A Guidebook to Patient Safety Leading Practices: 2010

Advancing Patient Safety Through Ideas and Innovations

ONTARIO HOSPITAL ASSOCIATION

This year, the Ontario Government introduced its Excellent Care for All Strategy, which includes measures to enhance hospital accountability with respect to patient care through Bill 46, the *Excellent Care for All Act.* The government also indicated its plan to begin providing health care services throughout the system that are built on evidence and leading practice.

Because Ontario's hospitals are dedicated to providing the highest quality patient care and to improving patient safety, they have welcomed this new strategy that builds on the excellent work of hospitals throughout the province.

Over the year, the Ontario Hospital Association (OHA), on behalf of Ontario hospitals, has also focused on advancing quality and efficiency, and recently released its *Quality and Patient Safety Plan 2010-2013* (QPSP) to guide the OHA's work in this important area.

We are pleased to launch the third Guidebook to Patient Safety Leading Practices entitled, *Advancing Patient Safety through Ideas and Innovations.* The aim of the 2010 Guidebook is to highlight and share innovative patient safety initiatives in Ontario hospitals, focused on four themes: boards and leadership, teamwork and communication, transparency of data and accountability, and patient and family and engagement. The Selection Committee worked tirelessly to review over 140 submissions. The quality and volume of submissions received overall attest to the great work underway in Ontario's hospitals.

We encourage you to read through these submissions which you may be able to adapt to your own hospital setting. Sharing best practices is the prerequisite for improving patient care, and ultimately, system performance.

Finally, I would like to thank all our Member hospitals that took the time to share their initiatives with the OHA, and to congratulate all the organizations that have been chosen for the 2010 Guidebook.

Sincerely,

Tom Closson
President and CEO
Ontario Hospital Association

A Guidebook to Patient Safety Leading Practices: 2010

Advancing Patient Safety Through Ideas and Innovations

PATIENT SAFETY AWARD WINNER HEALTHACHIEVE 2010

BOARDS AND LEADERSHIP

TEAMWORK AND COMMUNICATION

TRANSPARENCY OF DATA AND ACCOUNTABILITY

PATIENT AND FAMILY ENGAGEMENT

POST-DISCHARGE PHONE CALL PROGRAM - IMPROVING TRANSITIONS IN CARE

The Toronto East General Hospital (TEGH) implemented the Post-Discharge Phone Call (PDPC) program, wherein patients are called 24-48 hours following a hospital visit to ensure they understand and follow their discharge instructions, get medication counseling if needed, and have their follow-up appointments scheduled. This program was created to enhance patient safety and minimize risk issues by improving the transition from hospital to home.

In June 2006, a pilot was conducted in the Emergency Department (ED) to assess the feasibility of calling patients following their ED visit, and it was shown that patients were quite receptive to being called post-discharge. In December 2007, TEGH invited late career nurses to participate in a new process to educate patients before discharging them home using a revised discharge summary. This has become a standard of care and has expanded from ED patients to include medical and surgical, maternal/newborn, cardiac catheterization laboratory, and rehab patients.

Since September 2008, 5,754 inpatients were contacted and 96% stated they understood their discharge instructions and 94% were satisfied with their care. Corporate Patient Satisfaction scores went from 84.7% in 2007 to 92.2% in 2008, and the most recently available scores indicate a 90% satisfaction score. Additionally, in 2009, based on feedback from patients, the hospital sent 297 ER physicians and 254 inpatient physicians letters of appreciation for providing excellent care. Care gaps that were identified during the PDPC, such as post-discharge pain management, have been addressed through quality improvement initiatives.

PDPC made for Inpatient units

	September 2008 to February 2009		March 2009 to September 2009	
	Number of Patients	% of Total	Number of Patients	% of Total
Calls completed	3452	75%	1004	68%
Understood discharge instructions	3337	97%	975	97%
Satisfied with care	3208	93%	944	94%
Requiring pain counseling	241	7%	90	9%
Requiring medication counseling	176	5%	59	6%

TORONTO EAST
GENERAL HOSPITAL

This experience has been transformational for staff, provided important feedback to managers and care providers about their service, and improved the quality and experience of care for patients.

All the quantitative and qualitative data collected from the PDPC program are posted on the organization's intranet for staff, physicians, and volunteers to view. The hospital also has many examples where a post-discharge phone call resulted in preventing a medical error or "making a save". Staff have reported increased job satisfaction from making these calls and connecting with patients in this way.

One example of "making a save" was a PDPC to an elderly patient recently discharged from a medical unit, who appeared confused and disoriented when assessed over the phone. After reviewing the discharge medications, the nurse terminated the call and called the patient's contact person, who had been present at the time of discharge, and learned that the patient did not want to listen to them. The nurse then called

the patient's family physician, who reassured the nurse a house call would be made. At the end of the day, the nurse followed up with the family physician who had made the house call, and discovered the patient was having a reaction to the medication, and was able to provide the appropriate intervention.

Implementing post-discharge phone calls with a safety focus first, and a service focus second, allows for timely two-way communication between client and provider that improves patient safety, satisfaction and service, along with staff satisfaction.

3M is honouring the 2010 OHA Patient Safety Award Winner with a $5,000 prize going to the team at Toronto East General Hospital for their outstanding work in the implementation of the Post-Discharge Phone Call Program.

3M provides clinical expertise and supports best practices in patient safety.

3M

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BOARDS AND LEADERSHIP

ADVANCING THE BOARD'S PATIENT SAFETY COMPETENCY

University Health Network
Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital

The University Health Network (UHN) focused on providing its Board with more educational opportunities on issues of quality and patient safety, to help them develop a better understanding of this complex field.

In 2008, select members of the Quality Committee of the Board (QCoB) received formal training on quality through the Institute for Healthcare Improvement. These members then helped implement an education plan to share this knowledge with other QCoB members using optional hour-long education sessions with topic experts held immediately after committee meetings. These sessions proved of limited success as members were often unable to attend due to conflicting commitments and attention fatigue.

The education program was re-assessed and UHN developed "Snapshots on Safety" where, during monthly meetings, the Patient Safety Officer (PSO) highlighted a current issue to facilitate discussion on its practical application to QCoB activities. Discussions are scheduled first on the agenda to engage members, and a time limit of 10 minutes ensures a concise discussion on a specific topic. The frequency of meetings allows a number of topics to be examined.

UHN wanted to extend this knowledge to the full Board, and did this by ensuring that quality topics were discussed early in the meeting with a goal of spending at least 25% of time on these issues. Discussions were led by the Chair of the QCoB and/or the CEO. The PSO is invited on a quarterly basis to share details of a critical incident, system failures that contributed to the incident, and actions taken as a result. These presentations have led to active engagement of the full Board on patient safety issues while allowing QCoB members to share insight gained from their involvement in the subcommittee.

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ENGAGING THE BOARD IN QUALITY AND PATIENT SAFETY

Sunnybrook Health Sciences Centre's (Sunnybrook) Board of Directors has supported a strategy to further engage its members in quality and patient safety issues – a key strategic priority for the organization. This includes a Board subcommittee with a specific mandate for quality of care; frequent reporting of quality performance indicators to the Board using a Balanced Scorecard and a Quality and Patient Safety Report; regular educational sessions about quality and patient safety issues; and Board involvement in Patient Safety Walkarounds, which has increased members' awareness of patient safety issues and demonstrates leadership support. This strategy is based on the Institute for Healthcare Improvement's "Getting Boards on Board" campaign.

Sunnybrook's Board reviews a comprehensive Quality and Patient Safety Indicator report every quarter, and has been able to respond to a number of quality-of-care issues through this regular reporting. Board members have a comprehensive understanding of reporting processes and helped improve the format for presenting indicator results by including control charts showing comparator and trending data. The Board has also allocated sufficient meeting time to review indicator results, revising indicators and obtaining benchmarks whenever possible, and discussing follow-up where required.

For example, the Board noted that cardiac surgery surgical site infection rates were increasing and requested a detailed chart review, asking questions about whether patient acuity had changed, whether there were changes in practice regarding patient selection, and whether the comparator was appropriate. The Board then received feedback on compliance rates regarding process measures such as antibiotic administration and sought infection and prevention expertise. The Board continues to monitor this indicator closely.

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Board Director

INDICATOR DASHBOARD ENABLES BOARD OVERSIGHT OF PATIENT SAFETY AND QUALITY OF CARE

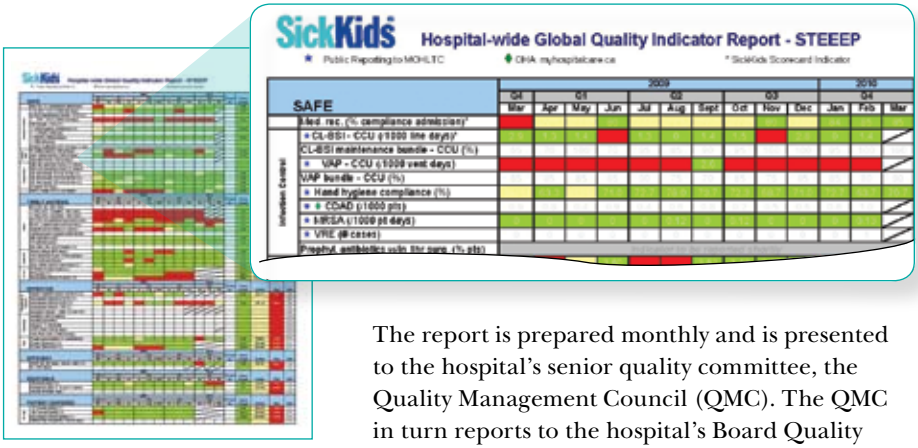
Quality was prioritized by The Hospital for Sick Children's (SickKids) Senior Leadership as a key focus of its strategic plan. To this end, a comprehensive review was undertaken to determine the characteristics of high-quality health care organizations. Senior leadership support for quality and availability of information were identified as two important characteristics.

