

The National Surgical Quality Improvement Program in BC

2.5 YEARS AFTER START-UP



WHAT'S INSIDE?

- 1 How did we get here?
- 2 Surgical Patients are Starting to Have Better Results After Surgery!
- 4 Two BC Hospitals Receive the ACS Meritorious Award
- 6 Urinary Tract Infections make a Difference to Patients!

Local Stories of Improvement

Interior Health – Royal Inland Hospital

Providence Health – St Paul's Hospital

Fraser Health – Surrey Memorial Hospital

Island Health – Victoria General Hospital

Provincial Health Service – BC Children's Hospital

12 The Other Big Opportunity: Surgical Site Infection

Local Stories of Improvement

Fraser Health – Jim Pattison Outpatient

Care & Surgery Centre

Vancouver Coastal Health - Vancouver General Hospital

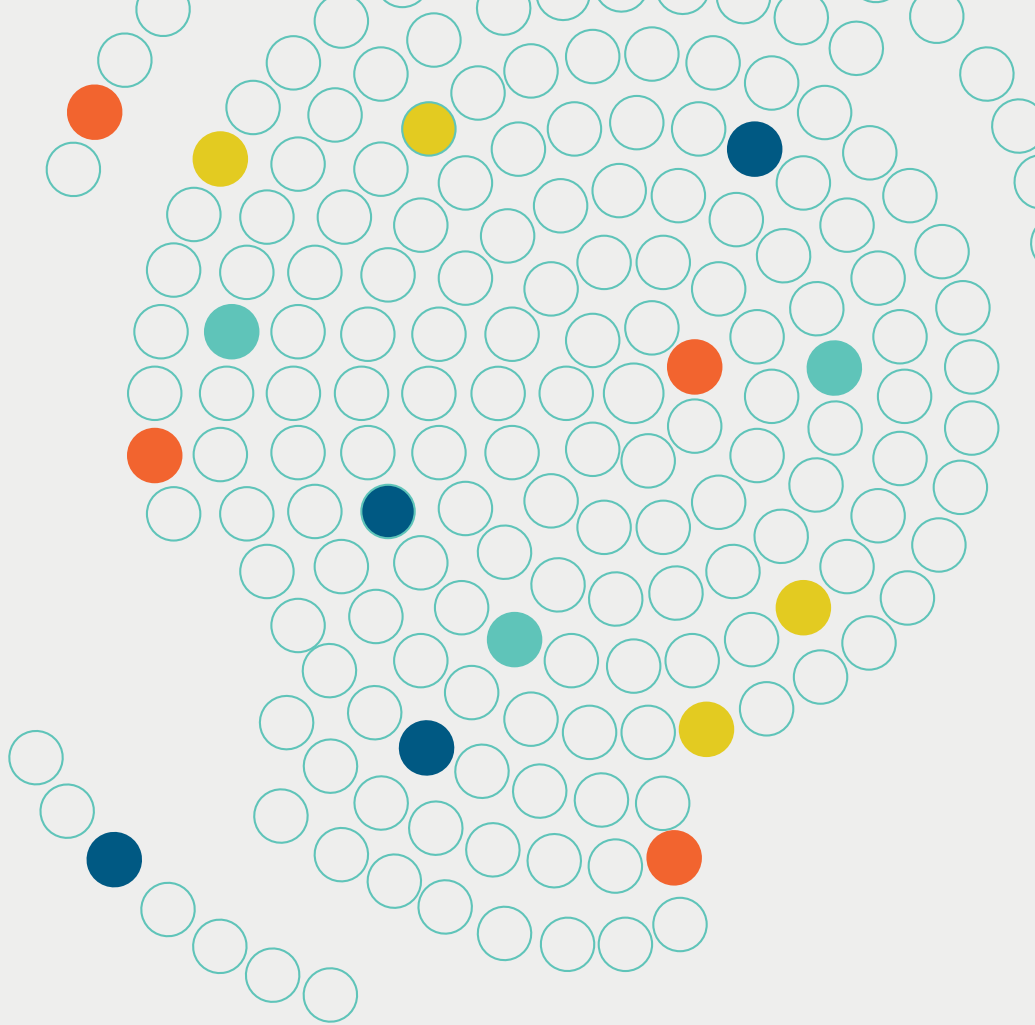
Island Health – Victoria General Hospital

Northern Health – University Hospital of Northern BC

16 What are the Challenges?

17 Improvements are Taking Hold

18 Endnotes



How did we get here?

