 37%.
- Engagement with the medical health home team increased by 36%.

LESSONS LEARNED

- In-depth data analysis was integral to identifying common themes among the population, which were not previously appreciated, and served as the basis for intervention.
- Electronic notification enabled rapid intervention of multiple disciplines at different points in care.
- Rapid cycle improvement efforts centered on “doing something different” and the need to break the existing pattern of utilization.
- The team approach yielded a better understanding of multidisciplinary strengths and broke down a previously siloed departmental approach.

Asthma Coalition: Promoting Patient Self-Management

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As a member of the New York State Asthma Coalition, a consortium of professionals who work to improve the management of asthma, St. Luke's Cornwall Hospital actively sought to create a program that collaborates with patients, families, and community partners to enhance management of asthma in a primary care setting and to decrease high emergency department (ED) utilization by asthma patients.

Using evidence from the American Lung Association and best practices based on the National Asthma Education and Prevention Program Expert Panel Report-3 Asthma Guideline, an inter-professional committee including local community healthcare organizations was formed. The committee implemented a comprehensive disease control plan through primary care resources and patient self-management, which is comprised of national asthma educator certifications for select staff, patient education, an asthma action plan, a post-discharge follow-up process, and referrals to community organizations (i.e., Healthcare Clinic, Healthy Neighborhoods Program, and the Visiting Nurse Program).

Involved staff were educated on the asthma guidelines and program processes. The initial focus was on 53 asthma patients who were seen in the ED two or more times. The program was successful, so it was expanded to all asthma patients.

OUTCOMES ACHIEVED

The following results were observed from the third quarter of 2015 to the second quarter of 2016:

- The percent of patients receiving an inhaled corticosteroid increased from 10% to 83%.
- The percent of patients receiving asthma education increased from 27% to 94%.
- The number of cohort patients who visited the ED two or more times in a year decreased 85% (53 patients to eight).
- The overall number of ED visits for cohort patients decreased 90% (150 to 15).
- The overall number of asthma ED visits for all patients decreased 59% (first quarter of 2016) and 44% (second quarter of 2016).

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/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.

Reducing Blood Culture Contamination Rate

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In December 2015, St. Mary's Hospital had a blood culture contamination rate of around 4.5%. The then-current practice was to minimize sticks for patients by drawing blood culture samples off of the Angio after an intravenous (IV) line was initiated.

After completing a literature review of best practices, the hospital developed a new process where the blood would be drawn using a separate stick. St. Mary's Hospital educated patients and staff about the new process between December 2015 and January 2016. Following the education, staff stopped drawing the blood off the IV line when the IV was initiated. The hospital also implemented a follow-up process for any fall-outs to provide staff with real-time feedback. Contamination rates are continually audited collaboratively by nursing and the lab.

OUTCOMES ACHIEVED

- Blood culture contamination rates are averaging around 1% post-implementation, compared to about 4.5% of pre-intervention.
- Patient satisfaction scores were not negatively impacted.
- In addition to improving specimen quality, other benefits of implementing the project include the following:
 - decreasing costs associated with repeated blood cultures;
 - reducing additional IV sticks that are correlated to re-testing;
 - decreasing length of stay; and
 - decreasing resource use and avoiding inappropriate antibiotic use associated with false positives.

LESSONS LEARNED

- Gaining seasoned staff buy-in with the effectiveness of the protocol is critical.
- Educating staff, providers, and patients on the importance of drawing blood peripherally helps mitigate impacts to patient satisfaction rates.
- Monitoring blood culture contamination and providing real-time feedback to re-educate staff when a contamination occurs are critical for sustainability.



CHAPTER 4
**IMPROVING
ORGANIZATIONAL
EFFICIENCIES**



The Unnecessary: Optimizing Utilization of the Blood Bank for the Surgical Patient

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The creation of a Maximum Surgical Blood Ordering Schedule (MSBOS) has led to a decrease in RBC unit expiration, savings in institution and actual costs, and a reduction in blood over-ordering at Flushing Hospital Medical Center. The objective of this study was to identify “the unnecessary” in the hospital’s current MSBOS and to propose an updated Optimal Surgical Blood Ordering Schedule (OSBOS).

The hospital reviewed patient factors, procedure details, and blood bank utilization data for 611 surgical patients who received blood product between January 1, 2013, and December 12, 2015. The outdated MSBOS has led to unnecessary blood testing, waste of blood products, unnecessary allocation of hospital resources, and unnecessary patient pain. A multidisciplinary team comprised of surgery residents, nursing, phlebotomy staff, blood bank, pathology, and billing department, etc., incorporated Lean core ideas and proposed an evidence-based update to the blood ordering schedule to optimize usage of the blood bank.

OUTCOMES ACHIEVED

- MSBOS led to unnecessary blood testing, waste of blood products, excessive allocation of hospital resources, and unnecessary patient pain. Theoretical three-year savings were calculated: the OSBOS updates netted a total savings of about \$370,900.
- The proposed OSBOS eliminates the pre-operative type and screen for appendectomy, cholecystectomy, thyroidectomy, and bariatric cases.
- The proposed OSBOS also eliminates held pre-operative crossed red blood cell units for colectomy, amputation, and mastectomy cases.

LESSONS LEARNED

- Lack of a rigidly-enforced blood ordering and administration schedule (or transfusion trigger) leads to the unnecessary transfusions.
- The key to the success of this initiative is a multidisciplinary collaboration starting with perioperative ambulatory nurses and surgical residents. Residents and ambulatory nurses crosscheck and confirm what is needed based on the current MSBOS.
- The use of the electronic medical record (EMR) has enabled a detailed review of surgical patients with transfusion. Every order and communication with the blood bank is detailed in the EMR—including blood tests and products ordered, prepared, and transfused.

Effectiveness of Positive Patient Identification System in Reducing Mislabeled Laboratory Specimens in the Emergency Department: A 28-Month Study

GOOD SAMARITAN HOSPITAL MEDICAL CENTER, WEST ISLIP

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To address patient misidentification, the leading cause of incompatible blood transfusion, Good Samaritan Hospital Medical Center implemented a Positive Patient Identification (PPID) barcode system in the Emergency Department (ED) setting in August 2015. Good Samaritan is a large community hospital with a busy ED, including Level II trauma service with 90,000 encounters annually.

This retrospective study of electronic incident reports of specimen mislabeling events was designed to assess the effectiveness of the PPID system to significantly reduce the number of ED mislabeling events and mislabeled specimens.

OUTCOMES ACHIEVED

- Reported mislabeling events fell from a rate of 2.3 per month (28 events/12 months) to 0.3 per month (four events in 16 months). From August 2016 to January 2017, the last six consecutive months post-implementation, there were zero mislabeling events and zero mislabeled lab specimens received (0 in 325,753 specimens).
- There was a 90% reduction (from 118 to 12) in number of mislabeled specimens per 1,000 ED specimens received in the laboratory over 16 months, post-implementation (August 2015-January 2017), compared to the 12-month pre-implementation phase (August 2014-August 2015). This improvement represents a Sigma level increase from 5.18 (pre-implementation) to 5.72 (post-implementation), demonstrating a process with far less variation.
- There were zero serious safety events involving blood transfusion due to wrong blood in tube as a result of specimen mislabeling, 16 months post-implementation (August 2015-January 2017).

LESSONS LEARNED

- An interdisciplinary lab specimen collection team, including stakeholders such as nursing, laboratory, and information technology, is needed for selection and robust implementation of new high-tech patient and specimen identification processes.
- The barcoded PPID system helps prevent mislabeling lab specimens in the busy ED environment and could be successfully used by diverse staff groups including nurses, nursing assistants, phlebotomists, and patient care technicians.
- Ongoing performance monitoring by an interdisciplinary team trending electronic mislabeling events is needed for sustained collaboration and improvement post-implementation.

Improving Patient-Centered Care and Patient/Caregiver/Employee Satisfaction by Streamlining EMR Documentation

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Good Shepherd Hospice initiated this project as a result of an employee engagement survey that indicated one of the top dissatisfactions among staff was the time it took to document in the hospice electronic medical record (EMR) for a patient visit. During further review, staff reported this process took time away from patient-centered care.

In an effort to improve patient-centered care, patient and caregiver experience, staff satisfaction, and overall quality of care, this initiative looked to decrease the amount of time spent on EMR documentation, focusing on nursing documentation for its comprehensive application.

The agency used Lean methodology to guide the initiative. A cross-functional team was assembled, including managerial employees, nurses, and the information technology department. The team brainstormed issues and challenges, reviewed the results of data analysis, conducted process mapping to understand the workflow and identify the value-added vs. non-value-added steps and sources of waste, and produced nine recommendations. As follow up, a WWW (What, Who, When) tool was used to structure the timeline for all nine recommendations.

OUTCOMES ACHIEVED

- EMR documentation time decreased as follows:
 - Turnaround time for the evaluation visit was reduced by 45% from a mean of 82 minutes to a mean of 45 minutes.
 - Turnaround time for the initial nursing visit decreased from a mean of 114 to 70 minutes.
 - Variation in the time of documenting routine visits was reduced by 40%.
- More time is spent with patients and caregivers.
- Processes within the EMR were standardized and simplified.
- Waste was eliminated in specified areas of the EMR.
- A total of 219 boxes were removed within the initial nursing assessment template.
- Staff satisfaction improved.

LESSONS LEARNED

- Staff were efficient in identifying EMR areas that were not being used.
- Clutter and waste in the EMR was identified and eliminated due to its lack of relevancy to the population served.
- Due to a cumbersome and cluttered EMR, staff were not consistent in documenting and were therefore vulnerable to missing pertinent information regarding the care they were delivering.

How Does an Organization Optimize Hospital Capacity Without Adding Beds?

THE MOUNT SINAI HOSPITAL, MANHATTAN

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The Mount Sinai Hospital employed a three-pronged approach to optimize bed capacity to minimize patients' waiting time in the emergency department (ED) and for hospital discharge and to maximize available resources when operating at 92% to 98% occupancy routinely. Each of the three initiatives involves key stakeholders and relies on the collection and analysis of data to drive decision making. Workgroups and steering committees routinely meet to review weekly scorecard data.

To reduce overcrowding in the ED, a surge plan was developed to manage overcrowding during high hospital and/or ED census. This three-tiered system (Red, Yellow, and Green) guides administrative decisions and hospital operations based on real-time bed capacity.

A reduction of excess days (RED) committee was created to ensure that clinically appropriate patients are discharged in a timely manner. Diagnostic-related teams (e.g., oncology, sepsis) identify clinical and operational drivers that extend length of stay, and implement solutions using the Plan, Do, Study, Act methodology. A nurse and physician champion lead the team, along with a process improvement facilitator. All of the teams share progress, barriers, and next steps at a monthly meeting chaired by both the hospital president and chief medical officer.

To improve capacity for admissions and transfers, the hospital focuses on discharging appropriate patients before noon (DBN). Interdisciplinary unit-based teams focus on enhanced communication with the clinical team, patients and family members, as well as external stakeholders from the time of patient admission through discharge.

OUTCOMES ACHIEVED

- Between 2015 and 2016, the total time spent in the Green Zone increased 81%, from 31% to 56%; and time spent in the Red Zone decreased 54%, from 41% to 19%.
- Excess days for the RED teams decreased 13.5% from 2014 to 2015, and 31% from January through November 2015 to January through November 2016.
- As hospital discharges increased on average 3.3% per month, hospital-wide DBN increased 20%, from 16% in 2015 to 20% in 2016.

LESSONS LEARNED

- Sustainable change in processes and an organizational culture shift occur when senior leadership makes a commitment to support new and creative ways to improve care delivery.
- Data transparency allows for broad engagement and increases accountability.
- Implementing systemic and local solutions fosters interdisciplinary team building and collaboration and produces solutions which provide safe, high-quality patient care.

Discharge Before Noon Initiative: Our Success in Improving Patient Care by Increasing Efficiency

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The Discharge Before Noon (DBN) Challenge program describes a comprehensive, sustainable, and portable team-wide intervention to dramatically improve patient flow in the hospital. The goal was to increase the percentage of patients who are ready to be discharged safely before noon from 7% to 30%.

Optimizing patient flow is critical to improving efficiency, an important component of quality, as defined by the Institute for Healthcare Improvement. Furthermore, patients who spend less time in the hospital are at a lower risk for developing hospital-acquired conditions, a critical aspect in improving patient safety.

Late afternoon hospital discharges exacerbate patient flow challenges seen in the emergency department (ED), intensive care units, and post-acute care units, and these challenges negatively impact other aspects of care. For instance, ED overcrowding increases the length of stay (LOS) of patients and is a major source of dissatisfaction for both patients and staff.

With the DBN rate in mind, the Discharge Before Noon Challenge was launched in March 2012 by partnering with key stakeholders and fully leveraging the power of an interdisciplinary team. Great improvements were achieved within only three months and have been sustained and replicated in the past few years.

OUTCOMES ACHIEVED

- The DBN rate increased from 7% to over 40%, and has been sustained for more than four years.
- The DBN initiative has been implemented across the institution, and has been replicated at a newly-acquired hospital.
- Observed-to-expected LOS has been consistently below 0.98.
- The readmission rate has held steady at 15%.
- Patient satisfaction scores around the care coordination domain increased 19 points.

LESSONS LEARNED

- The DBN initiative is not only achievable (to over 40%), but also sustainable and portable across very different institutions.
- The DBN initiative harnesses the power of the interdisciplinary team at no incremental expense to the institution.
- The success of the DBN initiative is anchored in an aligned vision with senior leadership, timely feedback, and celebration of wins.

Value-Based Management Reduction in Inpatient Reference Lab Utilization

NYU LANGONE MEDICAL CENTER, MANHATTAN

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Recognizing inpatient reference labs as a potential opportunity to improve value and contain costs, the value-based management (VBM) team at NYU Langone Medical Center analyzed inpatient utilization of reference labs and found that 12.5% of tests represented the top 80% of costs. In addition, many of these labs had a high likelihood of being inappropriate for the inpatient setting, based on the mismatch of the clinical indication and the low volume of that diagnosis in the inpatient setting.