The six dimensions of quality as described by the Institute of Medicine's "Crossing the Quality Chasm" report which includes the Safe, Timely, Effective, Efficient, Equitable, and Patient-centered care (STEEEP) program, were adopted. The objectives were to develop a concise report for leadership of key hospital quality indicators encompassing all dimensions of quality.

A one-page report was developed which concisely describes 61 key quality indicators for a 13-month period, organized by dimension of quality (STEEEP). The format has allowed senior leadership to easily identify trends for each indicator and to focus on problem areas for discussion and improvement in a timely manner. The report has highlighted issues in a number of areas including waits for diagnostic tests and Emergency Department, report turnaround times, deferrals to critical care and chemotherapy, specimen integrity, preventative maintenance of equipment, infections, medication reconciliation, and pain management, which has led to targeted improvement efforts in these areas.

Over the last year, significant improvements have been seen in a number of areas including: 28% improvement in unexpected returns to critical care; 63% improvement in critical care deferrals; 20% improvement in pain assessment compliance; 54% improvement in MRI wait times; 25% improvement in CT wait times; 72% improvement in Diagnostic Imaging report turnaround times; a 16% improvement in chemotherapy delay days; 50% improvement in medication reconciliation compliance; 75% improvement in compliance with the ventilator-associated pneumonia bundle; and 19% improvement in hand hygiene compliance. Some areas like specimen integrity and ED waits remain an issue.

SickKids®



The report is prepared monthly and is presented to the hospital's senior quality committee, the Quality Management Council (QMC). The QMC in turn reports to the hospital's Board Quality Council, highlighting areas of significant improvement or concern. Data is presented in either monthly or quarterly periods, depending on the data source. Targets have been set for the majority of measures and performance is categorized using a traffic light colour code; the values for the Green/ Amber/ Red targets are specified for each indicator.

Timeliness of data is a key factor in the report's usefulness. Run charts are maintained for each indicator and statistical process control (SPC) run chart rules are applied to better determine if monthly fluctuations are the result of common cause or special cause variation.

The report has evolved over the years with new features being added as requested by the leadership team.

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A ROADMAP FOR REDUCING ADVERSE EVENTS BY 50%

St. Joseph's Health Centre in Toronto is committed to reducing adverse events by 50% by March 31, 2011. This board-led strategy has been driven from the top-down and operationalized from the bottom-up.

For two weeks in February 2010, Improvement Advisors met with the leaders of all 20 hospital departments (clinical and administrative) to create department-level quality strategies which identify interventions, key measures, and timelines that make up the roadmap to achieving this quality and safety target. A weekly, monthly and quarterly monitoring schedule ensures the initiative is on-track.

Since the kick-off in April, the team fully resourced 80 quality initiatives, of which 12 are corporate initiatives that affect multiple areas of the hospital, require evidence-based interventions and a cross-departmental, interdisciplinary team. The initiatives were enhanced by charters, key measures and teams (including physician champions and executive sponsors). The Decision Support team has included a "Big Aim" indicator on each program scorecard to track progress, and data is made available on a weekly basis. At the leadership team's stand up weekly meeting, chaired by the CEO, managers and directors demonstrate accountability for their performance metrics. All senior leaders' compensation has been tied to achievements against the "Big Aim" indicators and the board has assigned a significant portion of their meetings to safety and quality.

Several resources have been created to share stories internally and with the community, including a CEO blog about the "Big Aim" strategy and its progress, a new Chatter section on the intranet (Twitter-like comment space), and the Community Engagement and Urban Health department's community panels.

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MONDAY MORNING SAFETY HUDDLE

As part of Windsor Regional Hospital's (WRH) strategic planning process, frontline staff determined that rather than the traditional monthly or quarterly review, the hospital needed to create corporate-wide quality and patient safety awareness, team ownership of issues, "real time" monitoring of trends, and more proactive rather than reactive management.

The Monday Morning Huddle (MMH) began in August 2008 as a way to embed patient quality and safety in the organization's culture – one of WRH's strategic directions. The MMH is 10-15 minutes in length, attended by vice-presidents and directors, and where 11 indicators (e.g., hand hygiene compliance, hospital acquired infection, patient falls) are talked about. These indicators are a subset of the indicators monitored by the Board of Directors and posted on the internet for public viewing. For each indicator, there is an improvement team comprised of a director responsible for the indicator and multidisciplinary frontline staff who develop action plans using the previous weeks' results. During the MMH, the director presents the outcomes from the previous week along with plans to address trends and immediate concerns. Results and action plans shared during the MMH are posted on staff bulletin boards and are discussed at regular "unit council" meetings.

The MMH is easily implemented and cost-effective. As a result of the MMH and associated action plans, WRH has seen an overall decrease in patient falls with injury (83%), an increase in hand hygiene compliance (20%), and a decrease in overall hospital-acquired infections (40%). The culture of responsibility is being ingrained in WRH leadership and its quality agenda continues to develop. As relevance of certain measures decreases, they are replaced by new areas of concern.

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FULFILLING OUR MISSION AND CORE VALUE OF QUALITY CARE

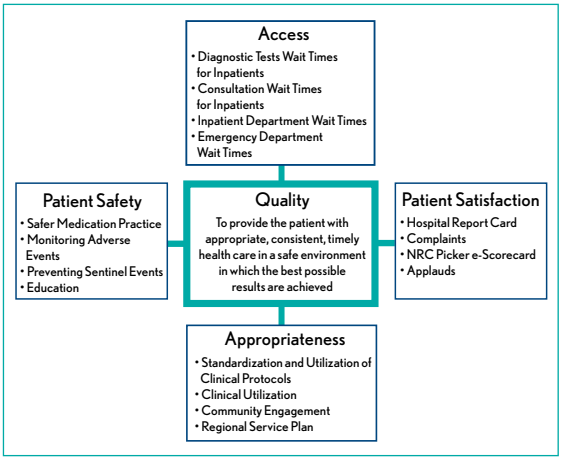
In order to fulfill its mission, to provide quality health care to the community it serves, and to better reflect Quality as a core value, Hôpital Glengarry Memorial Hospital (HGMH) established a Balanced Scorecard in 2007. The scorecard is made up of four quadrants: Quality of Care, Growth and Learning, Human Resources and Financial Management, and System Integration and Partnership.

For the Quality of Care quadrant, a Quality, Patient Safety and Risk Management Committee was formed, tasked with drafting a Terms of Reference document and formulating the goals and objectives for patient safety and quality of care. These documents provided the basis for a Quality Plan, highlighting four areas: Access, Appropriateness, Patient Safety, and Patient Satisfaction.

Each of these areas was further broken down and an action plan was developed, guided by the following criteria:

- What strategies would be employed to improve the area of concern?
- What performance measure / indicator would be used?
- What benchmarks would be employed for comparison?
- Who would be the lead in these endeavors?

Each month, the lead for each area reports to the Committee, and the following month, this report is brought to the hospital's Board of Directors showing progress on individual action plans compared to the previous month, year, provincial benchmarks, etc. Also, a number of strategies to keep the Quality Plan top-of-mind for the entire HGMH team, include posting the Balanced Scorecard and the Quality Plan on bulletin boards, providing educational sessions, and establishing a slogan (HGMH puts the U in Quality / A HGMH, votre bien-être est primordial) displayed on all literature and banners.



From the four Quality areas, Patient Safety was chosen as the first target, with a number of areas identified in the Patient Safety Action Plan: safer medication practices, monitoring of adverse events, preventing sentinel events, and education.

Medication reconciliation on admission was the number one improvement strategy identified for safer medication practice. The Patient Safety Coordinator was the lead and a target to process medication reconciliation on 100% of patients admitted to the hospital was set. In spring 2007, a Medication Reconciliation Policy and Procedure was formulated, along with the appropriate form, and was approved both by the committee and the CEO. This was followed by educational sessions for all registered nursing staff and physicians in the summer, and the Patient Safety Coordinator began to audit the number of Medication Reconciliation Order Forms completed on admission. From August 2007 to April 2010, the audits demonstrate the completion of medication reconciliation on 96% to 100% of all admitted patients, with an average of 56 admissions per month. HGMH is continuing with this initiative and plans to formulate, educate and implement Medication Reconciliation at transfer/discharge shortly.

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FROM BOARD TO BEDSIDE: CREATING A CULTURE OF PATIENT SAFETY

The Brant Community Healthcare System (BCHS) has identified patient safety as a corporate priority and an important step in achieving its vision of excellence in health care close to home. The Board of Directors recognized the need for a comprehensive approach to patient safety that would become an integral part of all facets of the organization. In 2007, the development of a patient safety plan was incorporated into the strategic planning process.

The BCHS launched its Patient Safety Program in 2008, and also identified an executive sponsor, appointed the Board Quality Improvement Committee as the overseer, and applied a methodology (logic model) that would allow it to clearly articulate and measure engagement, activities and outcomes. The goal was to create and maintain a pervasive culture of Patient Safety and Justice. Three steps were taken:

1. *Greater Board oversight*, with 25% of the Board agenda being dedicated to discussing patient safety, along with incorporating the patient safety plan into the orientation program. As part of senior leaderships' commitment, a Patient Safety Coordinator was hired.
2. Purchase of an *electronic event reporting system.* In the first year, there was a 500% increase in reported events, also noted in year two and three; and patient events resulting in harm decreased. For example, with implementation of a predictive falls assessment tool and electronic bedside medication verification systems, the falls rate has decreased by 2%, as has medication events.
3. *Senior Leadership walkabouts*, where staff sharing safety concerns resulted in reprioritization of the capital equipment budget and a mass purchase of new beds.

The BCHS patient safety plan is being refreshed to reflect the lessons learned, and provide a roadmap for the future.

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TEAMWORK AND COMMUNICATION

"EDUQUICKS"- PATIENT SAFETY EDUCATION AT THE BEDSIDE

The Neonatal Intensive Care Unit (NICU) at Mount Sinai Hospital is one of the busiest units with a large staffing complement of 150-200 people. The inputting and tracking of patient safety reports can be an onerous task for a large unit like the NICU. Patient safety issues that are not investigated can result in an ineffective system and operational issues persisting and perpetuating in the patient care environment. A well-defined methodology for disseminating educational material derived from the investigations of patient safety reports was required.