In 2011, hospitals were offered the opportunity to join the most robust surgical outcome programs in the world. The National Surgical Quality Improvement Program (NSQIP), coordinated by the American College of Surgeons, has almost 480 hospitals enrolled from across Canada and the United States. A cornerstone of the program is to phone patients 30 days after their discharge from hospital to find out if they experienced any signs or symptoms of an infection. Interest was high and twenty four hospitals signed on to the program.

Initial work of participating sites focused on cleaning the clinical data that was going to be extracted from patient charts. The way that data is collated and analysed in NSQIP resulted in taking over a year to receive the first semi-annual risk-adjusted report (SAR) in July 2012. NSQIP sites started by forming front line teams to solve the problems they found in the reports. The primary focus across the sites was to reduce urinary tract infections. We are now seeing the fruits of their labour.

This report collates the findings from the July 2013 risk adjusted reports¹ and local stories across 23 sites.

Surgical patients are starting to have better results after surgery!

The latest reports tell us that patients have better outcomes after surgery than before. The NSQIP reports are very valuable as it contains outcomes for all cases, by surgical subspecialty and for specific targeted procedures.²

Recent changes to NSQIP have provided teams with more timely data to evaluate. The American College of Surgeons have introduced quarterly NSQIP risk-adjusted reports³. While these additional reports still have a 6 month lag time, they allow for more frequent evaluation of risk-adjusted. Each site collects over 1500 cases per year which are evaluated as a whole (all cases) and by the other possible breakdowns (procedure/population specific or subspecialty). **We have examined “all cases” outcomes to allow for comparison across the different hospitals.**

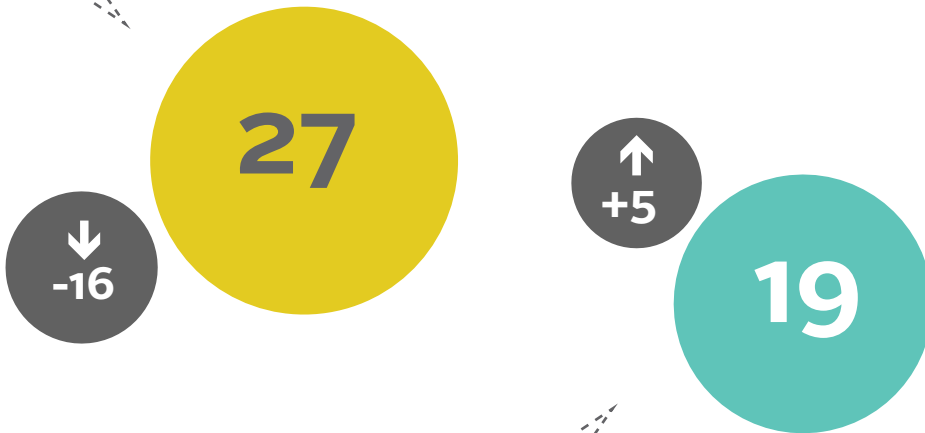
Twenty four sites in BC are enrolled in NSQIP; 23 adult sites and one pediatric site. This report examines 22 adult sites and the one pediatric site who submitted their reports for inclusion.

NSQIP reports contain three designations for outcome reporting: *exemplary; as expected; and needs improvement.* Sites with exemplary outcomes are considered to be in the top 10% of participating hospitals and/or are statistically significant high performers. Sites with as expected outcomes fall between *exemplary* and *needs improvement*. Sites with needs improvement outcomes fall bottom 10% of participating hospitals and/or are statistically significant low performers.

This report examines **22 adult sites**
and **one paediatric site.**

Each site collects over **1500 cases** per year.

27 needs improvement areas across 14 sites
16 Decrease from March 2013



19 exemplary areas across 10 sites
5 Increase from March 2013

Room for Improvement

There are 27 instances across 14 sites where needs improvement was noted. The majority of these were in UTI (n = 10), SSI (n=8) and pneumonia (n = 4). Three other areas were noted: renal failure (n=2), mortality (n=2) and ventilator > 48 hours (n=1).