In July 2015, NYU Langone Medical Center developed a multi-pronged clinical decision support intervention to reduce inappropriate reference lab testing. First, turnaround time and cost were displayed for all 42 reference labs, as well as an attestation that the lab was needed for inpatient management. Second, the facility convened with relevant stakeholders, including service line chiefs, where Langone identified six reference labs that would benefit from clinical decision support to focus on as priorities. Other specific interventions included changing clinical indications to prevent confusion and simplifying the hypercoagulability panel in collaboration with hematology, rheumatology, vascular neurology, and medical center information technology (MCIT).

Monthly reports were made available and reviewed by the VBM team. Real-time feedback was given to end users when send-out labs were ordered, which would not have changed the inpatient management of a patient prior to the patient's discharge.

OUTCOMES ACHIEVED

- The average number of inpatient reference labs was reduced per 1,000 patient days.
- The average cost per 1,000 patient days decreased.

LESSONS LEARNED

- Engaging key stakeholders is critical for the success of an initiative to decrease inpatient utilization of reference labs.
- Real-time reporting and feedback to end users is essential in the success of an initiative to decrease send-out lab utilization.
- Partnership with MCIT and utilization of the electronic medical record is crucial for the ongoing success and sustainability of an initiative to decrease send-out lab utilization.

Emergency Department Patient Throughput and Satisfaction

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A review of Rome Memorial Hospital's emergency department (ED) showed opportunities for improvement with overall patient throughput and satisfaction. The facility implemented several strategies to improve patient satisfaction and waiting times, including three-hour transition orders, ED scribes, daily escalation huddles, and a revision of the patient flow zone process.

This project utilized Press Ganey's information for improving patient flow/throughput and extraction of the hospital's data to track the process of each strategy. The hospital's multidisciplinary departments recognized several factors in the patient flow that cause delay.

The implementation of scribes helped facilitate charting for ED physicians and allow physicians to focus on delivering care, rather than documenting the entire encounter. Implementing scribes also removed a crucial piece from the physicians' workload that can frequently lead to fatigue and potential errors in documentation. This enabled the ED to move patients from the waiting room to see a physician in a timely manner. As a result, patient satisfaction was improved.

A daily escalation huddle is held to discuss the ED status with leadership of all clinical departments as well as other multidisciplinary representation. The meeting is chaired by the chief medical officer and encourages communication and participation to exchange information that can be helpful to patient flow and overall processes of the hospital.

OUTCOMES ACHIEVED

- The changes made improved throughput overall by cutting patient wait times by over 50%; the trend is continuing downward.
- There was a decrease in "arrival to physician" times overall.
- Press Ganey quality improvement times increased.
- The patient flow zone model was revised.

LESSONS LEARNED

- The daily escalation huddle enables discussion in real-time and connects departments that would not have previously interacted.
- An electronic medical record system that could withstand the ED's workflow efficiently is critical for its operations.
- Improved synchronization and communication among units by applying Lean concepts ensures a safe and timely patient transfer.

Utilization of Pharmacy Interns: Reducing Medication Errors, Increasing Hospital Efficiencies, and Improving Medication Reconciliation Rates While Decreasing Costs

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A Lean review of Samaritan Hospital's discharge process found that physicians were spending more time on the computer due to inaccurate home medication lists at the start of admission. The primary key measure of the Lean review was to have the pharmacy department complete medication reconciliation on admission in the emergency department (ED).

Starting in January 2016, a member of the pharmacy team (pharmacist or pharmacy intern) would complete a medication reconciliation in the ED prior to physician admission orders for 13 hours a day, seven days a week through interviewing the patient, their family, calling their pharmacy, or reviewing medication administration records from nursing homes. Pharmacy interns include advanced pharmacy practice experience rotation students and paid pharmacy interns. Pharmacists would also call patients one week prior to surgery to obtain a current medication list for pre-admission testing. Patients were also seen by pharmacy on the floors of the hospital within 24 to 48 hours if not seen in the ED prior to admission.

When reviewing patient profiles, the pharmacy team identified discrepancies in doses, medications, and routes. Duplicate therapies and omitted medications were also reconciled. The program has been able to increase hospital staff satisfaction in regard to completing medication reconciliation. The hospital has been able to implement processes to improve medication safety within the hospital.

OUTCOMES ACHIEVED

- A standardized medication reconciliation dashboard was developed.
- The increase in total medication reconciliations completed by pharmacy services was sustained.
- The cost associated per medication reconciliation was reduced.
- The hospital increased patient, pharmacy, nursing, and medical staff education.
- Samaritan also increased patient safety through hardwiring numerous medication error reduction strategies into hospital software.

LESSONS LEARNED

- Active communication is the biggest challenge, but also the most vital aspect, of medication reconciliation.
- Standardized education and dedicated staff are crucial components to determine the success of the program through quality of counseling and appropriate documentation.
- Buy-in of frontline staff and a standard dashboard is necessary to highlight improvements.

Mobile Mental Health

ST. LUKE'S CORNWALL HOSPITAL, NEWBURGH

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In early 2013, St. Luke's Cornwall Hospital recognized that the existing transferring process of emergency department (ED) psychiatric patients led to long waiting time, escalation of patients' behavioral health issues that could have been avoided had an alternative been available, and added costs to both transferring and receiving hospitals. Often, these patients were not connected to local services and would return to the ED with the same issues, creating a cyclical process that was burdensome to the patient and hospital.

Discussions between ED leadership, the local government unit, and a local behavioral health provider began in early 2013 with the goal of discussing alternatives to transfer. In October 2013, an established Mobile Mental Health (MMH) program that had traditionally only been used in the community setting outside of a hospital began responding to the ED for patients with a behavioral health issue. This resulted in a major decrease of transfers, an increase in connection to services, and a decrease in recidivism. For patients who were not transferred, there was a significant decrease in cost of care as a result of not having to perform testing for medical clearances.

OUTCOMES ACHIEVED

- The following results were achieved from October 2013 through December 2016:
 - The MMH program was able to successfully discharge to home and local services 66% of the 695 mental health ED patients (58% of total such visits).
 - The overall cost of care decreased and a better connection to outpatient behavioral health services was ensured by reducing overall recidivism to 4%.
- It takes patients one or two visits to the ED to fully understand how to access the community service connections that are made on the initial visit, thus resulting in a higher 30-day recidivism. However, these patients experienced a dramatic decrease on 60 to 120 days.

LESSONS LEARNED

- Non-psychiatric EDs can provide alternatives to patients with behavioral health issues, allowing patients to receive enhanced care within the community.
- Hospitals, local government, and community-based organizations must work together to break down silos that create barriers to access to care.
- Out-of-the-box thinking, collaboration, patience, and willingness to break down barriers are essential to creating new workflows and connections that lead to better patient care.



CHAPTER 5
**PATIENT
EXPERIENCE
OF CARE**



Promoting “Zen” Culture in the Ambulatory Surgical Unit

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Promoting Zen Culture in the Ambulatory Surgical Unit (ASU) was initiated on 2015 under the auspices of the nursing leadership and hospital management. The project was an innovative notion posited by the ASU clinical nurse manager as a solution to poor patient/family satisfaction, patient complaints about pain management, and poor staff morale.

The concept was derived from the theory of holistic nursing, which promotes creating a sustainable environment that is both healing for patients/family and healthy for the staff rendering care. Adopting various modalities such as aromatherapy, massage, reflexology, music and sound therapy, visual imagery, an aquarium, purifying plants, and noise reduction, ASU staff were able to create a calming environment suited for deep meditation (hence the term Zen). With favorable reception from major stakeholders, the project generated positive results among staff and ASU patients.

OUTCOMES ACHIEVED

- Patient satisfaction scores increased from poor/fair (2-3) to very good (5).
- A calming environment was created that induces relaxation, decreases anxiety, lessens pain medication utilization, and enhances patient healing.
- Promotion of a healthy working environment improved cohesiveness and efficiency among staff.

LESSONS LEARNED

- Creating a healthy environment produces a favorable workplace that enables nurses to deliver efficient care to their patients.
- Holistic modalities enhance positive patient experience in the ambulatory surgery setting by helping to ameliorate anxiety and pain.
- Holistic nursing approaches offer an innovative way to improve workflow and the patient-provider experience in the ASU.

Improvement in Patient Experience Scores Through Focused Initiatives

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At the end of 2015, Kenmore Mercy Hospital's patient experience team was not satisfied with the rate of improvement. Data analysis helped determine the hospital's decision to focus on cleanliness, call bell responsiveness, restful environment, medication side effects, and overall culture. In 2016, teams were developed to address each of these issues.

The cleanliness initiative revolved around the "Picture Perfect" room. A multi-disciplinary team reviewed the look of rooms; assigned detailed checklists to different staff members, including the floor cleaning team; and conducted unit renovations and room pivots.

The call bell responsiveness team used a new software system to collect data on the timeliness of associates' response to patients' call bells. Baseline data, manager training, and detailed target information enabled individual nursing units to develop improvement action plans in conjunction with their corresponding shared governance committees.

The restful environment team listened to frontline associates and addressed lights and noises by implementing "Yacker Trackers" and ensuring the use of restful night menus. Nursing and pharmacy worked together to adjust times of medications, and hourly rounding by associates reduced call bell noise.

The medication side effects team had many initiatives through the year including pharmacist counseling, patient call-backs, handouts with common medications and side effects based on diagnosis, and scripting for RNs when giving medications.

Culture was a facility-wide focus. Education, brainstorming, a campaign highlighting organization values and mission, Hospital Week, and holiday celebrations were accomplished.

OUTCOMES ACHIEVED

- The hospital achieved improvement in all ten dimensions of Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Patient Experience Scores.
- There was 4% improvement in "Would Recommend Hospital" in a 12-month timeframe.
- There was 3.4% improvement in "Overall Rating of Hospital" in a 12-month timeframe.

LESSONS LEARNED

- Involve all disciplines early in the process.
- Complete software training close to the initiation of the project so all associates remember how to use the software.
- Have timelines developed early to ensure timely implementation of plans.

Hush for Healing

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Oneida Healthcare developed the Hush for Healing initiative to address a 2015 Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) score of 58.9% due to unnecessary noise levels. The initiative focused on making improvements on the HCAHPS question, “Was the area around your room quiet at night?”

Educational emails and information were presented to staff regarding the importance of the Hush for Healing initiative, with patient- and resident-centered care. Through an organizational effort, multiple brainstorming sessions were conducted to explore ways to fix the noise issue. Staff researched everything from no-cost efforts to expensive programs to see what impact they would have on the facility.

Every department was tasked with making changes to noise levels on their own equipment and notifying maintenance when an unnecessary noise was located. The official kickoff to this program was June 6, 2016. The baseline score first quarter of 48% rank (all databases) was used as a starting point. This project directly aligns itself with the organizational strategic plan under the “People Pillar.”

OUTCOMES ACHIEVED

- HCAHPS scores improved from a baseline 48% rank to 91% rank by fourth quarter 2016.
- Community and hospital awareness of the healing effects of quiet on patients increased.

LESSONS LEARNED

- All new equipment should be checked before purchase for noise concerns.
- Community awareness raises the expectation of a completely functional program.
- Staff buy-in is the most important key to success.

Beyond Patient Satisfaction: Creating a Total Patient Experience

PHELPS MEMORIAL HOSPITAL CENTER, SLEEPY HOLLOW

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Appreciating the proposition that overall clinical and operational success goes hand-in-hand with superior patient perceptions of care, Phelps Hospital of Northwell Health made a long-term commitment to becoming a leader in providing the best possible patient experience. The hospital has demonstrated measurable success. However, a material dip in patient satisfaction scores last year showed that best practices were not as hardwired as had been hoped.

An “all-in” philosophy guides Phelps Hospital’s efforts. The senior leadership takes personal responsibility for creating a culture of service excellence. For example, the chief executive officer established and personally leads a weekly meeting attended by senior and middle management, devoted to reading and responding to all comments made on patient surveys. The hospital has a collegial spirit and engages in shared problem solving.

Phelps also believes that sustainability and accountability are needed with each and every patient interaction. The hospital embarked on a Six Sigma journey, with several staff trained in this formal data-driven process improvement method. Their efforts were directed toward obtaining concurrent data from patients to better understand their perceptions during the active course of hospitalization. This has allowed Phelps to obtain subtle predictive data that drives new strategies and tactics.

OUTCOMES ACHIEVED

For the fourth quarter of 2016, the Press Ganey database of more than 2,000 hospitals showed that Phelps Hospital achieved the following performance:

- 89th percentile rating of hospital nationwide and 96th percentile in New York State;
- 94th percentile nationwide in recommend hospital and 97th percentile in New York State;
- 97th percentile pain management nationally and 99th percentile in New York State;
- 85th percentile nationwide nurse communication;
- Emergency Department: 72nd percentile nationwide recommend;
- Physician Practices: 96th percentile overall rating; and
- Ambulatory Surgery: 82nd percentile nationwide overall rating.

LESSONS LEARNED

- Patient satisfaction is really about creating an overall patient experience at all levels of the organization. This laser-like focus on the patient enhances overall safety culture, as well as measures of objective quality.
- Leadership (the board and chief executive) must make this a top priority, investing personal time, energy, and focused attention.
- To go above and beyond, all levels of management must adopt a granular focus on the entirety of the patient experience, from timeliness of care, to environmental concerns, to analyzing and responding to patient comments. Most often, patients are the best experts.

Patient Experience of Care: Improve Patient Experience through Meal Delivery

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Based on findings that food service is key to patient experience of care and that St. Francis Hospital has room to improve in the meal service delivery area, the hospital's patient tray delivery program was developed as an organizational priority to improve patient satisfaction. The goal was to positively impact patients, magnet status, employee satisfaction, and value-based purchasing reimbursement.