In May 2009, there were an estimated 100 patient safety reports that needed to be investigated and collated for commonality. In August 2009, the Nursing Leadership Team used the Plan-Do-Study-Act (PDSA) process to triage the reports, prioritize the common issues, and develop educational plans to roll out to all staff in the NICU. Due to the large number of staff and fiscal responsibility the unit faced, the Leadership Team needed to find a methodology to educate over 150 staff with minimal cost and time disruption, keeping the education material consistent for everyone. As a result, in September 2009, the team came up with the concept of the "EDUQuick".

EDUQuicks are quick 15-min interactive in-services/education sessions related to the NICU patient safety reports that staff receive while at work, at break, or at the patient bedside. The premise behind the EDUQuick is to increase education and awareness among frontline staff in order to ensure everyone is "on the same page" with respect to patient care and safety. These sessions are led by one or two people, and once a staff member has received the EDUQuick in-service, they are "signed-off" for the unit's educational records.

According to the NICU patient safety reports, during the months of August to October 2009, there were six critical incidents of extravasations. As a result of these reports, the first NICU EDUQuick began in October 2009 and was rolled out to more than 75% of staff by December 2009. The topic was Peripheral Intravenous Care and Maintenance to Decrease the Incidence of Extravasation in the NICU. Since the

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

implementation of this first EDUQuick, there have been two to three safety reports related to extravasation, with two being "good catches". To date, the NICU has implemented three EDUQuicks:

1. PIV Care and Maintenance
2. Prostaglandin Delivery and B Braun Pumps
3. Nursing Handover- what information do we hand over during shift change?

Nursing Handover Sheet

Reporting on	Descriptors
Patient ID	Name bands and given name, GA, Corrected Age, Dx
Respiratory	Vent/CPAP settings, FiO2/Saturation trends, Apnea/Bradycardia, chest assessment and secretions/suction
Cardiovascular	Murmur, PDA, BP, color, perfusion, heart rate, ECHO and follow-up
Neurological	PIPP, fontanelle, seizure activity, sleep/wake patterns and activity level
Integument	Skin, mouth, eyes, burns, incisions and dressings
TFI (IDC)	Calculation, solutions, rates and site (Bag to Baby)
GI	Abdominal assessment, girth, oral intake, tolerance, residuals, stools and plan
GU	Urine output and Dip stick
Orders	Doctors, consults, pharmacy and dietitian
Medications	Med count, next dose, drug levels and antibiotics (Why?)
Isolation	No/Yes (Why?)
Labs/Tests	Done, pending results and results, Labs/tests to be done
Family	Care plan, Family Care Time discharge/transfer planning, breast feeding plan

The culture in the NICU has shifted to one of positivity and change. The staff value filling out the reports because they are now seeing improvements and educational initiatives related to their efforts around identifying and reporting patient safety issues.

The latest EDUQuick on Nursing Handover relates to an increased number of incident reports regarding vital patient care information not being communicated from shift to shift between nurses. According to the NICU Patient Safety Reporting Statistics, there were more than 29 reports related to missed medications, doctors orders, procedures and IV rates not being communicated from shift to shift from December 2009 to May 2010. As this EDUQuick is implemented along with the NICU Nursing Handover Tool, the NICU expects to see a downward trend in actual incidents and an upward trend in "near misses or good catches" associated with Nursing Handover.

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CLINICAL PROTOCOL REDUCES PREVALENCE OF URINARY CATHETERS

Staff at Trillium Health Centre observed that indwelling urinary catheters were inserted frequently, stayed in place too long, restricted patient mobility, delayed discharge and caused urinary tract infections (UTIs). As a result, an interdisciplinary team of nurses and physicians developed, implemented and evaluated the "Indwelling Urinary Catheter Protocol", to promote early removal of unnecessary catheters, thereby decreasing dwell time and reducing catheter associated UTIs. Data on catheter utilization was collected pre- and post-implementation of the clinical protocol.

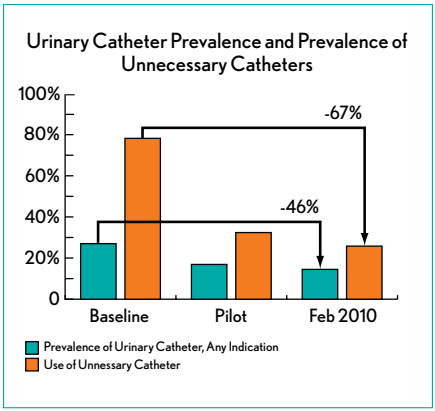
The protocol is initiated through a written physician order or through a pre-existing order set. Once ordered, nursing reassesses the need for the urinary catheter on a daily basis and removes the catheter if its ongoing use does not meet at least one of seven best practice/evidence-based approved criteria.

The protocol was tested on three medical units. Baseline data on catheter utilization was collected during a two-week audit prior to implementation, and at two weeks, six months and twelve months post-implementation.

At baseline, overall catheter utilization was 27%, slightly above the 25% average for hospitalized patients reported in the literature. Two weeks after staff education and implementation of the protocol, overall catheter utilization dropped to 16.9%. Overall catheter utilization dropped further to 14.5% at one year, a relative 46.5% decrease from baseline.

Unnecessary catheters were defined as those in situ that did not meet at least one of the approved criteria. Unnecessary catheter prevalence decreased from 78.2% at baseline to 32.4% two weeks post-implementation, and was reduced even further at one year to 25.8%. This represents a relative reduction of 67% at one year post-implementation of the protocol. Because of its success, the protocol has been implemented hospital-wide.

The clinical protocol has established and disseminated leading research-based standards for acute care hospitals thereby enhancing patients' experience of safe, high quality care by reducing the risks associated with the ongoing use of a medical device. It is also well-recognized that catheter dwell time is a major risk factor for development of UTIs and can thus act as a surrogate marker for catheter-associated UTIs (CAUTI).



Frontline nursing staff have said that the protocol helps them feel empowered to make clinical decisions that impact patient care.

Data collection on CAUTI reduction through use of this protocol is targeted for future quality improvement initiatives. This protocol has demonstrated that clinical practice can not only be improved, but that these improvements can be sustained over time.

At Trillium, there is evidence of real culture change regarding the use of indwelling urinary catheters and will help future improvement efforts targeting decision-making at the time of unnecessary catheter insertion.

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CONTROL OF CDI BY ANTIBIOTIC STEWARDSHIP IN A SMALL COMMUNITY HOSPITAL

Campbellford Memorial Hospital (CMH) is a small, 34-bed community hospital in rural eastern Ontario. It is an older facility with the majority of accommodations having shared bathrooms and no formal isolation rooms. Occupancy rates were close to 100% throughout the outbreak period of Clostridium Difficile-Associated Disease (CDI) in 2007.

Prior to April 2007, CMH experienced sporadic incident nosocomial cases of CDI or frequent loose stools and stool positive for clostridium difficile (C. Diff.) toxin with either onset of symptoms over 72 hours after hospital admission, or a history of hospital admission within the previous four weeks. The average rate was 0.3/1000 patient days/month (about one case every three months) over the 21 months prior to April 2007.

Beginning in April 2007, CMH experienced much higher rates of incident nosocomial CDI. In a 14-month period (April 2007 to June 2008), CMH had 49 incident nosocomial cases of CDI with an average rate of 3.1/1000 patient days/month. Forty-seven cases had a history of hospital antibiotic use, 71% of the antibiotics used were fluoroquinolones and 57% of the fluoroquinolones used were moxifloxacin.

In September 2007, a Rapid Response Team was deployed to investigate and carry out a retrospective analysis on the management of C. Diff cases. This team consisted of Dr. Richard Schabas, Consultant Internist; Dr. Paul Williams, Chief of Staff; Kelly Isfan, CEO; Jan Raine, CNO; Marilyn Petherick, ICP; Tammy Philp RN, Unit Coordinator; Dianne Laroche, Risk Manager; John MacPherson, Facilities Manager/ Housekeeping; and Carrie Cleverdon, Public Health.

Areas for improvement were identified and a number of activities implemented. These included changing the schedule for cleaning of isolation rooms, changing the hand sanitizer and cleaning products to ones that contained a higher percentage of alcohol, re-education of staff on proper hand hygiene and use of personal protective equipment, and supplying all isolation patients with as many disposable products as

CAMPBELLFORD MEMORIAL HOSPITAL

possible, including stethoscopes and blood pressure cuffs, bedpans, and commode liners. CMH continued to monitor the infection rates closely. Despite the implementation of these housekeeping and patient management measures, CMH was unable to control the outbreak.

On June 17, 2008, the Rapid Response team met and carried out another retrospective analysis, which resulted in CMH instituting several additional measures. These included double cleaning of CDI patient rooms seven days a week from five days, and an antibiotic stewardship program. Memos were sent to physicians and notices posted requesting that they avoid the use of fluoroquinolones for inpatients. There was special emphasis on reducing moxifloxacin use because of the particularly strong association of CDI with this antibiotic. All orders for moxifloxacin for inpatients were automatically reviewed by the hospital pharmacist and consultant internist and alternative antibiotics recommended to the most responsible physician. Fluoroquinolones were removed as the first choice for treatment on the pneumonia care map and order set. A C. Diff. order set was developed with antibiotic stewardship as a focal point.

Since these new measures were implemented, CMH has had only one case of nosocomial CDI in the 23 months from June 17, 2008 until May 2010. The use of moxifloxacin declined from an average of 87 doses per month during the 14 months of the outbreak, to an average of 12 doses per month – an 87% decrease in the first six months after implementation of the antibiotic stewardship program.

CMH's antibiotic stewardship program was effective at changing antibiotic use and may have played a decisive role in ending a persistent CDI outbreak.