There has been a notable decrease in the number of areas that are flagged as needs improvement. In March 2013 there were 43 needs improvement outcomes and in July 2013 there were 27 (a reduction of 16). Most of the gains were made in unplanned return to the operating room and surgical site infections.

Exemplary Performance

There were 19 instances across 10 sites where exemplary status was noted. The majority of these areas were in renal failure (n=5), ventilator > 48 hours (n= 4), mortality (n=3) and UTI (n=3). Additional exemplary areas were unplanned intubation, DVT, pneumonia and return to OR.

Since the last semi-annual report (March 2013), there have been 5 more instances of exemplary performance. Hospitals with exemplary status are considered to be in the top 10% of over 400 participating NSQIP hospitals for that outcome.

Two BC Hospitals Receive the ACS Meritorious Award

2 hospitals in BC awarded

Lions Gate Hospital

Victoria General Hospital

of **374** participating hospitals in North America

In September 2013, two British Columbian hospitals were awarded the ACS Meritorious Award for their outstanding results in surgical patient care. **Lions Gate Hospital** and **Victoria General Hospital** have both been recognized by the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) for having the best outcomes in a group of nine key surgical measures⁴. Only 37 out of 374 participating hospitals in North America received the Meritorious Award.



“The SQAN event earned full marks for welcoming patient involvement, but also for genuine interest in engaging patients in improvement work. Although I characterized many as fearful and hesitant to invite patients onto the project team, everyone welcomed the reassuring encouragement from patient participants to “just do it”.

Collaboration in these sorts of events offers promise as a major game changer. So, enthusiastic congratulations to BCPSQC on the initiative, to the SQAN attendees for their generosity and to my fellow patient partners for leading cultural transformation for truly patient-centred care and practitioner fulfillment. Thank you!”

Carolyn Canfield, patient participant at the October 28/29, 2013 SQAN event

Ramesh Sahjpaul, Lions Gate Hospital’s surgeon champion, is delighted with the success at Lions Gate, which required improvement from numerous team members that care for patients – from physicians and nurses to physiotherapists and respiratory therapists. Surgical teams have improved how patients with complicated issues are prepared for surgery; they also use the surgical checklist to minimize mistakes and encourage communication.

“Efforts to improve patient safety and outcomes are now bearing fruit,” Sahjpaul said. “It reminds people that we’re on the right track and we have hard evidence to show that we’re doing the right thing.”

At Victoria General Hospital, NSQIP team surgeon champion Johann Cunningham gives credit to the frontline surgical team members who work with patients day and night. Nurses led the charge to improve the surgical unit’s behaviours and culture so that process changes would have a chance to be embedded into routines.

“Just as you brush your teeth in the morning, you make sure the patient gets the right thing, in the right place, at the right time. Our patients are better off.”