Utilizing Six Sigma and Lean methodology, the patient tray delivery team identified root causes for delayed delivery, sought insight, and initiated measures to resolve patient dissatisfaction. Despite efforts, the numbers did not significantly improve. The lack of available change management tools and buy-in contributed to the flat numbers. The team increased its change management knowledge, skills, and abilities (KSAs) and engaged the new system Six Sigma Master Black Belt, which helped to synergize all past efforts. The team refocused its scope, specifically on the food and nutrition department, using the project's past work and lessons learned to identify opportunities for improvement and initiate action plans, which included attaining the following:

- approval for conducting multidisciplinary Kaizen Event;
- top leadership support for project work;
- monies for additional staff in the food and nutrition department;
- an earlier cafeteria closing time to redirect staff for direct patient interactions;
- realignment of staff roles with appropriate responsibilities;
- a changed and enhanced the menu;
- a newly-established meal buddy program; and
- approval for new heating lamp equipment.

OUTCOMES ACHIEVED

- All post-Kaizen enhancements were rolled out in December and the team is monitoring the outcomes.

LESSONS LEARNED

- Persistence! Do not become discouraged when obstacles appear.
- If the project scope is too great, keep going with a smaller focus, accomplish outcomes, and then extend to a larger focus with greater impact.
- Utilizing the Kaizen Event makes the previous lesson feasible, and with great multidisciplinary engagement, significantly speeds up the process.

Improving the Patient Experience by Implementing the “Red Line Safe Zone”

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Contact precautions require healthcare personnel to always put on (don) personal protective equipment (PPE) before entering a contact precaution room. Although instituted and necessary to prevent hospital-acquired infections (HAIs), this process also takes a significant amount of time, causing delays that can produce patient anxiety, perceived social isolation, and dissatisfaction with care.

Using evidence-based practices and keeping the focus on improving the patient experience by improving communication and staff responsiveness, UHS Delaware Valley Hospital instituted the Red Line Safe Zone.

To establish the safe zone when a patient is placed on contact precautions, a piece of red vinyl tape (the width of the doorway) is placed five tiles in from the doorway entering the patient’s room from the unit hallway. This provides a safe area that maintains a distance of six feet from the patient’s bed and environment (chair, linen hamper, etc.).

The red line serves as a visual cue from which healthcare workers/ancillary staff/visitors and clergy can communicate with patients without having to don PPE unnecessarily. If any contact with the patient or environment is necessary or desired, appropriate PPE must be worn.

OUTCOMES ACHIEVED

- Patient satisfaction scores for “Nurse Communication” has shown an overall positive trend since implementation.
- Patient satisfaction scores for “Responsiveness of Staff” showed an upward trend immediately from implementation, with the last two quarters reporting a satisfaction score of 100%.
- There was a 14% reduction in PPE costs. Following implementation, the average isolation gown usage dropped from 100 gowns a week to 86 gowns a week, a cost savings of \$1,533 for the year.

LESSONS LEARNED

- Process change does not have to be expensive to be successful.
- Staff buy-in is of utmost importance when implementing a new process.
- Patient satisfaction and cost savings can be addressed simultaneously.



CHAPTER 6
**PROVIDING CARE TO
SPECIAL POPULATIONS**



A Critical Care Initiative to Decrease Utilization of Restraints

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Contrary to the popular belief that critically ill patients, if unrestrained, may intentionally or inadvertently remove therapeutic devices and life-sustaining equipment, a wealth of literature illustrates the high risks of restraint use, including injuries such as nosocomial infections, pressure injuries, decreased cognitive ability, and even strangulation.

The nursing team in Bassett Medical Center's critical care unit embarked on a unit-based multidisciplinary initiative to decrease restraint utilization. The American Association of Critical Care Nurses (AACN) Roadmap for Implementing Change was utilized as a guide to assessing the unit's level of readiness for the change. The nursing team identified root causes and developed tools and strategies to implement a restraint reduction program. Senior leadership was engaged and provided support for financial and staffing needs. Local unit leadership developed education, restraint alternative competencies, and meaningful rewards and recognition opportunities.

The results have been impressive in terms of a reduction of both episodes of restraint use and the number of patients restrained. Moreover, this initiative has been the source of an increase in unit pride and collaboration. The critical care team has been empowered by achieving outcomes and providing safer, more patient-centered care.

OUTCOMES ACHIEVED

- Bassett achieved a 45.2% reduction in episodes of restraint (2016 vs. 2015).
- There was a 27.2% reduction in number of patients restrained (2016 vs. 2015).
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) ratings around nurse communication increased 27% (2017 vs. 2015).

LESSONS LEARNED

- Changing long-held beliefs can be difficult, but it can be done: Providing evidence-based literature on the detrimental effects of restraint was necessary to help shift attitudes and to motivate staff to try different approaches.
- Make sure root causes are addressed: Since delirium was identified as a key reason for restraint utilization, education on delirium prevention was identified as a top priority. A subgroup convened to implement an evidence-based care bundle to reduce intensive care unit (ICU)-based delirium.
- Improving one aspect of care can improve the overall experience: While improving HCHAPS ratings was not within the scope of the project, providing care that maintains the dignity of the patients and prevents ICU delirium (thus allowing patients more opportunity to interact with staff) appears to have influenced how patients are perceiving their communication experience with nurses.

Comprehensive Care for Joint Replacement Patient Navigation Program

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Catholic Health Services of Long Island embraced the Comprehensive Care for Joint Replacement model created by the Centers for Medicare and Medicaid Services to standardize care across six hospitals for Medicare patients undergoing lower extremity joint replacement procedures. A full team of patient navigators was brought on board to cover all six acute care facilities. The team was comprised of registered nurses, physical therapists, and occupational therapists. The team used Robust Process Improvement techniques to help standardize patient care, including the following:

- mandatory standardized pre-operative education classes;
- a standardized baseline functional status questionnaire and risk scoring in pre-operative testing;
- streamlined care protocols;
- concierge-like navigation before, during, and 90 days after the joint replacement surgery to improve the patient experience;
- formalized care planning through the electronic medical record;
- augmented, and close coordination with, home care services, including physical therapy;
- network narrowing of post-acute care providers to those with high quality and robust patient services;
- close coordination and standardized patient care protocols with skilled nursing facilities; and
- continued regular follow-up until 90 days post-surgery, then a reassessment of functional outcome on day 270.

OUTCOMES ACHIEVED

- Patients discharged to home increased from approximately 25% to over 40%, a 60% improvement.
- The 90-day readmission rates across the system were lowered to 7.9% in 2016 from 16.7% in 2012, an improvement of about 53%.
- Cost per total joint episode decreased by 21%.
- Complication rates remained static and low.

LESSONS LEARNED

- Relationships, stakeholder analysis, and buy-in are key to building system-wide programs.
- Patient-centered focus leads to better outcomes and lower healthcare costs.
- Standardization of variable practices leads to more consistent outcomes.

Opiate Reduction Medicaid Accelerated Exchange Project

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Ellenville Regional Hospital and a family health center initiated a community-wide Opiate Reduction Medicaid Accelerated Exchange Series Project (MAX Series Project) as part of the New York State Delivery System Reform Incentive Payment (DSRIP) Program. The MAX Series Project addresses a small percentage of the local population (6%) that accounts for a disproportionate level of emergency department (ED) visits (43%) and inpatient admissions (52%). Within that small portion of the population, a significant subpopulation (designated “super utilizers”) was identified that was driving hospital utilization due to chronic pain. ED visits by super utilizers often resulted in the administration and/or prescription of opiates, reflecting a rise of opioid abuse in the county and region.

In an effort to better manage the chronic pain of the super utilizer population and to address their underlying substance abuse issues, the partnering organizations assembled a multidisciplinary team that developed a chronic pain policy with new ED treatment protocols using non-addictive pain medications and a warm hand-off to a care navigator to assist the patient in accessing primary care or other community-based health services.

OUTCOMES ACHIEVED

- Within a year of implementing the MAX Program in November 2015, visits to the hospital’s ED by a cohort of 64 super utilizers dropped significantly, from an initial baseline number of 69.7 ED visits per month to 36 visits per month (48.7% decline).
- Similarly, administration of opioids to super utilizers of the ED for chronic pain dropped from a baseline rate of 63.6 opioids administered per month to 16.6 per month (73.8% decline).
- In general, opioids administered to patients presenting to the ED (excluding the super utilizer group) also showed a decrease in administration, from a baseline rate of 167 per month to 104 per month (37.7% decline).

LESSONS LEARNED

- Care navigation services should be offered 24/7 to provide a warm hand-off for this complex patient population of patients who require help with medical, social, and behavioral issues.
- Provider education is key to changing practice patterns for the care of chronic pain patients utilizing the hospital’s ED. Provider input to case conferences with the ED, psycho-social, and care management staff is also important for success.
- Support from hospital and medical staff leadership is required to continue building this model of alternative care delivery for chronic pain patients.

Bringing Spiritual Care to the Bedside

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Providing spiritual care to patients at the bedside is essential, yet challenging in today's fast-paced healthcare environment. According to the National Consensus Project for Quality Palliative Care (2013), a patient's shift in what is perceived as important at the end of life may actually be the result of a greater emphasis on religion and spirituality.

Spiritual care is essential, especially when patients experience illness, trauma, pain, loss, and are going through life transitions; it is during those times that spiritual care can help patients cope, find support, and feel that they are more than just an object needing physical or mechanical care. Research shows that nurses often feel too busy and do not have the confidence and knowledge to provide spiritual care to their patients.

Nurses working at the local acute care hospital were surveyed to assess their knowledge of assessing for, and providing, spiritual care to patients. Survey findings supported the implementation of a spiritual care educational program at the local hospital to increase nurses' knowledge so that they could feel confident and competent to meet patients' needs.

An interdisciplinary team was formed to assess, identify, and meet staff's spiritual care education needs; a yearly online educational program was implemented and was made mandatory for all hospital personnel; and a model called "The 4As Approach to Providing Spiritual Care" was developed for utilization when providing spiritual care education.

OUTCOMES ACHIEVED

- Ninety-three percent of nursing staff attended spiritual care health fair education.
- The spiritual care knowledge deficit was reduced to 3% in post-test, compared to 62% in pre-test.

LESSONS LEARNED

- There is a need for ongoing yearly spiritual care education and assessment of staff's learning needs.
- It is essential to engage staff to both learn and recognize the important role spirituality has in achieving positive patient outcomes and their own role in achieving the outcomes.
- This project was essential in promoting a positive sustainable change by providing yearly mandatory spiritual care education online, at health fairs, in publications, and at healthcare conferences.

Improved Stroke Patient Outcomes through Reduction in Door-to-CT Complete Time

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To incorporate the evidence-based practice of providing timely and proper treatments that improve stroke patients' health outcomes, Good Samaritan Hospital Medical Center participates in the American Heart Association's (AHA) Get With The Guidelines® program. For patients qualified for tissue plasminogen activator (tPA), the hospital's historical data demonstrated door-to-tPA times were consistently higher than the 60-minute target. The hospital examined the processes and committed to concentrating on door-to-computerized tomography (CT) times, for which the hospital had a mean time of 27.9 minutes in 2015, longer than the recommended 25-minute target.

In collaboration with the emergency department (ED) and the physician champion, the hospital instituted a direct-to-CT protocol in March 2016 for patients presenting via emergency medical services (EMS) with symptoms of stroke. Using robust process improvement and evidence-based practice, education sessions were conducted for the ED physician, physician assistant (PA), resident, and nursing staff, with special attention to the registered nurses (RNs) responsible for EMS triage. Meetings were held with CT and radiology administrators to discuss the plan and obtain their support.

Most importantly, the hospital sent communications via fax to all local EMS agencies, obtained email contact information for EMS agency leadership, and sent them education and information regarding the program. Signage was developed for the EMS arrival area and the ED EMS lounge. The ED EMS triage RN provided each EMS crew a copy of the signage, a written explanation of the program, and expectations two weeks prior to the go-live date. Good Samaritan Hospital Medical Center also offered an in-person discussion and education sessions for EMS agencies.

OUTCOMES ACHIEVED

This initiative yielded the following results:

- Door-to-brain image complete was reduced 29%, from 21 minutes to 15 minutes.
- Door-to-IV tPA decreased 8%, from 67 minutes to 62 minutes.
- Stroke patient mortality decreased 41%, from 48 deaths to 34 deaths.
- Stroke patient outcomes improved 45%, with modified Rankin Scale (mRS) of zero from 73 to 106.

LESSONS LEARNED

- With multiple concurrent strategies and cooperation, it is possible to reduce median times to CT scan.
- Increasing communication with multi-disciplinary members, including EMS staff, ED doctors and nurses, the radiology department, and the stroke team, the hospital was able to reduce median times to IV tPA infusion.
- Time is brain: every second counts. Evidence-based guideline adherence promotes better patient outcomes on discharge and reduces mortality.

Adolescent Comfort Room to Decrease Behaviors that Lead to Restraint

JOHN T. MATHER MEMORIAL HOSPITAL, PORT JEFFERSON

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John T. Mather Memorial Hospital's adolescent psychiatric unit underwent a major culture change by creating a new therapeutic environment that fostered healing and recovery through the teaching of positive alternative ways of coping. One of the initiatives within the unit's transformation was the construction of a "comfort room." Comfort rooms are an evidence-based practice designed to assist patients in calming the senses while learning techniques to decrease feelings of anxiety, anger, and agitation. Appropriately coping with these feelings at their inception prevents the escalation of negative and self-destructive behaviors that often lead to the use of restraints.

In 2015, space was renovated on the adolescent psychiatric unit for the comfort room. It was an inter-professional effort including recreation therapy, nursing, and social work. Interventions available within the comfort room ranged from multi-sensory items, music, television for guided imagery, and special furniture. It was designed to have a home-like décor to create a sanctuary away from the aesthetics of a hospital psychiatric setting. The team developed guidelines for the use of the room, including patient input and feedback. Team members provided education to the staff on its use, with emphasis on the benefits of patient/practitioner collaboration for improved outcomes. The team set two goals: (1) improve individual patient outcomes, and (2) decrease the amount of restraints used within the unit.

The team discussed methods to demonstrate the success of the comfort room at the patient level. The Well-Being Picture Scale was chosen as a valid and reliable tool to measure patients' level of distress prior to and after use of the room.

OUTCOMES ACHIEVED

- Individual patient scores on the Well Being Picture Scale improved post-comfort room use.
- There was a 36% decrease in restraint use in 2016 compared to 2015.
- There was improvement in the unit culture, enhancing therapeutic and collaborative interventions between staff and patients.
- There was staff recognition of the value of patient/practitioner collaboration.