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CODE STEMI FOR THE PATIENTS IN THE CELHIN - A COLLABORATIVE APPROACH

The objective of the Code STEMI (ST elevation myocardial infarction) initiative was to achieve region-wide adoption of the Canadian Cardiovascular Society/American Heart Association (CCS/AHA) recommended guidelines for STEMI by all health care facilities within the Central East Local Health Integration Network (CE LHIN), and to develop a comprehensive regional plan for patients identified with STEMI or high-risk acute coronary syndrome (ACS) within the CE LHIN.

This initiative was aimed at addressing an existing issue which was providing seamless and integrated Code STEMI care between the Central LHIN and CE LHIN regions because of the disparity in access to advanced cardiac care due to a large geographical area.

The CE LHIN Pilot project started in parallel with the Toronto Heart Attack Collaborative (THAC) through collaboration between the Rouge Valley Health System (RVHS), The Scarborough Hospital, and Toronto EMS in February 2009. The patient outcomes were excellent, and the expansion to provide Code STEMI to all of Scarborough and Durham was initiated in April 2010 through similar teamwork and by adding Lakeridge Health Corporation and Durham Region EMS.

The team established and achieved objectives of engagement throughout the planning, implementation and evaluation phases through frequent meetings, teleconferences, and steering committee membership.

The following results were obtained:

a) Achieved median door-to-balloon time of 90 minutes for STEMI patients across CE LHIN in more than 50% of the cases;
b) Utilization of EMS' ability to perform 12 lead ECG for diagnosis in-field of Code STEMI patients and transportation directly to Rouge Valley Centenary Catheterization Lab. for percutaneous coronary intervention (PCI);
c) Initiation of after-hours call schedule to support 24/7 Code STEMI services;

d) Repatriation agreements completed with RVHS, The Scarborough Hospital and Lakeridge Health Corporation for patients to return post-procedure and recover closer to home;
e) Development of a common database with THAC to provide benchmarking and action plans to maintain quality service; and
f) Identification and monitoring of quality and utilization indicators and share these weekly with all partners for immediate feedback and integration of best practice and quality care review process.

Efficiencies realized from the implementation of Code STEMI at RVHS were:

a) The average length-of-stay for STEMI patients has dropped by more than half a day overall (3.3 - 2.7), and 2 (6.1 - 4.1) days for patients admitted through the emergency department (ED); and
b) A seven-hour reduction in the length of time a patient is in the ED for STEMI patients.

The partners for both the pilot within Scarborough and the newly implemented Durham Region expansion have been engaged at all levels. The CEO and staff members at all centres, and the EMS services consider this their "Code STEMI" program indicating that the collaboration and integration of services was excellent. Within the CE LHIN, this initiative has been considered an example of successful integration of the Clinical Services Plan for Cardiac services. This is congruent with the "One Health Network" approach to health care. The patients have felt the impact of immediate care and transportation to the Catheterization Lab for PCI with follow up at the Cardiac Rehab program.

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DRHC'S NORTHERN SURGICAL OUTREACH PRE-OP PROGRAM

The Surgical Outreach Program at Dryden Regional Health Centre (DRHC) was implemented as a result of numerous surgical cancellations and potential patient safety concerns that arose from northern patients who were unprepared for scheduled surgical procedures. The objective was to significantly decrease the number of surgical cancellations and improve the post-operative safety of these patients by increasing patient compliance and knowledge and decreasing the possibility of infection.

The team leading the initiative included the Community Care Access Centre (CCAC), Non-Insured Health Benefits Program (NIHB), Northern Nursing Station staff, X-Ray department, Occupational Therapy and Physiotherapy (OT/PT) departments, Pre-operative Nurse Educator, Anaesthetist, Surgical Booking Clerk, Anishinaabe Patient Navigator, Dietary department, Laboratory, volunteers and the patient. The team developed a process where five to six clients from the north are transported to Dryden pre-operatively where all tests, procedures and consultations are completed during a six-hour session, with a goal to remove any barriers that prevent the patient from being fully prepared for surgery.

Prior to program implementation, the Surgical Booking Clerk would receive a request from a patient, then schedule the procedure and send information and preparation requirements. This led to many complications including:

1. Heightened patient anxiety due to language barriers and understanding of procedure and preparation.
2. Test and procedures not completed pre-operatively due to the Nursing stations being unaware of the requirements.
3. Pre-operative infections not being reported and resulting in cancellations.
4. Escorts into Dryden were unreliable and led to cancellations.
5. Many surgeries were cancelled due to medications being missed or taken at wrong times.

With the new process, the Surgical Booking Clerk determines an appropriate date for the Northern Client Teaching Day, the patients who are available for that date, and then sends a pre-operative teaching package and date confirmation card to the patient, NIHB and the Nursing Station. The hospital then coordinates with the Dietary department to ensure appropriate meals are served on the day; the Anishinaabe Patient Navigator and volunteers are scheduled to escort and occupy patients all day; the CCAC and OT/PT departments are scheduled to complete their evaluations and ensure all equipment required upon discharge is available; and lab work, X-rays, pre-op teaching and the pre-anaesthetic consult are also completed.

Savings to the system is about $36,000 annually from decreased hospital cancellations from six to seven a year before 2007, to zero in 2009. The project has also:

1. Removed the language barriers and ensured that patients understand all the preparation (i.e. “fasting means not eating or drinking”);
2. Coordinating travel arrangements ensures escorts are reliable and all details are met;
3. Enhanced communication between members in the circle of care; and
4. Significantly decreased patients’ anxiety by helping them understand the system, the procedure and the hospital.

DRHC has received numerous compliments regarding this program and it has had a significant positive impact on the peri-operative care for patients from the north.

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INTEGRATING MEDSCHECK TO ENHANCE PATIENT SAFETY

Medication safety along the continuum of care is dependent on the quality of medication information at each point of transfer. Toronto East General Hospital (TEGH) assessed the impact of integrating a community-based medication history (MedsCheck) into peri-operative medication reconciliation for elective orthopedic surgery patients. Eligible patients and community pharmacies were contacted to coordinate the MedsCheck prior to the Pre-Admission Clinic (PAC) visit. At the PAC visit, the MedsCheck document was used to prepare a best possible medication history (BPMH) which was then made available to the team (e.g., physicians, nurses) for subsequent peri-operative assessments. Eighty-two patients were included in the study.

Integrating MedsCheck resulted in positive outcomes; it was completed for 73.8% (31/42) of eligible patients who were contacted prior to their PAC visit. The average number of medications was 8.4 per patient. In addition, at the point of post-operative medication reconciliation, the percentage of patients with at least one unintentional medication discrepancy decreased from 68.4% (13/19) to 47.6% (39/82) post-intervention. Total unintentional discrepancies decreased from 25.6% to 10.6%.

TEGH believes the pilot process is sustainable because existing systems were used to engage patients, community pharmacists and hospital staff in the entire continuum of medication reconciliation. Patients indicated an interest to have a MedsCheck prior to surgery, and became more familiar with their medications allowing increased patient participation.

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POINT-OF-CARE TESTING IMPROVES PATIENT SAFETY

In October 2009, South Bruce Grey Health Centre (SBGHC) implemented the first of three point-of-care testing (POCT) interfaces to automatically upload test results into patients' electronic health records. SBGHC sought a solution to improve documentation, decrease wait times, and improve the safety and quality of care for patients. SBGHC's Point of Care Committee worked through the planning and implementation of the POCT interfaces.

Audits performed in 2007 identified errors related to charting, transcription, policies and procedures (an overall error rate of 15.9%, which rose to 27% in 2008, and 42% in 2009). In February 2008, the committee began investigating POCT interfaces factoring in software research, IT requirements, development of workflow, policies and procedures, and staff training. The implementation of the three interfaces was phased, beginning with glucometers in October 2009, i-STAT in January 2010, and urinalysis in June 2010. The implementation was followed by a significant drop in errors, and a February 2010 audit on POCT for glucometers revealed an overall error rate of 2%. With manual charting for POCT eliminated, the majority of errors are avoided and other checks and balances ensure tests are being completed properly.

Efficiencies and cost savings have been achieved, along with improved patient safety. Barcoded armbands for inpatients were also introduced to identify the patient and link the POCT results directly to their electronic chart, which has reduced error rates. The time required to perform tests and chart results has been decreased by several minutes per result, and call-backs have decreased, resulting in overtime cost savings.

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ENGAGING THE ER TEAM IN MEDICATION RECONCILIATION DURING ADMISSION

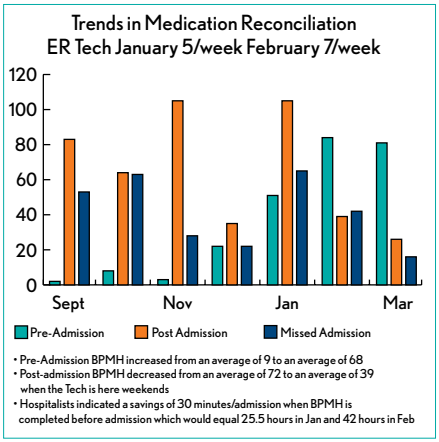
Ross Memorial Hospital began an initiative to complete a Best Possible Medication History (BPMH) for all patients admitted to a hospitalist through the emergency room (ER). The BPMH is a complete list of all medications both prescribed and over-the-counter, which is confirmed by the patient if possible, and at least one other source.

The hospital had a program in place to conduct Medication Reconciliation (Med. Rec.) on patients over the age of 65 taking more than four medications, but the program was not capturing this information before admission, and as a result, too many patients were missed. The team leading this new initiative was part of a Kaizan event through the LEAN process that the hospital had initiated to address ER wait times and patient flow. It included Pharmacy, Nurses, Hospitalists and Support Staff. It took four days to complete the Kaizan and then a trial was continued for six months.

The first change was to move the Med. Rec. Technician into the ER for her to be physically present. She was provided with a pager, a work space and the computer equipment she needed. A process was set up whereby the ER Physician pages the Hospitalist when there is an admission to process. The Hospitalist then pages the Med. Rec. Technician and together, they begin the BPMH and indicate if the medication is to continue, discontinue or change. This order is then scanned into the system and can be entered in the hospital's Meditech Pharmacy, which dispenses the medication, often before the patient arrives on the floor. The Pharmacist is able to address discrepancies very quickly since all information is available electronically from any workstation.