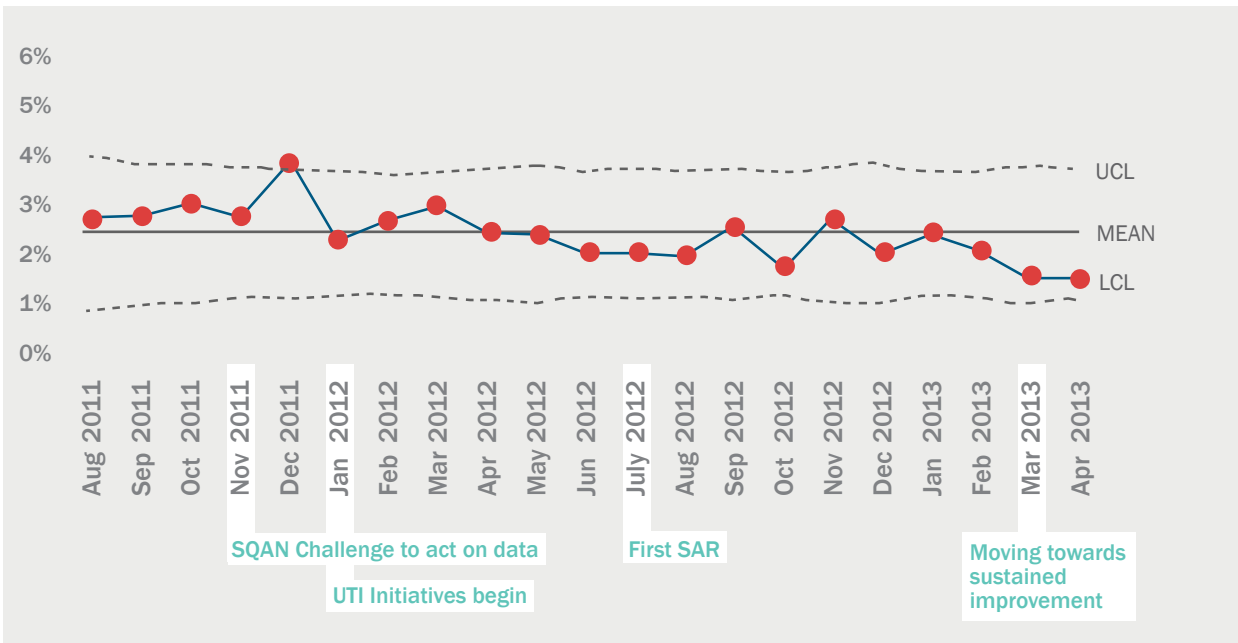
Urinary Tract Infections

Make a Difference to Patients!

In January 2012, there was a provincial NSQIP call to action to reduce urinary tract infections (UTI). Sites identified as *needs improvement* in UTI (either all cases or in a specific subspecialty) were challenged to start improvement work in this area. By March 2012, many sites had started their improvement projects. In the following year (though April 2013), notable gains have been made in UTI rates.

PROVINCIAL UTI RATES

UTI RATES FOR 10 SITES WITH ACTIVE UTI IMPROVEMENT PROJECTS



10 hospitals engaged in UTI improvement project in that time period, each with site specific areas of focus, resources and action teams. An overall improvement trend is now starting to emerge.

The graph above shows non risk adjusted UTI rates for the 10 sites from August 2011 to April 2013. While there are not enough data points to definitively say that we have many a significant

improvement, the graph demonstrates a notable trend of a reduction in UTI in the last 5 months (December 2012-April 2013).

The NSQIP average for urinary tract infections is 1.3%. Ten BC hospitals have dropped their collective UTI rates from 3% before April 2012 to 2.25% in 2013. UTIs in these hospitals has decreased from a combined average of 39 events per month before April 2013 to 31.5 events per month after April 2013.

Local Stories of Improvement

In addition to the great progress that is being seen as a whole throughout the province, individual sites have been doing exceptional work in various sub-specialties to improve UTI rates.