LESSONS LEARNED

- Patients are resilient and can be taught non-pharmaceutical techniques to deal with anxiety and agitation.
- Utilizing the comfort room as an intervention can lead to an improvement in safety by decreasing restraints.
- Culture change and positive patient outcomes within an adolescent psychiatric unit is possible with the dedication of management and staff.

RISC: Reducing Restrictive Interventions and Staff/Client Injuries

MARYHAVEN CENTER OF HOPE, PORT JEFFERSON STATION

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Maryhaven 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, also leading to client and staff injuries. Injuries and physical interventions impact the functioning and satisfaction of all people involved in services. The organization developed the framework for a sustainable and data-supported improvement.

Ongoing proactive training, improved staff support, and enhanced data collection and analysis methods were conducted to reduce restrictive interventions and injuries.

OUTCOMES ACHIEVED

This initiative resulted in:

- ongoing change in agency culture from reactive strategies to positive communication-based interventions and support;
- an increase in positive approaches and language by staff when managing challenging behaviors;
- overall reduction in restrictive physical interventions;
- reduction in staff/client injuries;
- reduction in use of psychotropic medications, correlated with the increase in positive and proactive interventions and ongoing psychiatric assessment; and
- modified and streamlined data collection methods to facilitate accurate and simplified data.

LESSONS LEARNED

- Top-to-bottom cultural change is the essential first step for providing long-term sustainable progress and positive client/staff interactions. Buy-in at the direct care level and overcoming initial resistance are challenging.
- Effective data collection methods are essential when trying to understand the function of a behavior and implement the appropriate proactive strategies to teach the appropriate alternative behavior.
- Increased and ongoing training in proactive strategies is directly correlated with decreases in physical interventions and consequent injuries.
- Reactive staff responses, although immediately protective, are not therapeutic; nor do they provide the impetus and skills for positive growth.

A JOINT Effort: Orthopedic Care Model Redesign

NORTH SHORE UNIVERSITY HOSPITAL, MANHASSET

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Strategic growth in orthopedics is a major focus for North Shore University Hospital. Specifically, expansion of the total joint replacement and spinal surgery program has led to a 19% volume increase, compared to 2015. The hospital developed innovative approaches that also improve patient satisfaction, operational efficiencies, and quality outcomes by redesigning a care model involving the following:

- Pre-operative education was strengthened to inform the joint replacement patients regarding their upcoming surgery and how to best be prepared in the home environment for a safe return. A patient's spouse or caregiver was provided a coach's guide.
- Bedside rounding was redesigned to involve a true multidisciplinary team.
- The rehabilitation services department extended staffing hours in order to accomplish post-operative, day zero therapy evaluations.
- The orthopaedic department collaborated with Northwell Homecare services to develop a specialized joint replacement care program.
- The team participated in a Six Sigma project focused on spinal surgery patient throughput.
- The team analyzed and drilled down on the quality metrics, including readmission rates and surgical site infection rates.

OUTCOMES ACHIEVED

Joint replacement patient improvements, 2016 compared to 2015 for Diagnosis Related Groups (DRGs) 469/470:

- 0.81 day length-of-stay (LOS) reduction;
- 2% reduction in 30-day readmission rate; and
- 16% reduction in surgical site infection (SSI) rate for hip surgery; 45% reduction in SSI rate for knee surgery patients.

Spinal patients, 2016 vs. 2015 (DRGs 460, 473, 520 elective surgeries only):

- 25% reduction in excess days.

Overall orthopaedic Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores (fourth quarter 2016):

- care transition, 88th percentile;
- discharge information: 90th percentile; and
- recommend the hospital: 73rd percentile.

LESSONS LEARNED

- Lowering joint replacement LOS and increasing the discharge to home is safe. This efficient discharge practice did not lead to increased readmissions.
- Successful outcomes occur with the support of a dedicated, motivated care team.
- Routine data analysis and reporting updates at Ortho and Hospital Performance Improvement Coordinating Group (PICG) meetings forces a continued focus on process improvement.
- The support and influence of leadership is a key driver of initial and sustainable change.

Reducing Early Hepatitis B Vaccine Declinations in Newborns

OLEAN GENERAL HOSPITAL

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In 2015, the New York State Department of Health conducted a three-year survey of Olean General Hospital's overall immunization documentation, including documentation of newborn hepatitis B vaccinations within 12 hours of birth. DOH's goal is an 80% compliance rate with vaccine documentation.

Olean General Hospital was just reaching the 80% goal and it was noting a high rate of hepatitis B vaccine declinations, which could potentially pull its statistics under the 80% goal if higher numbers of declinations continued. At that time, there was one particular physician practice group that was convincing patients to hold off on the vaccine until the newborn's first well baby visit. This is not best practice for early protection of newborns from hepatitis B exposure. There were also other factors for declinations, such as religious practice and poor parental education about vaccine "myths," but those declinations did not exceed declinations based on physician preference for later vaccination.

To help decrease vaccine declinations, the local DOH office met with Olean General Hospital's obstetrical and pediatric providers to discuss best practice in regard to the vaccine being given within 12 hours of birth and not waiting for the first office visit.

The hospital included measures geared toward nursing care to help further decrease declination rates. The nursing staff was re-educated on vaccine best practice. Olean General Hospital also developed a well-scripted conversation for nurse-parent interaction to explain the importance of early immunization within 12 hours of birth. The hospital provides information to parents that they may be asked by their physician to wait until a later time for immunization. Unless medically indicated, best practice is to immunize within 12 hours of birth. The hospital also provides

immunization education in staff-taught prepared childbirth classes to help dispel myths associated with immunizations and to also increase parental understanding of hepatitis B and importance and safety of early immunization.

OUTCOMES ACHIEVED

- In 2015, there were 99 hepatitis B vaccine declinations out of 744 births, resulting in a 13% declination rate.
- In 2016, there were 54 declinations out of 754 births, resulting in a 7% declination rate, which is a 6% decrease in declinations over last year.
- Patient satisfaction scores increased as there were improved communications between nursing and patients. The hospital's standard nursing scores remain at 88.9%.

LESSONS LEARNED

- Enhancing parental education regarding the importance of newborn vaccines is essential for increasing the success rate of early vaccination. Dispelling myths regarding vaccines is a crucial part of understanding their importance.
- Increased communication and education of nursing staff is essential for helping decrease declination rates as they are the frontline workers who can help drive best practices and education for parents.
- Re-education and communication with the physician groups was a large challenge to change the mindset for best practice and increasing early vaccination rates.

Baby-Friendly Hospital Initiative: Supporting a Lifetime of Better Health

PHELPS MEMORIAL HOSPITAL CENTER, SLEEPY HOLLOW

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Phelps Hospital of Northwell Health has officially joined the international ranks of “Baby-Friendly® Hospitals,” recognized for offering an optimal level of care and support for new mothers and their babies. To achieve official Baby-Friendly Hospital Designation, facilities must meet the requirements for the Ten Steps to Successful Breastfeeding, as outlined by the World Health Organization (WHO)/UNICEF. The steps are evidence-based interventions designed to improve the care, support, and education the hospital provides to breastfeeding mothers.

Hospital clinical and administrative leadership were required to subscribe to this approach. Achieving successful accreditation was a four-year journey involving clinical and administrative leadership, maternal child health staff, licensed providers, and community agencies. Ten basic principles became hospital policy; for example, helping mothers initiate breastfeeding within one hour of birth. Specific impediments to success were identified, including how to educate young women about ubiquitous marketing and advertising of breast milk substitutes. These policies and practices became the subject of a quantifiable quality assurance approach using Plan-Do-Check-Act cycles. Successful accreditation was achieved in 2016, with a commensurate 20+% increase in the rate of mothers demonstrating exclusive breastfeeding.

OUTCOMES ACHIEVED

- There was a more than 20% increase in exclusive breastfeeding 2015-2016.
- All maternal child health registered nurses are trained in lactation techniques and methodology.
- The hospital achieved above 80% on all ten steps and multiple sub-steps outlined by Baby-Friendly USA during the on-site assessment.
- There was active affiliated provider participation.
- Baby-Friendly Designation was achieved in fall 2016.

LESSONS LEARNED

- A comprehensive approach involving numerous stakeholders is the most effective strategy to implement and sustain change.
- It is important to standardize the approach of breastfeeding education for new mothers, who often receive mixed messages about breastfeeding from community, family, and media.
- Implementing organizational policies related to the Baby-Friendly Hospital Initiative standards, as well as optimizing maternal child health staff knowledge and skill set in breastfeeding, has enhanced the postpartum experience, increased exclusive breastfeeding rates, and improved patient satisfaction.

CenteringPregnancy

ROCHESTER GENERAL HEALTH

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Seeking to help reduce the higher than state and national average number of preterm births in local areas, Rochester General Health implemented “CenteringPregnancy,” a nationwide program that has proven effective since its development in the 1980s.

The program has been demonstrated to lower preterm births, equalize the race disparity of preterm births among black and white women, increase breastfeeding rates, improve adolescent pregnancy health, and improve attendance at post-partum visits. Groups spread the word through staff conversations, a waiting room video, pamphlets, education boards in offices, and media exposure through television news and newspapers.

CenteringPregnancy group care follows the recommended schedule of ten prenatal visits, but each visit is 90 minutes to two hours long, giving women ten times as much time with their provider team. Moms engage in their care by taking their own weight and blood pressure, recording their own health data, and having private time with their provider for a belly check.

The health system implemented the program in four locations in 2014 through state grant funding.

OUTCOMES ACHIEVED

- Twenty-two percent of prenatal patients at the health system enrolled in CenteringPregnancy.
- Women who participated had a pre-term delivery rate of 9.7%, compared to a pre-term delivery rate in high-risk local area of 13%.
- Total recorded cost savings for women participating in CenteringPregnancy: \$527,344.
- The program has a 95% satisfaction rating.

LESSONS LEARNED

- Recruitment and retention are everyone’s responsibility. By using many different methods for recruitment and retention, more professionals around the health system are able to have conversations with patients about “centering.”
- Leadership support is essential, especially when Centering requires space. One hospital area was being renovated and Centering needed to move. Senior leadership in the system worked to find a suitable solution and made sure Centering had fresh paint and structural needs met to move in in a very short timeframe.
- Clear communication between teams is needed. With multiple sites hosting Centering, maintaining clear communication ensures a consistent experience for all Centering participants, as well as the ability to exchange ideas and experiences among staff.

Behavioral Management Team Program

ROCHESTER GENERAL HEALTH

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Rochester General Health's Behavioral Management Team (BMT) was formed to address the care and behavior of disruptive patients. The team consists of representatives from the hospitalist staff, nursing, behavioral health, social work, care management, the emergency department, the health home program, transitional housing, ethics, and quality. Participation on the team is in addition to everyone's regular full-time job responsibilities.

The team receives referrals from staff, who identify patients with frequent admissions. Referrals received when the patient is not admitted allow for proactive planning for the patient's next admission.

Patients are prioritized based on urgency, as in threat of harm to self or others, and frequency of visits. Twice a month, the BMT meets to review referred patients, typically two per one-hour session. The team discusses the patients' medical and behavioral history, as well as their social situation, including housing and family support. The team then determines both a medical and behavioral management plan based on the patient's needs. To build rapport with the patient and promote consistency in the plan, a specific inpatient unit is recommended for patient placement during all admissions. If community needs are identified, the team will brainstorm ways for those to be met; any action items determined in the meeting are assigned to team members. Once this plan is established, it is placed in the electronic medical record so clinical staff on any unit can view it. By doing this, the team is making an effort to create institutional memory related to the patient's treatment needs and behaviors, instead of having to relearn the patient's history and recreate a plan each time the patient arrives.

OUTCOMES ACHIEVED

Data from 33% of participating patients reviewed by the BMT indicated:

- a 58% decrease in average length of stay; and
- a 60% decrease in average cost of care.

LESSONS LEARNED

- There must be a dedicated point of contact to coordinate the team; administrative roles were coordinated by all members of the team, preventing full team focus on execution.
- The commitment of all team members to meet at regular frequency is imperative.
- There needs to be a straightforward way to share plans with clinical staff.

Synergistic Trans-Organizational Approach to the Earlier Detection and Management of Lung Cancer

SARATOGA HOSPITAL, SARATOGA SPRINGS

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As a result of its Community Health Needs Assessment, Saratoga Hospital identified that the county's incidence of lung cancer (69.9/100,000 population) and lung cancer mortality rates (50.0/100,000) were higher than the rest of the state (68.6 and 46.1). The organizational leadership was committed to developing a lung cancer screening program which offered:

- enhanced access to diagnostic services, facilitating earlier identification of disease; and
- patient-focused navigation throughout each patient's disease trajectory.

This program was well-aligned with the organization's strategic commitment to "develop a system-wide approach to pulmonary disease which encompasses acute care, community-based care, as well as diagnostic and interventional services... an approach that will improve the clinical outcomes of patients with lung cancer through early detection, care coordination, and cutting-edge technology."

In 2014, Saratoga Hospital developed a comprehensive program for lung cancer screening and follow-up. Technologically, this program added low dose computerized tomography (CT) to the traditional modalities of chest x-ray and conventional CT scanning. Programmatically, a physician champion and a multidisciplinary team was charged with increasing the volume of patients being screened and developing a process to manage patients with positive findings.

OUTCOMES ACHIEVED

- In 2015, 120 patients were screened, an increase from 33 patients in the first year of operation (2014).
- In 2016, combined efforts increased this number to 426 patients.
- In 2017, based upon the established pattern of growth, it is estimated that 800 to 1,000 patients within the organization's service area will benefit from this potentially life-saving screening.
- In 2015 and 2016, respectively, 18% and 24% of lung cancers identified at Stage 1A at which their potential for cure and enhanced quality of life was significantly improved, compared to 9% in 2014.