In January 2010, the service was increased from five to seven days to address the patients who were missed on weekends. This involved training more Pharmacy Technicians to cover the extra hours.

The project has been a huge success! The Hospitalists estimate a savings of 30-60 minutes per admission. The Nurses have made the Med. Rec. Technician an integral part of the team and use her as a resource for many issues. Completion of pre-admission BPMH has gone from 9% to 82% a month, and since most patients are captured before admission, post-admission BPMH has decreased from 72% to 26% a month; missed BPMH patients have decreased from 52% to 18%; and discrepancies are identified and addressed within hours instead of days.



The addition of the Med. Rec. Technician to the ER has been an overwhelming success. Staff feel very valued and it has increased their job satisfaction. The Hospitalists comment about the increased efficiencies daily and readily page and discuss the process with the Technician. Nurses using the BPMH for transcription, find the process to be clear, concise and easy to interpret. Patients' medication safety is addressed by highlighting the discrepancies and getting them on the "right" path from the start. Pharmacists are able to advise Physicians, Nurses and patients on medications. The hospital hopes this initiative will have a significant impact on the re-admission rates in the future. The service has been so readily accepted, that now other Physicians are asking for the service. Future plans include a BPMH on all admissions through the ER.

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SKIN AND WOUND CARE EXCELLENCE AT NORTH YORK GENERAL

North York General Hospital (NYGH) in collaboration with Nursing Practice Solutions, Smith & Nephew, and the Central Community Care Access Centre (CCAC), utilized LEAN methodology to implement a program in skin and wound care. The skin and wound program includes assessment, prevention, education, and best practices for wound care. Prior to this program, there was no standardization in the prevention, assessment, and treatment of skin and wound care.

Focused action using advanced wound care products and proven clinical approaches have dramatically improved the identification, protection and support of skin integrity, and as a result, NYGH moved from a specialist model to one of building capacity, transferring knowledge and evidence-based best practices to the bedside.

Metrics to date include a 2007 to 2009 comparison of the following:

- Sustained reduction in pressure ulcer (PU) prevalence to 8.5% (from 21%);
- Decrease in Hospital acquired PU to 58% (from 82%);
- Standardized product formulary of 100% completion from no standardized products;
- 89% of patients reported no pain with dressing changes;
- Frequency of dressing changes (from 41% daily dressings to 0% daily dressings);
- Pain assessment documented (from 24% to 83%) completion;
- 82% of all nurses attended curriculum education and 100% had measurement of competencies;
- 80% reduction in Stage III and IV PUs;
- 0% of PU were infected (7% in 2007);
- In 2008, 0 surgical wounds were infected down from a total of 13% in 2007; and
- Increased identification of patients at risk for a PU with a prevention plan in place to 94% (from 61% in 2007).

The Central CCAC has also identified a 66% decrease in patients discharged with hospital-acquired pressure ulcers.

The 2007 audit also demonstrated seven stage III PU which could have potentially cost an estimated $277,400 and 249 excess bed days to manage. The percentage of PU that were infected at NYGH was 7%, and surgical wound infections were 13%. The cost to treat these infections with antibiotics was averaged at $169 per patient for a 10-day regimen. Another cost in treating PU is the unnecessary daily changes of dressings. At least 48 patients at NYGH had dressings changed daily. This amounted to 56 hours of nursing time per week, or 1.4 fulltime nurses per week. Reducing this to three times weekly saves 33 hours of nursing time a week, equal to 0.9 full-time nurses.

This innovation was designed so that it could be shared, adapted and implemented effectively to improve health care and foster system improvements. Proven tools were put in the hands of health care professionals who work daily with wound care patients. Nurses have reported and demonstrated empowerment and autonomy in delivering wound care best practices. Physicians and Surgeons have participated in and led wound steering committee meetings and educational sessions in collaboration with the Advanced Practice Nurses. The Skin and Wound program established the skills and resources within NYGH to deliver consistent, best-practice wound care, thereby improving patient outcomes and reducing costs.

The sustainability plan for skin and wound care includes a hospital-wide knowledge transfer strategy, bi-annual prevalence studies, on-unit support by Clinical Nurse Educators, Advanced Practice Nurse partnership, and an interprofessional approach and inter-organizational collaboration with community partners.

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HOME FIRST – BETTER OUTCOMES FOR SENIORS

Halton Healthcare

Halton Healthcare Services (HHS) in partnership with Mississauga Halton's Local Health Integration Network (LHIN) and Community Care Access Centre (CCAC) created "Home First", a program aimed at producing better outcomes for seniors and their families, reducing ALC patient numbers, and maximizing the LHIN's Aging-at-Home investments. The goals were to minimize the number of post-acute patients transitioning to long-term care (LTC) from the hospital and to develop a comprehensive integrated plan for appropriate inter-organizational care.

From a patient safety and quality perspective, Home First reduces the risk of hospital-acquired infections and hospital-associated de-conditioning, where the longer a patient remains in acute care, the more dependent they become on supports for daily living activities. It also increases patients' chances to improve functioning through community-based support programs, avoiding the need for LTC.

By directly involving clients and families in planning their post-discharge care, patient flow improved and this resulted in dramatically reduced ALC-LTC numbers, with some patients remaining at home and no longer requiring LTC placement. Other results of the program included:

- 50% decrease in total number of ALC cases from 105 (Sept 08) to 52 (Sept 09)
- 60% reduction in number of "No-Bed Admits"
- Time in gridlock from 100% to 20%
- 50% reduction in number of new referrals to LTC
- 0% ALC-LTC growth achieved and sustained for 1 year
- Decrease in acute care ALC from 28% (Sept 2008) to 3-5% (March 2009)

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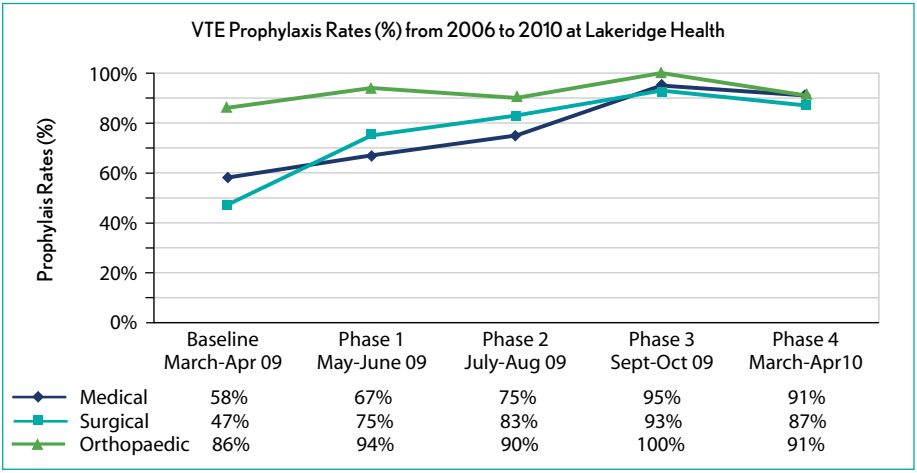
TRANSPARENCY OF DATA AND ACCOUNTABILITY

VTE PROPHYLAXIS QUALITY IMPROVEMENT INITIATIVE

In 2006, Lakeridge Health participated in the Canadian Thromboprophylaxis Patient Safety Initiative (CTPSI), which involved use of audit-and-feedback, pre-printed orders and involvement of local pharmacists as change agents. An initial audit of 50 patients from each group showed that appropriate prophylaxis was provided to 21%, 46% and 76% of eligible medical, surgical and orthopaedic patients respectively.

Lakeridge's objective was to improve patient care by increasing VTE prophylaxis to over 90% of all eligible medical and surgical patients. Using the Plan, Do, Study, Act (PDSA) Cycle framework, a comprehensive strategy of three interventions was developed: a Pre-Printed Admission Order Set containing up-to-date VTE prophylaxis, an innovative computer generated reminder tool, and ongoing medical/nursing education and public awareness strategies.

Significant organizational change was required to implement the comprehensive three-pronged strategy. Development and approval of the Pre-Printed Admission Order with VTE Prophylaxis option required multidisciplinary input and the support



of senior administration. Distribution to all the admission points involved Program Directors, Nurse Managers, Pharmacists and Wardclerks. Additionally, a reminder tool report was created by the Pharmacists with support from IT. The report was printed on each medical and surgical unit where nursing staff collaborated with physicians to ensure the information was reviewed. Finally, education sessions were presented by Physicians, Pharmacists and Nurses, providing further clinical education to all disciplines on the importance of VTE prophylaxis.

Continuous audits for all patients were conducted to measure performance rates using a standard form and uniform methodology closely based on the CTPSI study protocol. The results were presented across the organization. During a seven month period (April to October 2009), appropriate VTE prophylaxis compliance increased to 95%, 93% and 100% in medical, surgical, and orthopaedic patients respectively, which when compared to the rates prior to the initiation of the strategy (58%, 47% and 86%), showed that the interventions resulted in a statistically significant improvement ($p<0.05$ for all three patient groups). A recent audit (one week in April 2010) revealed sustained adherence to recommended VTE Prophylaxis of 91%, 87%, and 91% in medical, surgical and orthopaedic patients respectively.

Staff and physicians were interested in monitoring the progress of the intervention, and results were presented to staff whenever possible, with posters highlighting the main outcomes. A presentation to the Quality Committee of the Board was well-received and a hospital target of achieving a 100% appropriate VTE prophylaxis rate was endorsed.

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HAND HYGIENE COMPLIANCE CAMPAIGN

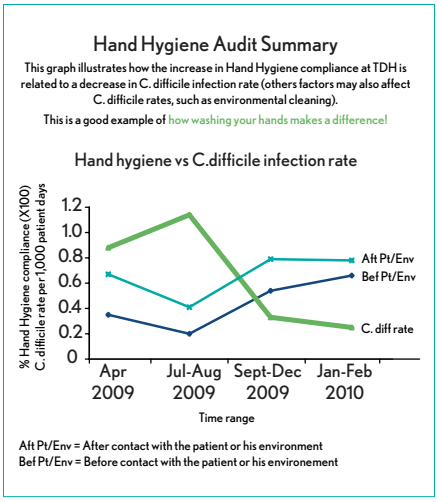
Health care-associated infections (HAI) are a threat to patient safety. The most common means of transmitting HAIs is through the hands of health care providers. Improving hand hygiene compliance decreases the risk of HAI and the associated complications and costs.

The August 2009 hand hygiene compliance results at the Timmins and District Hospital (20% before initial and 40% after contact with patient/patient's environment) were shared with the Board Quality Committee and they identified that improving compliance had to be an organizational priority and set a goal of 70% or better by the end of 2009.

A steering committee comprised of the Chief Nursing Officer, Quality and Patient Safety Lead, Infection Control Practitioners, Improvement Advisor, frontline staff and a Process Consultant from 3M, developed an improvement strategy. The key components included:

- An improvement charter with timelines and responsibilities identified
- A survey to understand staff perception
- A root cause analysis with frontline staff
- A "Change Ideas Matrix" to evaluate opportunities for improvement
- An action and control plan to ensure sustainability

Improvement strategies focused on the availability of alcohol-based hand rub (ABHR) and skin care products, increasing the number of audits, and education. The hospital recruited and trained frontline staff as auditors to assist with providing representative compliance data from all inpatient areas. Mandatory educational sessions were provided and 79% of the staff attended, with the remaining 21% to complete an online module.



Engaging staff, physicians, and management and providing regular feedback of compliance results have provided an objective measure of changes in staff behaviour and was a vital factor in sustained improvement.

As a result of the commitment of hospital staff and physicians, including management, the hospital has demonstrated sustained improvement in hand hygiene compliance to 70% before initial contact and 81% after contact with the patient/patient's environment for all health care providers, in March 2010.

Engaging stakeholders and raising awareness of the role of hand hygiene in transmission of HAI have been key components in enabling improvement. The next steps planned are to identify team-specific audit results so that resources can be allocated to areas that have an opportunity to sustain and improve upon results.

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PREVENTION OF VAP AT WINDSOR REGIONAL HOSPITAL

In 2006, the Ventilator-Associated Pneumonia (VAP) rate for patients in Critical Care was 12.4/1000 ventilator days. As a result of this high rate, a team consisting of staff from critical care, respiratory care, physicians, decision support and senior leadership began to gather baseline data. The goal of this team was to reduce the incidence of VAP in critical care patients by 50% from the baseline using best practice guidelines from Safer Healthcare Now. An electronic data collection tool was created to help track all ventilated patients on the unit, including the compliance with VAP bundle components.

In 2007-08, the Critical Care program implemented many of the VAP bundle components, including head of bed elevation, sedation vacation, orogastric instead of nasogastric tubes, peptic ulcer disease prophylaxis, and deep venous thrombosis prophylaxis. As a result, the VAP rate dropped 54% to 5.8/1000 vent days.

In February 2008, the complete bundle, including the addition of the CASS tube (Containous aspiration of subglottic secretions), mouth-care with chlorhexidine and tooth-brushing twice daily, was implemented. By July 2008, the VAP rate dropped to 4.76/1000 vent days despite a 60% increase in vent days over six months.

By February 2009, the VAP rate dropped to 4.47/1000 vent days. Analysis of VAP data revealed that 20% of the trached patients developed VAP, versus only 0.66% for those conventionally intubated. This information resulted in the implementation of a CASS-style trach.

The current VAP rate is 0.78/1000 vent days. In two years, the VAP rate dropped from 12.6 to 0.78 despite a 100% increase in ventilation days within the same time frame. There have not been any further VAP cases in trached patients since February 2009 (0/9).

The sustainability phase began three months after the target goal was attained. The original goal of reducing VAP 50% from the baseline was achieved and a new target goal of a further reduction of 50% was set.

WINDSOR REGIONAL HOSPITAL
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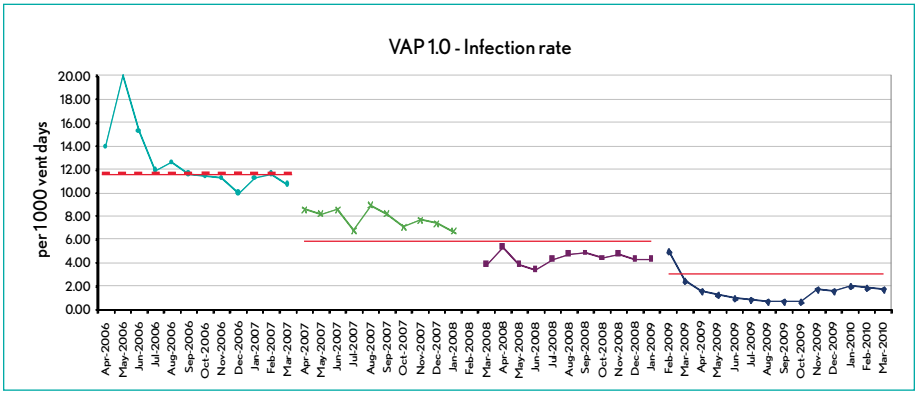
Primary care ICU nurses continue to enter data daily on their intubated patients and VAP audits are completed daily by the clinical leads. For any suspected case of VAP, a detailed chart audit is performed and results are shared and confirmed with Infection Control and the ICU Physicians and ICU Nurse Practitioner.



The keys to making this initiative a success include a simple, user-friendly electronic data-entry system to gather information; a follow-up process to ensure consistency, accuracy and compliance; communication of successes and failures among team members; a strong sense of accountability; and physician support.

The next step is to start the applicable VAP bundle components in the Chronic Vent Program of the Complex Continuing Care Unit. The successful "Above the Cuff" Aspiration Trach trial has supported the use of this device in all of the long-term chronically vented patients, and has greatly improved patients' quality of life.

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NORMOTHERMIA IN THE SURGICAL SYSTEM AT MARKHAM STOUFFVILLE HOSPITAL

The objective of the Normothermia initiative is to implement a protocol to reduce the frequency of complications from surgical-site infections. Decisions to support a change in practice derived from the benchmarking data collected from the Central Local Health Integration Network and an extensive literature review.

Normothermia is a fundamental need of life and pivotal to homeostasis. Patients come to surgery hungry, thirsty and experiencing a high level of stress, and are then asked to don a light patient gown and wait for their procedure. These interruptions to normal basic human functions may cause a decrease in normal body temperature.

The initiative involves many individuals throughout the organization including volunteers, nurses, physicians, managers, senior leaders, vendors and surgical patients.

An initial audit showed that the percentage of open abdominal surgical patients with normothermia (core temperatue between 36-38 degrees Celsius) ranged from 25% and 40%, indicating that immediate improvements were necessary. The strategy for improvement was driven by the hospital's strategic priority to focus on high-quality care and safety.

Several organizational initiatives helped to improve normothermia results:

- The ambient temperature of the main waiting areas was warmed to 23 degrees Celsius.
- Individual thermostats were installed in each operating room to ensure they were warmed to maximum allowable temperatures. Pre-existing tympanic thermometers were calibrated for accuracy and additional education was provided to staff to ensure these factors were not affecting the data quality.
- Volunteers were introduced in the peri-operative setting to provide warm blankets to patients waiting for surgery.
- Financial investment was made to purchase newer technology temporal thermometers for key areas. This investment helped to ensure standardization of measurement tools.

- Patient temperature was measured at various points in the process to help identify when patient cooling occurred.
- Thorough investigation of patient warming devices led to the purchase of four additional warming devices by the manufacturer Hot Dog.
- Education for staff and physicians generated a shift of focus to normothermia.

The normothermia outcomes fluctuated during the implementation phase from 25% to 80%. In November 2009, once process improvements and new equipment were fully implemented, normothermia outcomes improved immediately. By December 2009, a 21% improvement was documented with 89% of patients meeting the normothermia range. In April 2010, the target of 100% was achieved.

The reaction of patients receiving a warm blanket and feeling a heated operating room table demonstrates the impact feeling warm has on peri-operative patients. Patients report feeling a sense of comfort from the warm blanket in the operating room and this is often what is remembered the most.

Markham Stouffville Hospital Corporation's mission is to make each patient's experience a great one, which provided a basis for recognizing the importance of this initiative on a corporate level. The hospital recognized that financial investment was necessary to ensure high-quality care to assist in preventing potentially costly post-operative infections and or complications.

The next steps include the purchase of another warming device and several additional blankets and sizes to support all surgical procedures. Within the next three months, this initiative will expand to include all surgical patients, including caesarean-section patients.

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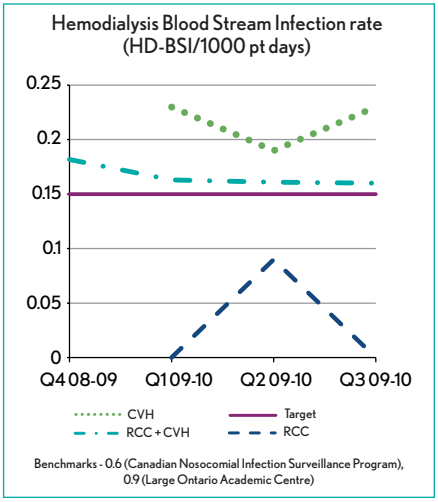
MINIMIZING BLOOD STREAM INFECTIONS IN HEMODIALYSIS PATIENTS

A cluster of blood stream infections (BSI) in hemodialysis (HD) patients was noted at the Credit Valley Hospital (CVH). Further analysis indicated that a significant proportion of BSI occurred in patients with button-hole fistulas. Best practices for accessing these fistulas were reviewed in the literature, and dialysis programs throughout Ontario were surveyed regarding their standard practices.

In January 2009, routine monitoring and reporting of Hemodialysis Blood Stream Infections (HD-BSI) was initiated. This work was successfully achieved through the collaboration of the Renal Program with the Departments of Infection, Prevention and Control and Quality, Performance and Risk.