LESSONS LEARNED

- The presence of a physician champion, supported by a committed multidisciplinary team, is catalytic to the growth of a new program.
- Offering primary care providers the safety net of a defined program for post-screening patient management increases their willingness to refer patients for screening.
- By increasing access to screening, cancer can be diagnosed at an earlier stage, resulting in a broader array of treatment options, better patient outcomes, and enhanced quality of life.

Preventing Patient Suicide

SISTERS OF CHARITY HOSPITAL, BUFFALO

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Sisters of Charity Hospital recognized that the rate of suicide is increasing in America. It is now the tenth leading cause of death, claiming more lives than traffic accidents and more than twice as many as homicides. The organization recognized two key opportunities for improvement when it came to preventing suicides within the hospital: (1) a standardized suicide risk screening tool; and (2) a suicide prevention tool kit.

The team implemented a standardized screening tool based on the Columbia Suicide Risk Screening tool. Based on rounding and talking with the staff, it was identified that when a patient needs to be placed in suicide precautions, it is an urgent situation. A checklist was utilized that assisted the staff in the implementation of all the elements necessary to protect the patient.

The group also decided to develop a suicide prevention kit that contained the items necessary to place a patient in suicide precautions. The kit contains: a bell (allowing the nurse call to be removed), TV remote, the policy, suicide checklist, stop sign (requiring visitors to stop at desk), patient education tool, paper gowns, plastic sporks, paper garbage bags, and zip ties. These items were placed in a large plastic tote. The tote is able to be used to store visitors' items, in an effort to prevent any transfer of dangerous items to the patient. The kit is available in the emergency department and on each nursing unit.

OUTCOMES ACHIEVED

- A standardized method to screen patients for risk of suicide was implemented and is consistently used.
- There is consistent implementation of suicide precautions on all nursing units.
- All clinical and non-clinical areas were highly engaged in this patient safety project.

LESSONS LEARNED

- Using the simulation room was important to determine the items necessary in the suicide prevention kit.
- Watching the current process assisted in knowing what items are necessary for the kit.
- Ongoing follow up after implementation is important. Adjustments to the initial process do not mean the project was a failure but indicates that opportunities were identified.

Improving Patient Outcomes through Collaboration with Emergency Medical Services to Enhance Quality of Pre-Hospital Communication

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Timely pre-hospital communication of critical clinical information from emergency medical services (EMS) providers for ischemic stroke patients facilitates timely care in the emergency department (ED), which greatly improves patients' health outcomes. Critical elements of EMS' pre-hospital arrival report need to include the time that the patient was last known to be well and the results of the Cincinnati Stroke Scale assessment.

Communication of this critical patient data as early as possible prior to arrival in the ED would allow the ED to prepare for ischemic stroke arrivals and to activate the stroke team to minimize the time required to complete essential diagnostics. This results in the most efficient administration of intravenous (IV) tissue plasminogen activator (tPA), when appropriate. Each second in delay of treatment with this "clot-busting" drug reduces likelihood of a favorable patient outcome. However, minimizing the door-to-needle time for tPA administration remained challenging for St. Catherine of Siena Medical Center.

The organization's goal was to work collaboratively with the EMS providers to enhance their communication to ED staff to trigger a situational awareness that a stroke patient would soon be received. A Plan-Do-Study-Act quality improvement methodology was used together with applying Six Sigma principles. The "trigger" of the EMS communication of critical patient data expedites determination of the patient's candidacy for tPA administration and facilitates timely and appropriate care.

OUTCOMES ACHIEVED

- In 2016, 100% of ischemic stroke patients received IV tPA within 60 minutes of arrival.
- Half of all ischemic stroke patients received IV tPA within 45 minutes of arrival (2016).
- There was a 13.5% improvement for door-to-ED physician assessment time (2016 vs. 2014), with 89% of stroke patients assessed by the ED physician within 15 minutes of arrival (2016).
- The hospital achieved a 74% increase in obtaining quality pre-hospital communication from EMS during transport of a potential stroke patient (2016 vs. 2014).

LESSONS LEARNED

- Increased accountability yields improved quality of EMS pre-hospital communication.
- Recognition of excellence in EMS communication through thank-you letters to specific EMS department chiefs to acknowledge the individual EMS providers who delivered the improved communication fosters sustainability.
- Sustained culture changes are achieved by empowering and recognizing all members of the hospital-based stroke team for their contributions to minimizing the tPA door-to-needle time.

Improving Outcomes for the Hospitalized Dementia Patient through Cognitive Stimulation

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In 2014, St. Joseph Hospital decided to achieve a restraint-free facility, exercising the mission, vision, and values that the safety and integrity of those most vulnerable should always be upheld. A high proportion of patients suffer from both acute (such as urinary tract infections and sepsis) and chronic diseases (like dementia) that can affect mental cognition.

In an effort to ease the burden of care while maintaining patient safety and integrity, St. Joseph Hospital established a multi-disciplinary team consisting of representation from the departments of nursing, performance improvement, engineering, infection prevention, and volunteer services. The team used the Plan-Do-Study-Act methodology to engage dementia patients to improve outcomes, decrease episodes of patient harm (falls, intravenous displacement, etc.), and increase feelings of patient integrity.

The team had developed a mobile cart, colloquially termed the “Busy Box,” that could be deployed to the location of the dementia patient. The top of the cart was a washable surface to which multiple items were affixed. These items included a calculator, tap lights, various types of locks, door knobs, water spigots, and light switches. Inside the cart, activities such as coloring books, towels for folding, and wallets with faux money brought entertainment and purpose to the patient. Lastly, there was a CD player with CDs from different eras as well as a photo album with photos from different periods in American history. These items were included to provide familiarity and invoke feelings of comfort. The patients were often accompanied by a volunteer while using the Busy Box. The volunteers would complete surveys with questions regarding the patient’s response to the different interventions that the Busy Box had to offer, as well as their level of engagement. The hospital used this information as a way to gauge the interventions provided.

OUTCOMES ACHIEVED

- There was a 41% reduction in falls per 1,000 patient days from 2015 (4.36) to 2016 (2.57).
- The staff needed to cover continuous patient observation fell by 4.6 full-time equivalents, an estimated savings cost of \$280,600.
- St. Joseph attained a 10.1% reduction in patient days and decreased the average length of stay by 0.39 days.

LESSONS LEARNED

- Using frontline staff during the planning phase increased buy-in and the project’s success has made the staff more comfortable sharing their thoughts and ideas.
- Utilizing the Busy Box enhanced patients’ ability to converse and to make their needs known. This enabled staff and volunteers to build a stronger relationship and rapport.
- In a climate that encourages creativity and innovation, cost-effective alternatives can outperform traditional methods.

Reduction in the Number of Term Depressed Neonates

WINTHROP-UNIVERSITY HOSPITAL, MINEOLA

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Winthrop-University Hospital implemented a quality initiative to reduce the number of term depressed (a five-minute Apgar score <7 or umbilical artery pH <7 due to lack of oxygen during labor) neonates requiring admission to the Neonatal Intensive Care Unit (NICU), who on admission to the labor and delivery unit had Category I fetal heart rate (FHR) tracings.

Review of all FHR tracings of near-miss cases was done to identify the gradual longitudinal FHR changes in the progression of Category I to Category III FHR patterns. The hospital found that there was a predictable order of FHR changes in the deteriorating fetus. This information was presented at monthly departmental meetings by reviewing near-miss cases, showing the progression of FHR tracings from Category I to Category III, and correlating with neonatal outcome.

The hospital hired a second obstetrics/gynecology hospitalist and empowered the two hospitalists and the hospitalist fellow to provide unsolicited second opinions about questionable FHR tracings of all patients in labor. The program encouraged periodic, unprovoked evaluation of all FHR tracings of patients in labor by physicians/hospitalists on-call. A second “set of eyes” was instituted for FHR tracing interpretation in cases with a prolonged second stage of labor (> 2 hours). Nurses were encouraged to escalate process, and a remote transmission of FHR tracing, mandatory for maternal/fetal medicine physicians, was instituted.

OUTCOMES ACHIEVED

- Winthrop-University Hospital saw a six-fold reduction in the number of neonates who had Category I FHR tracing on admission to labor and delivery and subsequently were born depressed.
- There was a decrease in NICU admission and NICU days.
- Neonatal head cooling decreased.
- Perinatal morbidity and mortality decreased.
- Staff empowerment was achieved by leveling the hierarchy.

LESSONS LEARNED

- A second set of eyes provides the objectivity required to identify longitudinal changes in fetal heart rate patterns.
- Having an established escalation policy flattens the hierarchy and empowers all members of the healthcare team.
- Access to expertise through remote maternal/fetal medicine surveillance, as needed, supports the escalation policy and the second set of eyes.



CHAPTER 7
**REDUCING
HOSPITAL-ACQUIRED
CONDITIONS AND
READMISSIONS**



A Multidisciplinary Team Approach to Developing an Intra-Operative Glycemic Management Process for the Surgical Site Infection Prevention Bundle

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Glycemic management of patients with pre-diabetes and diabetes was the last addition to Crouse Hospital's established surgical site infection prevention bundle. An evaluation of practice against current literature and practice at other institutions indicated that a consistent process was missing across the perioperative continuum (pre, intra, and post).

A multidisciplinary team was formed consisting of perioperative leadership, anesthesia providers, diabetes nurse practitioners, quality improvement surgical leaders, and an endocrinologist. The group identified five main contributing factors to inconsistent perioperative practice:

- New York State regulatory barriers on point-of-care testing in designated critical care areas limited who could perform point-of-care testing, where the sample can come from (venous/arterial versus capillary), and whether or not testing meters can be used in critical cases.
- Staff knowledge deficits of pre-diabetes and diabetes existed, including: the endocrine response from surgery, pharmacologic actions of oral hypoglycemic agents versus subcutaneous or intravenous insulin, fear of hypoglycemia in the anesthetized patient, and lack of trained personnel to initiate and maintain insulin drips outside of the intensive care unit. This resulted in a paucity of point-of-care testing intra-operatively.
- Physical barriers, such as limited access to point-of-care testing supplies and surgical positioning of patients, restricted access to fingertips for adequate point-of-care testing.
- There were communication challenges at critical transition points throughout the perioperative continuum. Documentation of testing results and treatment rendered was inconsistent, coupled with no specific communication tool.

- Utilization of the Situation-Background-Assessment-Recommendation (SBAR) form, diabetes nurse practitioner order set, white board in the operating room, and the continuous medication drip record improved consistent communication at critical transition points in care.

OUTCOMES ACHIEVED

- There was a 248% increase in point-of-care testing intra-operatively without significantly increasing the number of patients developing hypoglycemia.

LESSONS LEARNED

- Chart review and gap analysis revealed an opportunity to adapt the process for surgical patients being admitted via non-surgical areas (like the emergency department).
- Staff and provider buy-in to updated practice standards can be challenging.
- Findings suggest that proper training, education, and increased access to supplies (a second point-of-care testing meter added to operating room area) brought higher adherence to the glycemic management process across the perioperative continuum.

Decreasing Peripheral IV Infiltration and Extravasation Rates in the Pediatric Cardiac Care Center

GOLISANO CHILDREN'S HOSPITAL—STRONG MEMORIAL HOSPITAL, ROCHESTER

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Hospitalized pediatric patients often receive peripheral intravenous (PIV) therapy. Intravenous (IV) infiltrates pose a significant risk of tissue injury and increased susceptibility to infection through damaged skin. This project was intended to decrease the overall rate of peripheral IV infiltration and extravasation (PIVIE) in the pediatric cardiac care center.

Baseline information was obtained by collecting hospital data from both the event-reporting system and electronic medical record audits. A variety of educational techniques and workflow modifications were implemented. The hospital adopted evidence-based strategies that are part of a nationwide initiative known as Solutions for Patient Safety by implementing “K-Card Rounding” into practice. K-Card Rounding consists of utilizing a checklist at the bedside to measure compliance with all bundle elements, to decrease the chance of PIV infiltrations and extravasations from occurring. If all bundle elements were in place, the laminated K-Card would return to its holder with the green side facing up. If even one bundle element was missing, the card would be returned with the “orange for opportunity” side facing up so that at a glance, staff could know the status. Colorfully laminated Touch, Look, and Compare (TLC) sheets were posted in all patient rooms to provide visual cues and reminders about properly monitoring PIV.

All staff nurses completed online educational modules and nurses performing bedside handoffs at change of shift included the visualization of all PIV lines and infusions as another opportunity to ensure all bundle elements were in place.

Lastly, to continue to track progress and identify possible themes regarding why PIVIEs continued to occur despite targeted efforts and interventions, staff entered detailed descriptions of all PIVIE occurrences in the hospital-wide event reporting system.

OUTCOMES ACHIEVED

- PIVIE rates decreased significantly.
- A culture was established that embraces staff accountability.
- The patient and family experience improved.

LESSONS LEARNED

- With standardization, the hospital is able to achieve greater consistency in practice, which leads to an overall improved provision of high-quality care.
- Staff accountability plays a major role in decreasing hospital-acquired conditions.
- By partnering with families, the hospital can enhance the care provided and decrease PIVIEs (TLC sheets).

Reducing Acute Care Hospitalizations through Advanced Care Planning

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As part of the New York–Reducing Avoidable Hospitalizations (NYRAH) Program, starting in October 2012, Good Samaritan Nursing Home staff received education regarding the Interventions to Reduce Acute Care Transfers (INTERACT) Program. The program encompasses multiple tools related to assessment, communication, advanced directives, and care planning. Statistical data showed that about 10% of the facility residents, who often have multiple chronic conditions, are admitted for short-term rehabilitation services.

The facility recognized the need for pre-planning and identifying resident and family wishes earlier so that “comfort care” and hospice care can be provided as these patients progressed to the end stages of their chronic disease. This changed the existing process, where comfort care was initiated only when a significant change in condition and decline was identified.

Care management and comprehensive care planning began to transition in 2013 to incorporate palliative care discussions with long-term care residents and their families during quarterly meetings. A formalized policy and physician order set was developed and was reviewed during each care plan meeting with the family and resident. The resident and family were provided with education, information regarding prognosis, and options for care management.