In February 2009, a new button-hole access procedure was developed and implemented. The insertion of new button-hole fistulas was limited to patients with problematic cannulations.

The overall rate of HD-BSI during the first quarter of monitoring (Jan. to Mar. 2009) was 0.18 per 1,000 patient days. The rate, when measured by type of access, was 0.28 for permanent catheters, 0.11 for fistulas overall, and 0.33 for button-hole fistulas.

Following implementation of the new procedure in February 2009, the overall HD-BSI rate dropped to 0.16 and has remained at this rate since then and there have been no further HD-BSIs in the button-hole fistula patient population. The rate of 0.16 is much lower than the rate of 0.6 reported in the Canadian Nosocomial Infection Surveillance Program.

The new procedure for accessing button-hole fistulas included adding an additional pre-treatment cleansing of the fistula with ethanol by the patient as well as changing from poviodine to chlorhexidine/alcohol for the majority of patients. Initially, a topical antibiotic (Polysporin Triple) was used on the fistula post-treatment but this practice was discontinued when a large number of patients developed skin reactions. Staff were educated on the new procedure with a focus on consistency of practice and reinforcing the change in procedures. In addition, patients were taught to wash sites pre-treatment and to assess their fistulas for early signs of infection.

Since the new procedure was implemented in February 2009, not only has there been a reduction in infections, but patients have noticed and given positive feedback on the improved consistency of needling of fistulas.

The HD-BSI report is distributed to all Renal Program staff. In addition, it is sent to physicians in Diagnostic Imaging and Vascular Surgery who insert or create accesses for hemodialysis patients. The report has been well received and has evolved to include information on rates of vascular access.

During this first year of tracking overall HD-BSI, the most common causative organisms have changed from gram positives to gram negatives. The gram negative bacteremias are primarily associated with secondary bloodstream infections – i.e. not related to contamination/infection of the central lines/fistulas used. In the fall of 2009, there had been plans to use mupirocin as an intervention to reduce gram positive infections but due to the decline in the relative rates of gram positive bacteremia, this project has been put on hold. Continual monitoring and reporting of this data is important in reducing infections in the hemodialysis patient population.

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REDUCING SURGICAL SITE INFECTION RATES BY MONITORING ANTIBIOTIC ADMINISTRATION

The Niagara Health System (NHS) began reporting the timing of antibiotic administration for surgical patients as part of the Safer Health Care Now initiative and it was noted that great variation in practice existed across the NHS sites. Public reporting of this indicator was one of the accountability measures the surgical program took very seriously and a process review of how to improve this practice was initiated.

The first step was the development of a policy on the use of razors and shaving for peri-operative patients and the introduction of the antibiotic timing as part of the patient safety checklist. Then a workflow analysis was carried out on the antibiotic timing and benchmark data was provided to all program members, managers, administrators and physicians. Each site had to realign their processes and within a three-month period a formal policy and documentation strategy was put into place to maintain consistency and to continue to sustain best practice on a go-forward basis.

Antibiotic Prophylaxis Process Improvement

Preoperative antibiotics were administered by the Day Surgery staff one hour prior to the scheduled operating room (OR) time. When there were unforeseen delays in 'cut time', the one-hour window for the antibiotic administration was often surpassed by a few minutes and, from January to March 2009 at one of the NHS sites, only 11.4% of the patients were receiving the antibiotic within the proper timeframe.

In April 2009, the OR staff and the Anaesthesia department collaborated with Day Surgery staff and changed the process for the most frequently used antibiotic by infusing the pre-docked medication in the OR "Holding" area or in the OR suite itself. This process change happened at all of the sites. As a result, data for Prophylactic Antibiotic timing has improved across the NHS, and surgical site infection rates for total joint surgery have remained at "0" % for the first six months of this fiscal year.

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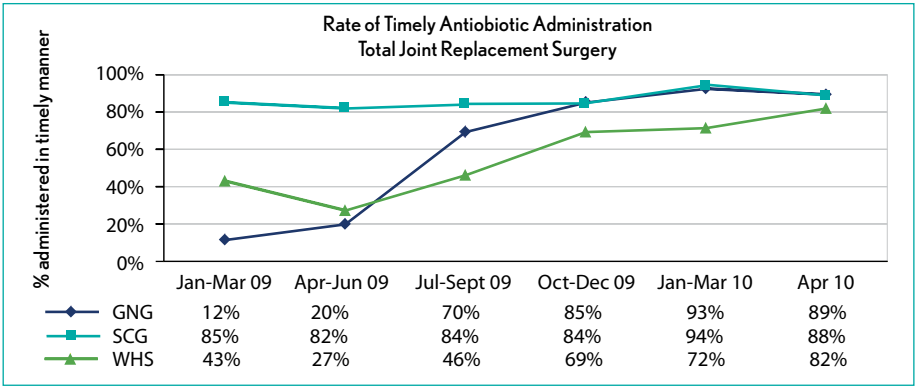
SYSTÈME DE SANTÉ DE NIAGARA
TOGETHER IN EXCELLENCE – LEADERS IN HEALTHCARE



To monitor compliance for this indicator, the NHS staff documents the timing of the antibiotic administration in the OR Manager operative electronic case record and system reports generated are reviewed for accuracy of data entry and compliance. A policy for Antibiotic Prophylaxis for Surgical Procedures was drafted in February 2010 to provide overall direction for optimal use of prophylactic antibiotics in the prevention of surgical site infections. The policy was enhanced by specific recommendations made by the Safer Health Care Now initiative, ensuring the use of current best practices that address antibiotic administration and discontinuation. Frontline staff are provided with monthly graphical trends on how each site is performing. The staff has commented that this feedback gives them incentive to continue to do better with respect to the timing of the antibiotic and to reduce surgical site infections for their patients. They are proud of their accomplishments and continue to strive for excellence to maintain and enhance patient safety.

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Director Finance and Decision Support Services

MED.REC. – OVERCOMING THE CHALLENGES OF COMPLIANCE

SickKids®

The implementation and spread of medication reconciliation (Med.Rec.) on admission, targets the serious problem of drug-related adverse events in hospitals. Multiple factors contribute to medication errors such as the lack of formalized history-taking, inadequate follow-through of incomplete medication histories and no process to detect errors made in ordering home medications upon admission.

A standardized medication history documentation tool and reconciliation process was developed to assist physicians, nurses and pharmacists to reduce medication errors and increase patient safety. The Model for Improvement was used to redesign the Med.Rec. tool with real-time audit feedback and role clarification. Efficacy was measured using discrepancy rates in a random sample of 20 charts/month, which revealed a reduction in discrepancies when Med.Rec. was performed (mean 0.1 discrepancies per patient), but consistent completion of the process emerged as the obstacle with constant turnover of physicians. Thus, focus shifted to measuring compliance rates.

Compliance data for physician completion rates, nurse completion rates and overall reconciliation completed were measured by completing manual chart audits, and ranged from 20%-65% with small improvements over time. In May 2008, with the initiation of Med.Rec. in all inpatient units, process changes resulted with compliance increasing to over 70% of all admitted inpatients. Currently, admission Med.Rec. compliance has increased to over 80% of all admitted patients.

There have been many lessons learned including the importance of senior leadership involvement, having a project manager, and role clarity for the Med.Rec. process.

Contact:

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SURGICAL SCORECARD TOOL IMPROVES SURGICAL QUALITY OF CARE

University Health Network
Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital

The surgical scorecard is a critical feature of UHN's surgical quality improvement program, and now includes monthly reporting of peri-operative efficiency data, patient quality-of-care data and financial parameters. The data is presented using colour-coding and is easy to interpret at a glance; medical directors and nurse managers can discern significant departures from targeted outcomes, and act to correct deficiencies. These corrections are discussed at business unit meetings, and if appropriate, are brought to the overseeing program management committee.

In the last five years, improvements resulting from regular data gathering and scorecard use include:

- Adjustment of operating room (OR) allocation to meet targets of volume-funded cases, and therefore, financial imperatives
- Revision of OR time to recognize utilization disparities amongst divisions
- Development of strategies to decrease OR cancellations
- Improvement of booking accuracy, OR starts and finishes
- Monitoring adherence to the surgical safety checklist
- Adjustment of the OR day to accommodate more complex cases
- Improvement of percentage of '1A' cases started within two hours of booking
- Improvement in instrument cart completeness
- Increased staff satisfaction in employee opinion surveys
- Improvement in sick time and overtime parameters

Before its inception, services learned of their specific results from the OR management team. Now, they can measure their performance, compare results to other services, and align to organizational goals. The surgical scorecard was reorganized to ensure that key Surgical Efficiency Targets Program (SETP) indicators are a focus of the teams, and results are posted monthly near the OR.

Contacts:

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Judy Costello
Director, Surgical Services

TRANSLATING THE HAY BENCHMARKING REPORT INTO ACTION

Since 2000, the Canadian Institute for Health Information (CIHI)/Hay Benchmarking Report has provided Hamilton Health Sciences (HHS) with pan-Canadian, annual benchmarking data across over 50 Quality and Patient Safety Indicators. Due to the number of indicators and presentation format, however, leaders struggled in translating the data into improvements.

To prioritize indicators and enable action, the HHS Quality, Patient Safety, and Clinical Resource Management (QPSCRM) program applied a statistical analysis, interpretation, and presentation methodology to enable leaders to prioritize indicators. A standardized, two-part methodology was applied to identify opportunities for improvement, and indicators failing peer group comparisons and/or HHS site-specific year-over-year comparisons were flagged.

QPSCRM Specialists first met with individual clinical program directors and respective decision support information controllers to validate the analyses and identify any other data and analyses required to complete interpretation. They met broader leadership of each clinical program. For example, following patient case reviews by a multi-disciplinary team including the Chief of Surgery in response to a flagged Post-Admission Pulmonary Embolism or Deep Vein Thrombosis rate indicator, a change in clinical practice and implementation of pre-printed orders was made. Progress on improvement initiatives related to flagged indicators is followed by two executive Quality Committees: the Clinical Resource Utilization Management Steering Committee and the Quality of Care and Patient Safety Committee.