OUTCOMES ACHIEVED

- Resident transfers and readmissions to acute care hospitals were reduced.
- The facility culture was transformed to incorporate palliative approaches to care and support of each individual resident’s quality of life.
- Communication and collaboration improved across the continuum of care.
- There is increased acceptance of advanced directives and advanced care planning.

LESSONS LEARNED

- Communication and relationship development with residents and families regarding prognosis are important in developing a plan that provides comfort as the resident approaches the end of life.
- A person-centered approach to the care and management of each individual resident/patient provides physical, emotional, and spiritual support to enhance their quality of life. Extending this person-centered approach through communication and collaboration across the continuum of care improved overall outcomes, patient satisfaction, and quality.
- The culture of a facility can be changed and enhanced through communication, collaboration, and leadership that provides educational opportunity and support through the process.

Effect on Patient Care of Multi Drug-Resistant Organism Cultures Reported as Critical Values in a Hospital and Ambulatory Setting

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Cultures from any source that grew any multidrug-resistant organisms (MDROs) are reported to the patient's provider once the organism is identified. Organisms identified are Methicillin-Resistant *Staphylococcus aureus*, Extended Spectrum Beta Lactamase-producing organism (ESBL), Vancomycin-resistant Enterococci (VRE), Carbapenem-resistant Enterobacteriaceae (CRE), resistant Acinetobacter, and Multidrug Resistant Gram negative rods. Culture growth of any of these organisms requires that the patient be placed in isolation.

Immediate laboratory notification results in patient placement on contact isolation as soon as the organism is identified, and prompt review by provider of the organism's susceptibility. Antibiotics from the final laboratory culture report are immediately compared to the antibiotics that the patient is receiving. The latter was also applied to emergency department and clinic patients.

This process is a multidisciplinary project that requires participation of medical providers, nursing, microbiology laboratory, pharmacy, and infection control.

OUTCOMES ACHIEVED

- Providers in the hospital, emergency department, and outpatient settings became aware of the results in a more timely fashion. The average time for notification from the laboratory can now be measured in minutes.
- Placement of patients in isolation took as long as 14 hours when the project started in 2014 and reached an average of four hours in 2016.
- A prompt review of culture reports resulted in a much faster antibiotic follow-up with changes of antibiotics, if necessary, happening much earlier for inpatients, outpatients, and emergency department patients.
- This process resulted in a decrease in the institution's hospital-acquired infections.

LESSONS LEARNED

- Treating MDROs as critical values with immediate notification resulted in the providers becoming aware of the presence of an MDRO in their patients much earlier.
- Notification of results prompts placement in contact isolation.
- Timely placement of patients in contact isolation results in a decrease of hospital-acquired infections.
- Effective antibiotic therapy can be improved if the provider is aware in real time of the culture results.

Reduction and Prevention of *Clostridium difficile* Infection

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Hospital-acquired infections (HAI) result in prolonged hospital stays and unnecessary deaths, increased antimicrobial resistance, higher financial costs, and more emotional and personal costs to patients and their families.

Clostridium difficile infection (CDI) most commonly affects the elderly and those who have recently taken antibiotics. The most common cause of *C. difficile* colitis is treatment with antibiotics. The antibiotics are believed to suppress normal colonic bacteria that usually keep *C. difficile* from multiplying and causing colitis.

Jones Memorial Hospital began reporting CDI data in 2009. Its rate was 0.75% with 17 cases. The hospital made it a priority to reduce the numbers of cases and brought together a team of individuals to look at all aspects of the causes of CDI and work at eliminating it from the hospital. The team consisted of the medical director, pharmacist, environmental services staff, infection prevention nurse, nursing, quality management, and laboratory staff.

As the team progressed, it found more areas to investigate and expanded its education to the local nursing homes. The team found that it was unaware of CDI prevention mechanisms.

OUTCOMES ACHIEVED

- Jones Memorial Hospital reduced CDI from 0.75 (17 cases) in 2009 to 0.013 (1 case) in 2016.

LESSONS LEARNED

- Multidisciplinary teams for process improvement enable the team to look at all elements of a problem (i.e., environmental cleaning/products).
- Continuing to look at data and results identifies further elements to improve.
- Continuous education of staff will help sustain improvement efforts.

Preventable Readmission Reduction Collaborative

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In 2014, Kaleida Health's new leadership initiated a system-level collaborative to reduce 30-day readmissions using the Institute for Health Improvement collaborative model. A system-level team that included hospitals, long-term care, and home health was brought together to understand the urgency of reducing readmissions, review published best practices, analyze internal and external data, and develop an action plan with universal readmission reduction strategies to improve patient safety and clinical outcomes.

The system developed a screening tool to help identify one tertiary hospital to pilot the initiative, at which 65% of admitted patients were at high risk for readmission. The organization's culture shifted to a strongly held belief that one preventable admission was one too many. The traditional Plan-Do-Check-Act (PDCA) methodology fosters careful decision-making, spread of practices across the system, and understanding of the impact on reducing preventable readmissions.

The following results were achieved:

- the implementation of a readmission screening tool that asks why patients were readmitted;
- an alternate level of care initiative to divert patients to subacute rehabilitation or skilled nursing from the emergency department (ED) when warranted;
- follow-up appointments made within seven days of discharge;
- an increased commitment with home health to identify at risk congestive heart failure among patients utilizing telehealth;
- an ED alert for patients who had an inpatient admission to a facility within the system within the last 30 days;

- high-risk screening criteria at time of admission flags patients who are at high risk for readmissions; and
- a service was implemented to fill prescriptions prior to discharge.

OUTCOMES ACHIEVED

- The hospital's readmission reduction program ranked 9th percentile in federal fiscal year (FFY) 2013 and ranked 75th percentile in FFY 2017.
- All-cause readmissions decreased 29% in a two-year period (2014-2016).
- There was a 12.3% decrease in heart failure readmissions with the implementation of a heart failure clinical pathway with a longitudinal care plan extending into the community.

LESSONS LEARNED

- Clinical collaboration with providers in-house as well as with providers in the community for patient hand-offs is essential.
- Evaluation of the complexity of the patient's multiple medication list is essential for accuracy of the medication reconciliation process and teaching patients about discharge medications.
- The work is ongoing; creating a learning environment to continually evaluate reasons for readmission in order to develop/refine PDCA cycles of improvement is imperative.

Reduction of CLABSI Throughout the Health System

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Mohawk Valley Health System formed a central line-associated bloodstream infection (CLABSI) process improvement team in January 2015 and a gap analysis revealed that alcohol-impregnated end caps were a level-one recommendation from the Society for Healthcare and Epidemiology in America that the organization had not yet implemented. The team also identified chlorhexidine bathing of critical care patients with central venous access devices (CVAD) for CLABSI prevention as a potential opportunity for improvement.

These products were approved in late 2015 for use at the health system. Throughout January and February 2016, education was provided to all nursing staff for the appropriate use of alcohol-impregnated endcaps as well as chlorhexidine bathing. Educational posters, as well as posters for the bedside, were generated. On February 17, 2016, Mohawk Valley Health System began the use of alcohol-impregnated endcaps, and on March 15, 2016, it began the use of chlorhexidine bathing on all patients with CVAD throughout the health system.

OUTCOMES ACHIEVED

- CLABSI rates were reduced system-wide.
- Staff awareness surrounding bundle of care and CLABSI prevention increased.
- There was a 60.2% reduction in the CLABSI rate comparing March 2015-January 2016 to March 2016-January 2017.
- CLABSI Standardized Infection Ratio (SIR) was reduced:
 - First acute care facility SIR: 2015 = 0.231; 2016 = 0.066.
 - Second acute care facility SIR: 2015 = 0.552; 2016 = 0.386.
- Eleven CLABSIs were potentially prevented.

LESSONS LEARNED

- Continued education is essential.
- Reminders, reminders, reminders: Staff are overwhelmed with new information daily. Using consistent ways of reminding them helps increase compliance.
- Organizational and administrative support is essential for success. Without leadership emphasizing the importance of preventing harm and reducing health-care-associated infections, this could never have become a reality.

Intensive Care Unit CAUTI Reduction

MOHAWK VALLEY HEALTH—ST. ELIZABETH MEDICAL CENTER, UTICA

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St. Elizabeth Medical Center has routinely monitored catheter-associated urinary tract infections (CAUTI) in the Intensive Care Unit (ICU). In 2014, seven were identified, and in 2015, the number increased to nine. In 2016, the Agency for Healthcare Research and Quality (AHRQ) initiated a safety program for ICUs geared toward CAUTI reduction. St. Elizabeth Medical Center's ICU participated in this program with the intent of identifying additional tools that could be used to assist with the goal of reducing cases of CAUTI to zero.

With the help of the infection prevention staff, the medical center identified many means of reducing indwelling urethral catheter (IUC) use, as well as early IUC removal. Interventions implemented as part of this project were:

- increased review of IUC necessity at multidisciplinary rounds;
- development, trialing, and implementation of an IUC removal protocol per provider order;
- removing IUC insertion as an option in provider order sets and creating a stand-alone order set;
- increased education with the staff regarding IUC use;
- huddles performed on all identified CAUTIs looking for fallout and opportunities for improvement;
- development of quality initiative tracking boards with up-to-date CAUTI data;
- reporting of CAUTI rates at monthly staff meetings;
- from staff feedback, recommendation to change from current product due to reflux issues and poorly designed securement device offered with current product; and
- change in the way urine cultures are performed.

OUTCOMES ACHIEVED

- St. Elizabeth Medical Center achieved a reduction in IUC days.
- CAUTIs were reduced from nine in 2015 to five in 2016, a 40% reduction over 12 months.
- The medical center was invited to participate in a webinar as part of the AHRQ project on St. Elizabeth's CAUTI reduction initiatives in October 2016, particularly the provider-ordered IUC removal protocol.

LESSONS LEARNED

- Constant vigilance is needed to reduce CAUTIs.
- Physician and nurse champions are integral to this type of project.
- Education and re-education is needed to reduce complacency with invasive devices; changing culture is not easy!

One System, One Goal: Working Collaboratively to Reduce *C. difficile*

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In 2016, reducing hospital-onset *Clostridium difficile* infection (HO-CDI) across all sites in the Mount Sinai Health System was a singular priority. To disseminate and implement best practices across a diverse, newly formed health system, leadership partnered with infection prevention staff to capitalize on system and local expertise, implement data-driven decision-making, and provide frequent audits and feedback to frontline providers. Reducing HO-CDI was one of the first projects to be implemented system-wide. Aligning system goals and resources while allowing local site independence in operationalization proved challenging, but critical to overall success.

A four-pronged approach was implemented including diagnostic stewardship, enhanced environmental cleaning with audit and feedback, antibiotic stewardship, and a hand hygiene campaign. Diagnostic stewardship consisted of rolling out a diagnostic decision tree throughout the system via education of frontline providers, leveraging the electronic medical record, and clinical laboratory audits. Disinfection practices and audit and feedback of environmental disinfection using qualitative and quantitative methods were standardized. Antibiotic stewardship programs were re-evaluated, and prior authorization and audit feedback practices were coordinated.

A system-wide leadership-sponsored hand hygiene campaign was launched, moving responsibility for hand hygiene compliance out of infection prevention and to the frontline providers. Each of the above interventions was addressed at all of the system hospitals, with local leadership determining the site-specific implementation plan for each hospital to accommodate differences in patient population, workflow, staffing, resources, and physical plant limitations. HO-CDI rates are regularly shared at the hospital and system levels via a quality dashboard.

OUTCOMES ACHIEVED

- A four-pronged intervention reduced HO-CDI from 7.23 per 10,000 patient days in 2013 to 4.13 per 10,000 patient-days in 2016, a 43% reduction.
- Between 2013 and 2016, each individual hospital successfully decreased its HO-CDI rate by between 32% and 79%.
- System-wide hand hygiene compliance improved from 63% in 2015 to 81% in 2016.

LESSONS LEARNED

- Visible leadership engagement and organizational commitment to decreasing patient harm is critical to achieving a reduction in hospital-acquired infections.
- Setting goals and targets at the system level is critical for alignment across sites; allowing sites to customize improvement strategies creates stronger buy-in, adherence, and sustainability.
- Quality dashboards and a clinical governance structure facilitate learning, transparency, and collaboration across hospitals within a system.

Hospital Hand Hygiene Program

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In 2014, Mount Sinai St. Luke's initiated a comprehensive, data-driven inpatient hand hygiene program using The Joint Commission Center for Transforming Healthcare's Targeted Solutions Tool (TST) for hand hygiene. The hospital administration standardized placement of hand sanitizer dispensers, and through a series of town halls, infection prevention leaders trained clinical and ancillary staff in proper hand hygiene technique, as well as how to collect hand hygiene compliance data and to include directly observable reasons for non-compliance.

Baseline data collection by a subset of trained anonymous observers occurred from August 2014 through December 2014, followed by a period of coaching by executive and departmental leadership in January 2015. Oversight of the anonymous observation process ensured that data collection was ongoing and correctly performed on all inpatient units. In February 2015, based on baseline and coaching data, improper use of gloves was identified as the key driver of hand hygiene non-compliance.

Starting in March 2015, improvement actions were implemented at the hospital, department, and unit-levels, including: standardized signage/slogans, a heavily-socialized monthly recognition program awarding the unit and department with the highest compliance, specific workflow modifications for environmental and food services staff, the inclusion of hand hygiene compliance as a key hospital metric at hospital performance improvement and clinical operations committee meetings. Anonymous hand hygiene data collection continued throughout the program to monitor effectiveness of improvement actions and is still ongoing.

OUTCOMES ACHIEVED

- Hospital hand hygiene compliance increased from 41% in 2014 (baseline) to 70.4% in 2015. Hand hygiene compliance increased for all staff-types (clinical and ancillary).
- During this time period (2015 compared to 2014), rates of several hospital-acquired infections decreased, including: hospital-onset *C. difficile* (6.47 to 4.08 per 10,000 patient days), Methicillin-Resistant *Staphylococcus aureus* (MRSA) (0.8 to 0.45), and central-line associated bloodstream infections (1.1 to 0.7).
- Hand hygiene compliance continued to increase in 2016 with a mean rate of 86%, and the rate of hospital-onset *C. difficile* improved even further to 1.87 per 10,000 patient days.

LESSONS LEARNED

- It is challenging to embed anonymous hand hygiene observation as part of "standard work" within both clinical and ancillary departments. The data collection process requires constant oversight, including: evaluation of observer pool productivity and competency, targeted re-training, and regular feedback to unit and departmental leadership.
- The reward and recognition program created friendly competition within the hospital and fostered a sense of pride and achievement in both clinical and ancillary staff.
- Physicians were one of the more challenging groups to engage in the program. Identification and cultivation of physician champions, outside of administration and infection control, should have occurred earlier to improve compliance.

Designing a Congestive Heart Failure Hub Floor to Decrease Readmissions and Improve Patient Outcomes

MOUNT ST. MARY'S HOSPITAL, LEWISTON

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Being part of an Accountable Care Organization (ACO) and focusing on population health management, Mount St. Mary's Hospital was able to form an alliance between physicians and other providers to create a collaborative effort to follow patients with congestive heart failure (CHF) throughout the care continuum.

A CHF readmission team was deployed at the beginning of 2016. It focused on three core initiatives:

- design an area in the hospital for inpatient CHF management;
- enhance education to patients with CHF; and
- improve communication and collaboration with post-hospital providers.

The team consisted of cardiologists, nurses, nurse practitioners, pharmacists, social workers, and home care agencies. A floor was designated where all patients with CHF would be admitted. This was located adjacent to the cardiopulmonary department. A nurse practitioner was hired to follow all inpatients with CHF and provide them with individualized disease management education and support.

Pharmacists round on patients at the time of discharge to provide medication reconciliation education. Medication reconciliation was improved to provide a clearer picture to the patient of medication they should continue or stop when going home. A "CHF rounding flowsheet" was designed in the electronic medical record as a placeholder for multidisciplinary patient education. All CHF patients were provided with a follow-up appointment with their primary medical doctor and cardiologist before leaving the hospital.

OUTCOMES ACHIEVED

- CHF readmissions decreased from 30% in the third quarter of 2015 to 25% in the third quarter of 2016. In 2016, the total readmission percentage was down to 20%.
- The incidence of post-hospital cardiology follow up increased. Outpatient cardiology office went from 4% new CHF post-hospital patients in January 2016 to 19% in January 2017.
- Patient education and support services improved.

LESSONS LEARNED

- The biggest contributor of success was creating a collaboration between inpatient and outpatient services.
- A follow-up cardiology consult is imperative.
- Support from cardiology and administration drove success.
- Sustainability is a key component to maintain control of the process.

Improving Resident Safety through Hand Hygiene Compliance

OUR LADY OF CONSOLATION NURSING AND REHABILITATION CARE CENTER, WEST ISLIP

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With the increasing concerns regarding infection control and prevention in skilled nursing facilities due to the higher risk of infectious conditions in a compromised population and gradually increasing rates of multidrug-resistant organisms and gastro-intestinal infections, Our Lady of Consolation Nursing and Rehabilitation Care Center initiated hand hygiene audits, which were performed through distant observation.

The overall result of these audits in 2014 ranged between 50% and 60% compliance. Additional education regarding the need for enhanced compliance was initiated and the distant observations of staff were continued during weekly environmental rounds. Initial efforts did little to improve statistical outcomes.

The facility increased the frequency of distant observations and incorporated representatives from all departments. Education was provided to each unit/community weekly during environmental rounds to enhance overall compliance. In 2015, the rate of compliance ranged from 40% to 60%, showing no overall improvement despite multiple interventions and educational efforts.

In 2016, compliance increased to 62.9% but receded to 45% in the second quarter. This led to the development of an interdisciplinary leadership committee focused on best practices and alternative methods to improve compliance. The committee chose to utilize The Joint Commission Hand Hygiene Targeted Solutions Tool to assist the facility in calculating the compliance rate and identifying the reasons for non-compliance.

OUTCOMES ACHIEVED

- The hand hygiene compliance rate increased from 45% to a current rate of 70.1% from the first quarter of 2015 to the fourth quarter of 2016.
- The overall nosocomial infection rate, *Clostridium difficile* rate, and multi drug-resistant organism infection rate decreased.
- The initiative has fostered positive management and resolution of facility outbreaks.
- The facility identifies reasons for non-compliance as well as positive performance areas.

LESSONS LEARNED

- Observing clinical practice when the observer is aware does not necessarily reveal the same compliance as when the observation takes place in the clinical setting.
- Focused reviews that incorporate discussion to identify the underlying reasons/causes for non-compliance direct the solutions in a positive direction and improve the compliance rate by eliminating a direct cause.
- Enhanced hand hygiene compliance reduces infection, reduces length of outbreaks, and improves resident/patient outcomes.

Improving Pressure Ulcer Management and Documentation

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St. Catherine of Siena Nursing and Rehabilitation Care Center has a positive trend regarding pressure ulcer assessment and prevention protocols, but was continually struggling with its Centers for Medicare and Medicaid Services quality measure (QM) outcomes related to the “Percentage of High Risk Residents with Pressure Ulcers, Long Stay/Pressure Ulcers New or Worsened, Long Stay.” Despite the fact that residents that were represented in this QM had positive treatment and progression in healing, there were a large number of residents admitted or readmitted with pressure ulcers.

In collaboration with Long Island Healthcare Network (LIHN), in November 2015, a focused audit was performed reviewing all residents with pressure ulcers who were managed and treated within the facility for the previous year, regardless of origin. The audit revealed inconsistencies regarding assessment, staging, documentation, and communication across the continuum. Minimum Data Set (MDS) documentation reflected these inconsistencies, resulting in elevated QM rates. Other than information on transfer forms, documentation and communication with affiliated hospitals was minimal. Overall management and treatment of wounds, however, reflected positive outcomes in healing and resolution.

To manage this inconsistency, the responsibility for wound management was transferred to the registered nurse managers and admission registered nurses who have received annual training in the area of wound/pressure ulcer assessment and treatment and a new certified wound care specialist was brought on board. Using the Plan, Do, Study, Act format and the results of the LIHN audit, the interdisciplinary leadership team formulated an action plan to address the inconsistencies that were identified and improve the QM rates related to pressure ulcers.

OUTCOMES ACHIEVED

- Pressure ulcer QM rates decreased from 12% average in 2013 to a current rate of 7.4%.
- A facility wound care program was developed, focusing on interdisciplinary management, assessment accuracy, and documentation accountability.
- Communication and collaboration with acute care hospitals improved.

LESSONS LEARNED

- Communication across the continuum of care improves quality of care.
- An interdisciplinary approach provides interventions from each healthcare area that collaboratively enhance the healing process and quality of care.
- A wound care program must include assessment and intervention from personnel with wound care expertise and a process that incorporates accountability and a systematic approach to assessment, care, treatment, and documentation.

Person-Centered Interdisciplinary Approach to Falls Reduction

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Falls by the elderly pose significant health and cost concerns. Before the initiation of this project, falls were addressed by a single department with occasional input from other disciplines. Fall rates were above 5%, with a major harm rate of 4.6%.

The Centers for Medicare and Medicaid Services uses assessment data and converts it into quality measures (QMs). These measures assist facilities in quality improvement and give the consumer information on the quality of care delivered by facilities.

St. Catherine of Siena Nursing and Rehabilitation Care Center established an interdisciplinary team consisting of nursing, certified nursing assistants, administration, therapeutic recreation, dietary, environmental services, social services rehabilitation, and plant operations. The team initiated Define, Measure, Analyze, Improve, and Control (DMAIC) and conducted a root cause analysis (RCA) to identify factors that contribute to falls.

OUTCOMES ACHIEVED

- From January 2016 to January 2017, the facility experienced an overall fall rate reduction. In January 2016, the fall rate was 5.15%, and in January 2017 the fall rate was 2.45%.
- The percentage of falls with major harm decreased in 2016, from 4.5% to 2.9%.
- In 2016, the use of antipsychotic medications decreased from 2.2% to 0.08%.

LESSONS LEARNED

- Individualization of interventions yields a higher level of success. This required a culture change for staff, including an increase in communication between all stakeholders (all departments and patients/residents), as well as implementation of interventions not conventionally utilized by multiple departments (e.g., CNAs utilizing essential oil therapy or diversional activities).
- Fall reduction is an interdisciplinary process assessing the individual patient from varied viewpoints (medical, social, psychological, spiritual). This interdisciplinary process increases the efficacy of interventions designed.
- Proactive anticipation of needs is also a crucial factor. Assessment of preferences and life patterns, as well as fall risk potential, assists in prevention of falls. Patients/residents are less likely to engage in unsafe behaviors when they are assured their needs will be met and staff know them personally.
- Patients/residents with cognitive impairment will respond to familiar, comfort-based methods that also assist in decreased restlessness and anxiety, reducing the need for psychoactive medications.

Reduction of Hospital-Onset *C. difficile* Infection

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South Nassau Communities Hospital established an ongoing multidisciplinary task force to reduce hospital-onset *Clostridium difficile* infection (HO-CDI), which included infection prevention and control practitioners, the hospital's epidemiologist/chief of infectious disease, the patient safety officer, and key staff from performance improvement, nursing, pharmacy, and environmental services. The *C. difficile* task force identified four significant areas of opportunity: environmental cleaning practices, overprescribing of antibiotics, inappropriate diagnostic testing, and the clinical care of the *C. difficile* patient.

A hospital-wide education program was conducted and a *C. difficile* protocol was developed, mandating that infected patients be placed in private rooms and remain in isolation until discharge. Infection control and prevention staff ensured isolation policies were being followed and nursing task force members observed hand hygiene using soap and water, then hand sanitizer. A major antimicrobial stewardship campaign was also begun.

To enhance environmental cleaning practices, the hospital invested in a vapor steam system, helpful in removing *C. difficile* spores (and other pathogens) from environmental surfaces in rooms that housed infected patients. In addition, wheelchairs and stretchers are tagged when patients with *C. difficile* leave the unit. This communicates to the receiving department that gown and gloves are required for handling the equipment and that the stretchers and wheelchairs will be cleaned with a sporicidal agent after use. In addition, an algorithm to properly use the more accurate Polymerase Chain Reaction (PCR) testing for *C. difficile* was built into the hospital's electronic medical record (EMR). The hospital's EMR was also programmed to alert physicians when a *C. difficile* test had already resulted during the stay to avoid duplicate testing.

OUTCOMES ACHIEVED

- There was a significant, sustained decrease in the *C. difficile* rate: 12.3 per 10,000 patient days in 2014 and 6.4 by year-end 2016.
- Costs associated with patients on isolation decreased.
- Fewer patients on isolation led to improved patient and staff satisfaction.

LESSONS LEARNED

- Hard stops in the EMR are needed to facilitate appropriate testing.
- "Mini" root cause analyses helped to identify misconceptions and process issues.
- Re-education of staff on the basics of *C. difficile* and appropriate testing are necessary multiple times for the concepts and processes to "stick" and become practice.

Utilizing Technology to Improve Care Transition and Resource Utilization

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South Nassau Communities Hospital implemented a software program to identify each patient's risk for readmission. The software receives patient demographic data from the admission-discharge-transfer system. Answers to seven evidence-based questions were embedded into the admission assessment in the electronic medical record (EMR). The analysis of these data provides the care team with the patient's readmission risk score, needs level, and the next recommended level of care.

The case managers access this analysis of all the newly admitted patients on their unit and prioritize their work to see the patients at the highest risk or with the highest needs first. They visit each patient to validate that the recommendation is appropriate and that it is aligned with the patient/family preferences for care. Objective data are used to assist patients and families in shared informed decision making when choosing the level of post-acute care. Referrals to home healthcare and other facilities are transmitted electronically through the program with the ability to attach any required documents.

The readmission risk score and needs level is posted in the "results" tab of the EMR for prominent visibility by all disciplines. The software program provides analytic reports that graphically demonstrate compliance with data entry, analysis of patients by readmission risk and needs levels, and comparative readmission rates of patients who receive the recommended next level of care with those who do not.

OUTCOMES ACHIEVED

- Cost savings related to improved efficiency of case managers who are now able to organize their work based on evidence-based risk stratification of patients were achieved.
- Improved outcomes were demonstrated in the cohort of patients who received at least the recommended level of care.
- Efficient electronic transmission of referrals by social workers to multiple receiving facilities was achieved.
- Communication of risk and needs level to all disciplines occurred via the EMR.

LESSONS LEARNED

- Interdisciplinary collaboration was critical in the development and execution of this project.
- Expectations for support from technology partners must be clear at the outset.
- Evidence-based data do not necessarily influence patient/family choice for the next level of care.

Taking a Stand Against Falls: Preventing Falls After Discharge from an Inpatient Rehabilitation Facility

ST. CHARLES HOSPITAL, PORT JEFFERSON

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Fall prevention in hospitals and rehabilitation facilities often focuses on preventing falls within the facility, leaving a gap in awareness and knowledge of the fall risks after discharge. St. Charles Hospital collected data on patients who were discharged from inpatient rehabilitation facilities (IRFs) with a post-discharge survey conducted three months after discharge via telephone call with the patient and/or the family or caregiver of the patient. Patients were asked about their current functional status, as well as their overall experience of care at the IRF. The program added a new question for patients discharged in January 2015. Patients are prompted to respond “yes” or “no” to the following question: “Have you sustained a fall since being discharged from the rehabilitation program?”

An interdisciplinary group of rehabilitation professionals reviewed the initial data over six months. Nearly 23% of patients reported a fall within the first six months of the data collection period (n=572). Based on the results, in October 2015, this group developed a new education program targeted to patients and families preparing to be discharged from the IRF. The education aimed at informing patients about their risk for falling and preparing patients and families with specific fall prevention interventions to reduce the risk of falling in the home as part of the interdisciplinary group class.

OUTCOMES ACHIEVED

- From October 2015 through September 2016, 17.3% of patients reported falling within three months of discharge from IRF [729 surveys were completed].
- Patient-reported falls have been below the facility’s historical average of 22.9% for 11 out of the 12 months since beginning the class.
- Of the 387 patients that attended falls class from October 2015 through October 2016, 13.4% reported a fall within three months of discharge.