Lessons learned from 2009 presentations will be applied to the 2010 Hay Report on Quality and Patient Safety indicators and will be applied again in the future.

Contacts:

Sharon Pierson
Director, Quality Patient Safety and Clinical Resource Management

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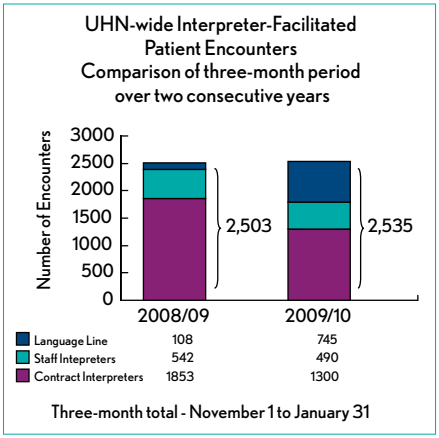
Director, Quality

PATIENT AND FAMILY ENGAGEMENT

LANGUAGE ACCESS IMPROVES OUTCOMES AND HEALTH EQUITY

Adverse events and poor resource utilization can be directly attributed to language barriers. Although University Health Network (UHN) has a large medical interpretation program, face-to-face interpreters are not always suited to meet the urgent nature of demands for service. Although over-the-phone interpretation was offered through a contract with Language Line, the service was rarely used outside Emergency Departments (ED). Thus, from November 2009 to January 2010, the Language Line pilot project was implemented, providing 20 areas of care with free phone interpretation service, education on the importance of professional interpretation for limited English proficient patients and hands-on Language Line training. The objective of the project was to determine whether immediate access to professional interpretation impacts patient safety and quality of care for patients with limited English proficiency.



During the three-month pilot, utilization of the service across UHN increased 590% (from 108 to 745 calls), when compared with the same period the previous year. Based on staff surveys, it was demonstrated that timely access to interpretation services improved quality of care, patient safety, patient-centred care, patient satisfaction, and staff satisfaction.

The patients also liked the service and felt more reassured knowing that they leave the hospital with an understanding of their plan of care. Wireless and cordless telephonic devices were the critical success factors for uptake of phone interpretation, and staff have described patient responses, such as:

University Health Network
Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital

- "One patient and his wife were positively elated that they could communicate in their own language."
- "It was very clear once we engaged in a conversation with the translator that they went from being very quiet and compliant to actively seeking information and assuring that they understood what was going on."

For example, a 42-year-old hyper acute stroke patient who spoke only Hungarian was admitted through the ED and presented with severe deficits of language impairment and complete right body paralysis. With the help of a phone interpreter, the patient received Thrombolytics, a clot buster drug, and the team obtained her consent to perform an angiogram and enrol the patient in an acute stroke trial. They were able to remove the clot and reperfuse the brain by opening the artery. After the procedure, the patient started moving all four extremities.

Because phone interpretation is more cost-effective than face-to-face interpreters (billing only for minutes used), during the three-month pilot, overall costs for interpretation services were reduced $25,270, or 25%, when compared with the same period the previous year. The total number of interpreted encounters increased slightly in the pilot period, but the use of contract interpreters decreased significantly.

Language Line is currently being implemented throughout the organization, and UHN is building an in-house phone interpretation center to support the most frequently requested languages.

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Elizabeth Abraham
Manager, Interpretation and Translation Services

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Medical Interpreter (Italian) and Clinical Educator

STOP SMOKING FOR SAFER SURGERY

Stop Smoking for Safer Surgery (SSFSS), which started in November 2009, is a collaborative, interprofessional (MD, RN, RT, Pharmacy) initiative trying to encourage patients to stop smoking prior to surgery to improve outcomes, and also to support them during the peri-operative period since Mount Sinai Hospital (MSH) is a smoke-free facility.

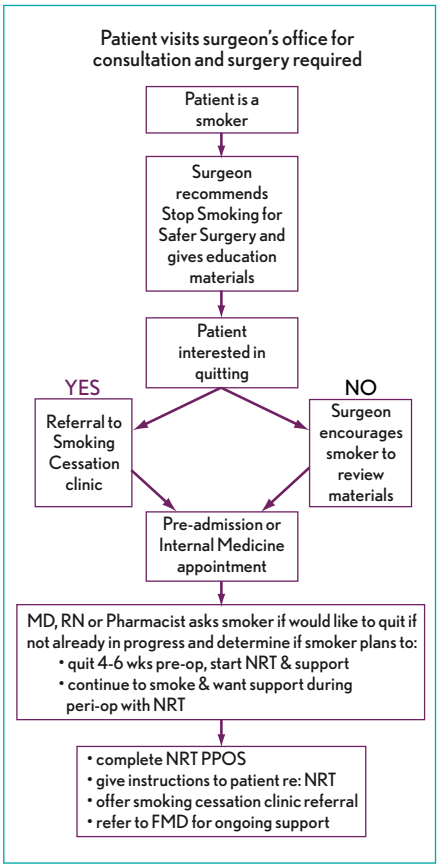
Studies reveal that anesthesia in non-smokers is safer and more predictable due to better functioning of heart, blood vessels, lungs and nervous system, and there are higher rates of complications in smokers such as heart attacks while under anesthesia.

MSH developed a process and created an algorithm to help direct a plan of care for smokers as they prepare for surgery. It has been circulated to all the surgeons via email along with some more face-to-face follow-up.

Patients who smoke are identified either in the surgeon's office or the pre-admission unit. The algorithm suggests recommending SSFSS and a Smoking Cessation clinic referral. In the Pre-admission unit, nursing staff were educated on the 5 A's (Ask if they smoke; Advise them it is better to quit; Assess if ready to quit; Assist with pharmacotherapy and counselling; and Arrange follow-up) so they can try to engage patients. If the patient is interested in support, the smoking cessation educator is paged and sees patients right in the pre-admission unit. A pre-printed order set for nicotine replacement therapy (NRT) has been developed and approved by the Medical Advisory Council to support patients while in hospital, but is also used as a guideline to initiate NRT at home prior to surgery. The NRT order set is being built into the hospital's E-med (online order entry) application. Patient education materials were provided by the Ontario Medical Association, which includes posters and patient-friendly pamphlets.

The hospital is tracking referrals to the Smoking Cessation Clinic, and hopes to track NRT use in-hospital as an outcome through the automated system.

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex



The hospital also plans to conduct post-operative phone calls to assess patient satisfaction with the program and success rates. Currently, the hospital is seeing a positive correlation between surgeons suggesting smoking cessation with patient motivation to quit.

At first, staff in the pre-admission unit were a bit apprehensive with the initiative, but once they learned the 5 A's, were able to access patient education materials and bring in the Smoking Cessation Educator, they reported being more comfortable with approaching patients.

This began as a project under the Surgery Centre of Excellence, but has since expanded and a pre-printed order set has been designed for all patient programs (medicine, psychiatry and women's health).

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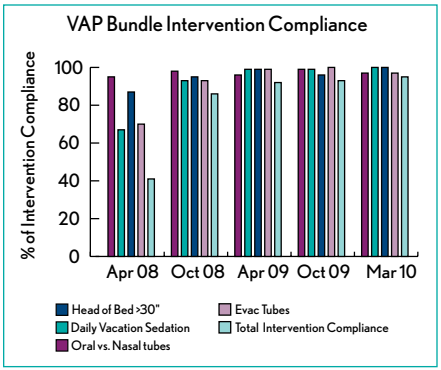
Smoking Cessation Educator

ZAP VAP: PREVENTION OF VENTILATOR ASSOCIATED PNEUMONIA (VAP)

The VAP Campaign kicked off in February 2008 at the Queensway Carleton Hospital. A VAP team was formed, with an Infection Control Nurse and Senior Respiratory Therapist as co-leads, to address VAP issues and encourage frontline representation and input.

The goal was to decrease the VAP rate by 50% within six months, and to achieve 95% bundle compliance within 12 months. This led to the introduction of the EVAC tube in the ICU and has been implemented hospital-wide, in the operating room, as well on the Crash Carts and Outreach Cart for RACE team.

Information sheets were developed and distributed to patients' families in the ICU, which included information about mechanical ventilation, and the VAP and Central-Line Infection prevention bundles, based on Safer Healthcare Now initiatives being implemented. Additionally, posters were hung in the ICU providing a monthly update on the hospital's progress in meeting the VAP goal.



The hospital achieved its goal of 95% bundle compliance, and was able to be VAP-free for a period of seven months. Since March 2009, there has been one VAP case and there have been no Central-Line Infections for 105 weeks; the last was in May 2008.

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THE PATIENT NAVIGATOR

The Patient Navigator was created to support the coordination of patient care and discharge planning. It is a bedside tool, essentially a whiteboard, which allows care providers, clients and their families to visually track the progress of their treatment.

A medical patient value stream analysis of the patient's care processes identified the lack of coordination of care as a major source of waste. Two, one-week, 'Rapid Improvement Events' (RIE) were held to solve the problem. During April and June of 2010, an interprofessional team, using LEAN and client-centred care strategies, completed problem analysis, visioning, and creation/testing of possible solutions, updated the tool along with patient and family input.

The Navigator is updated by members of the interprofessional team, patients and families, and helps prepare the patient for the next episode of care, from admission to discharge. The entry of episodes of care requires standard work in the background(e.g., a time schedule of Diagnostic Imaging (DI) procedures enables the entry of a DI procedure at the expected time).

Indicators measuring the Navigator's impact on care include Picker data, monthly discharge times, and awareness of plan of care. Trends of increased patient satisfaction and decreased variance were observed from Q2-09 to Q4-09; discharge times improved to earlier in the day, and patients' awareness of the plan of care improved from 17% to greater than 90%.

Patients have commented that the tool helps them plan their day better and like sharing information on their care with family members. Staff noted that the tool encourages patient-centred care, increases inter-professional care, and creates opportunities to teach patients about their care.

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