LESSONS LEARNED

- Despite notable changes in mobility and function after injury or illness precipitating inpatient rehabilitation admission, patients and family members were not aware of the increased risk of falling when returning home.
- Families and caregivers were underutilized in the efforts that could impact on the environmental factors that put patients at risk for falling in the home.
- As the data began to demonstrate the effectiveness of the fall prevention and home safety education class, there was a concerted effort to increase the attendance of patients and/or families to the class.

Utilizing the Joint Commission Targeted Solutions Tools: Developing and Sustaining a Fall Prevention Program

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Beginning in 2013, St. Charles Hospital transitioned to an electronic medical record (EMR). Staff members working closely with fall prevention were invited to participate in selecting validated assessment tools and to collaborate in the development and implementation of a system-wide fall prevention policy. This collegial sharing of ideas and practices began to stimulate new ideas toward the achievement of the common goal of “fewer falls and fewer falls without injury.”

In April 2015, St. Charles Hospital received an invitation at the system level to participate in joining The Joint Commission (TJC) Center for Transforming Healthcare Targeted Solutions Tool (TST) for Preventing Falls. This initiative corresponded with introducing staff to the newly developed fall prevention policy.

Joining the TJC TST project involved a year-long commitment in a dedicated cohort using the Design-Measure-Analyze-Improve-Control (DMAIC) approach to determine the contributing factors to falls. The resultant knowledge of fall causation would lead to a more consistent prevention program, decreasing the number of falls and falls with injury.

OUTCOMES ACHIEVED

A total of 173 falls were entered into the TST electronic portal. The following reflect data entry from July 2015 through December 2016:

- The baseline falls rate per 1,000 patient care days was 4.171; the “improve/control falls rate” as of December 2016 decreased to 3.540.
- The falls with injury rate per 1,000 patient care days decreased from 1.017 baseline to 0.670 for improve/control.
- Call light issues and bathroom assistance were the two most frequent contributors to falls.
- Forty-five percent of falls related to medical causes/loss of balance.

LESSONS LEARNED

- TST and DMAIC methodologies could be applied to all clinical areas of the hospital, developing a consistent fall prevention approach for staff, regardless of location.
- The implementation of the weekly interdisciplinary “falls huddle” meeting with regular attendance by the chief nursing officer and the director of risk management, along with the completion of formal minutes and inclusion of those minutes in the monthly patient safety committee, invested the project with importance.
- Frontline staff inclusion in the weekly huddle meeting improved understanding of the challenges they face at the unit/department level and enhanced overall communication regarding the desired outcomes.

CAUTI Improvement in the Acute Care Setting: Implementation and Sustainability

ST. PETER'S HOSPITAL, ALBANY

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St. Peter's Hospital implemented a multi-disciplinary, multimodal approach to create a culture that improves and sustains patient outcomes to reduce the incidence of catheter-associated urinary tract infections (CAUTIs). These initiatives include a review of necessity prior to urinary catheter insertion, annual competency regarding urinary catheter placement, bladder scanning and peri-care, electronic CAUTI maintenance bundle checklists, a reflexed urine culture test, multidisciplinary rounding, and mini-root cause analyses (RCAs) on all CAUTIs and near misses.

Additionally, these practices were hard-wired into the culture, which has led to the sustainability of these initiatives over a two-year period. The engagement of multiple strata of providers and leadership has helped to support these initiatives, and has been integral to long-term success.

OUTCOMES ACHIEVED

- The CAUTI standardized infection ratio (SIR) was reduced by 67% (1.71 in 2014, 0.73 in 2015, 0.57 in 2016).
- CAUTI events decreased by 63% (43 in 2014, 21 in 2015, and 16 in 2016).
- The urinary catheter device utilization ratio was reduced by 21% (0.19 in 2014, 0.16 in 2015, and 0.15 in 2016).
- CAUTI checklist completion increased by 17.2% (0.77 in 2015 to 0.93 in 2016).
- Knowledge of evidence-based CAUTI guidelines increased across all disciplines.
- The hospital created a sustained culture shift in the utilization of urinary catheters.

LESSONS LEARNED

- Full engagement from the senior leadership team to the bedside care team is required to create a continuous cultural change. Daily discussion of device utilization and regular discussion at monthly meetings helps to promote this engagement and to increase accountability.
- When spikes in the incidence of CAUTI are observed, a hardwired, standardized process for CAUTI reduction will provide the foundation to quickly identify opportunities for improvement, which creates sustained CAUTI reduction overall.
- Bringing the evidence-based bundle for CAUTI prevention to the bedside is a great educational tool and keeps the critical elements of the bundle in the forefront for providers.

Sustaining an Engaged, Safety-Driven Team: A CUSP Story

ST. PETER'S HOSPITAL, ALBANY

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In 2015, St. Peter's Hospital adopted in one pilot unit the Comprehensive Unit-based Safety Program (CUSP) model that supports the idea that teamwork, communication, and a culture of safety are key to preventing patient harm. Having achieved reductions in both catheter-associated urinary tract infections (CAUTIs) and central line-associated bloodstream infections (CLABSIs), the pilot unit had a keen interest in sustaining these positive outcomes and in developing an infrastructure for swift identification, learning, and response to new (or former) safety issues if and when they arise.

OUTCOMES ACHIEVED

- The pilot unit sustained "Tier 1" (highest possible) performance on the hospital's employee engagement survey during pre- and post-CUSP implementation periods.
- Among 21 respondents who provided open text comments on the employee engagement survey, 30% submitted feedback on the CUSP program, and all were positive.
- With the exception of two CAUTIs in 2014, and one during 2016, the CUSP unit sustained monthly CAUTI rates of 0.0 from 2014 to 2016.
- With the exception of two CLABSIs in 2016, the CUSP unit maintained monthly CLABSI rates of 0.0 from 2014 to 2016.
- The total number of patient falls on the unit decreased from 33 in 2015 (pre-CUSP) to 28 in 2016 (post-CUSP implementation); the total number of patient falls with injury decreased from three in 2015 (pre-CUSP) to one in 2016 (post-CUSP implementation).

LESSONS LEARNED

- Active physician involvement in CUSP implementation is highly beneficial to a unit CUSP team. The pilot unit had the support of a physician and mid-level provider at the onset of CUSP implementation, but they did not have active roles in the launch of the pilot. Clear expectations and designated roles for these staff are strongly recommended.
- The role of an administrative point person to support ongoing communication, organization, and follow-up among the CUSP team is critical to success. Dedicating staff resources to maintaining clear, action-oriented correspondence with the pilot unit signaled to staff that CUSP was an ongoing priority and that its importance would not diminish over time.
- An active role by a member of the senior leadership team is highly beneficial when attempting to implement the CUSP model. When frontline staff see participation and attendance of senior leadership at CUSP meetings, a strong message of support from the highest level of the organization is conveyed.

A Process Approach to Decreasing Hospital-Onset *Clostridium difficile* Infections

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Stony Brook University Hospital tasked a quality improvement (QI) team with focusing on decreasing hospital-onset *Clostridium difficile* infections (HO CDI) in early 2016 and included a multi-disciplinary team with departmental representatives from executive leadership, healthcare epidemiology, nursing, quality improvement, hospitalist, infectious disease, and laboratory staff, and others.

The goals set by the team included:

- decrease CDI standardized infection ratio (SIR) <1.0 with a stretch goal of 0.8;
- reduce hospital onset *C. difficile* rates by 20% from 2015 rate;
- implement the *C. difficile* Information Technology (IT) Tableau reporting dashboard for real-time tracking of unit- and physician-specific test ordering; and
- develop a comprehensive *C. difficile* prevention education program.

A gap analysis of the variance between the current and future states provided multiple avenues of opportunity to focus these efforts. The hospital implemented an electronic patient record alert and guardrail to ensure appropriate ordering of *C. difficile* staff education for appropriate specimen collection. Laboratory clarification for appropriate specimen testing and increased compliance with room turnover and housekeeping are also opportunities to improve.

OUTCOMES ACHIEVED

- A robust educational module was implemented with annual review.
- HO CDI decreased 25.8% from the 2015 baseline, with 50 fewer CDI cases.
- Progressive improvements were made in CDI SIR throughout 2016, with the lowest rate to date, 0.774, in the fourth quarter of 2016.
- The annual 2016 SIR finalized at 0.993, well below the 2015 rate of 1.283.
- There was a 20.7% decrease in CDI laboratory testing compared to 2015; associated cost savings per testing reagent amount to nearly \$21,000.
- The antibiotic stewardship team reviews and makes recommendations for appropriate need, route, and dose of all high-risk antibiotics.
- Adenosine triphosphate (ATP) testing was implemented to ensure appropriate patient room turnover for high-touch surfaces, achieving a >80% compliance rate.

LESSONS LEARNED

- Success can be achieved through hard-wiring best practices with continuous Plan-Do-Check-Act cycles to review and assess progress and efficacy.
- Education, well-defined goals, and data feedback are essential to generate buy-in and a unified effort.
- Full stakeholder representation ensures a dynamic and capable improvement team.

Interventions in a University Hospital to Improve VTE Prophylaxis

STONY BROOK UNIVERSITY HOSPITAL

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Stony Brook University Hospital implemented various approaches to improve venous thromboembolism (VTE) prophylaxis use, including a paper form VTE risk assessment and order form, a mandatory VTE advisor, and a lockout of order entry. However, given that the hospital's performance was still below benchmarks on many national initiatives, opportunities for further improvements were identified.

In 2013, an administrative quality improvement program was initiated, focusing on major patient safety issues, VTE being a top priority. With full support of administration, numerous interventions were initiated with collaboration from multiple departments within the university hospital. Engagement from the chief medical officer, the deputy nursing director, and the chief information officer was pivotal in hospital-wide policy institution, change in protocols, and adoption of electronic medical record (EMR) enhancements. In addition, the time period for VTE advisory completion was reduced to 12 hours.

Unit-based nursing administration reviews a daily report of every patient regarding VTE prophylaxis, allowing for timely intervention for ensuring appropriateness. The VTE nurse practitioner (NP) team (instituted in 2009 and composed of two NPs, a vascular surgery attending, and a phlebology fellow) review all VTEs diagnosed within the institution to ensure appropriate treatment and identify any omissions or errors in prophylaxis. The emergency department (ED) changed its protocol to discharge low-risk DVT patients from the ED, avoiding admission. Buy-in was received from all members of the healthcare team to improve documentation (including coding).

OUTCOMES ACHIEVED

- Improved VTE prophylaxis resulted in fewer nosocomial VTE events, increasing patient safety and satisfaction.
- Admissions for DVT and length of stay decreased.
- The core measure looking at warfarin discharge instructions improved from 0% to 100% over three years.
- The core measure regarding compliance with potentially preventable VTE decreased from 15% to 0% in three years.
- Since the initiation of the VTE team, perioperative VTE (PSI-12) has demonstrated a steady decline.

LESSONS LEARNED

- Completion of the VTE advisor training does not ensure appropriate prophylaxis. Further guidance was needed.
- Ongoing monitoring and accountability at the bedside is needed to ensure adequate prophylaxis is received and documented.
- A patient education program would be beneficial for patients to be involved with their own VTE prophylaxis (i.e., donning sequential compression devices).

Target “0”: Reducing Hospital-Acquired Patient Harm

WHITE PLAINS HOSPITAL

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To positively impact healthcare outcomes and ensure patient safety, White Plains Hospital created a composite harm score. Patient harm events with the most opportunity for improvement were identified and pulled into a numerical whole number composite score. This method of communicating harm is easily understood by staff at all levels in the organization.

A baseline harm score was calculated for 2015. Each event category was reviewed and the most problematic events were selected as measures in the harm composite score. The harm score was placed on the unit-based scorecards and the overall board quality scorecard. In addition, reduction of harm is embedded in the annual evaluation and incentive for physicians, management, and staff.

The monthly harm score is calculated for the number and type of harm events and communicated to the entire hospital. The use of a pie chart indicating the type of harm events that month, with frowning stick figures representing every patient that suffered a harm event, helps to personalize harm events, rather than just reporting out rates. Staff are frequently reminded that these events could have occurred to a family member, friend, or colleague. Events are tracked and reviewed every month by an inter-professional team to identify root causes and determine the preventable factors in each case.

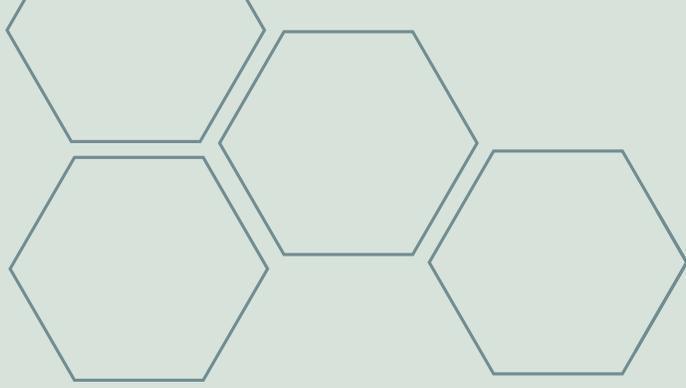
Task force committees were established for each harm category and charged with using Lean Quick Change methodology and evidence-based leading practice recommendations to mitigate harm events and improve patient safety. Staff and physician engagement in harm score reduction has increased greatly. As a result, staff have a clear understanding of their departments’ role in preventing patient harm and improving patient safety.

OUTCOMES ACHIEVED

- The harm score rate decreased by 50% (14 in 2015 to seven in 2016).
- Healthcare-acquired condition (HAC) and Patient Safety Indicator-90 rates decreased below the benchmark.
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) “Likelihood to Recommend” increased from the 73rd percentile in 2015 to the 80th percentile in 2016; and Overall Rating of Care increased from the 55th percentile in 2015 to the 62nd percentile in 2016.

LESSONS LEARNED

- Creating a method to personalize the harm score helps staff members relate to it more and make improvements.
- Harm prevention is everyone’s job—the hospital does not limit communication to nursing and physicians. Everyone in the hospital is empowered to play a role in harm prevention.
- Applying an inter-professional approach to harm prevention is effective and necessary.





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