Royal Inland Hospital

St. Paul's Hospital

Surrey Memorial Hospital

Victoria General Hospital

BC Children's Hospital

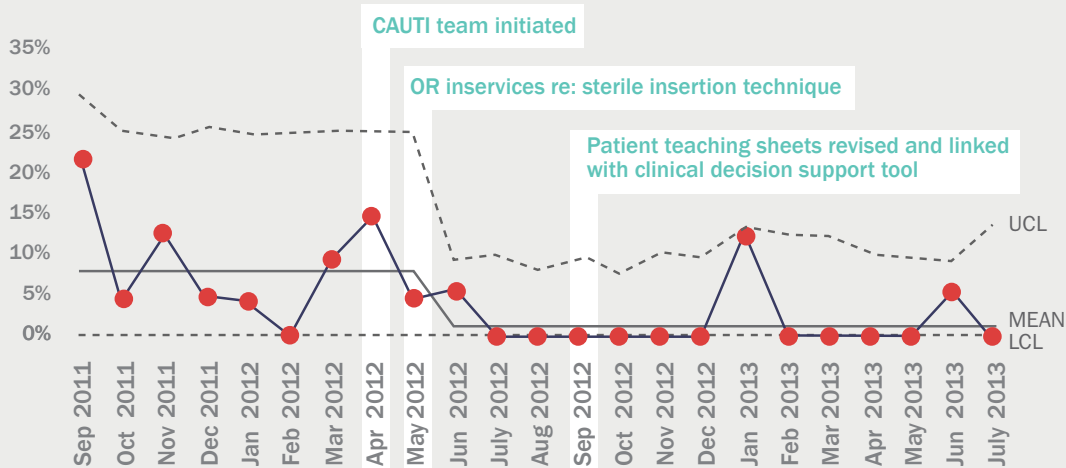
INTERIOR HEALTH – ROYAL INLAND HOSPITAL

Royal Inland Hospital implemented an initiative to reduce catheter associated UTI (CAUTI) project in May of 2012. Since the start of this work they have seen their UTI rates drop from 8% to under 2%. They have also had 11 of 13 months without any CAUTI for their gynecology patients.

Their project included education and training about best practices on both the surgical floors and in

the operating room. They created patient teaching sheets and integrated a clinical decision tool into their practice. They were able to ensure that all patients who had a catheter post-operatively had proper securement before leaving the recovery room. Royal Inland Hospital is continuing to monitor their progress to ensure that best practices remain in place and UTI rates continue to drop.

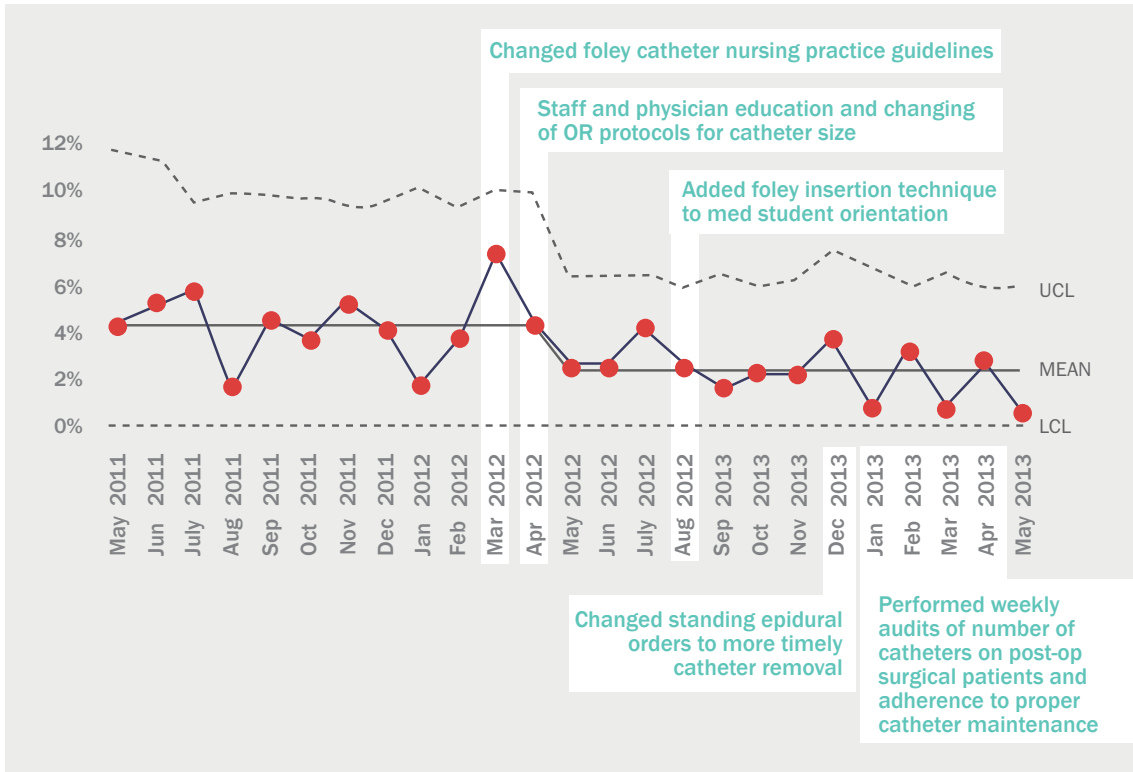
ROYAL INLAND H. GYNECOLOGY UTI RATES



PROVIDENCE HEALTH – ST PAUL’S HOSPITAL

St Paul’s Hospital (SPH) has continued to target UTI in their quality improvement work. Interventions to reduce UTI have been ongoing since April 2012, and have resulted in a **decrease in UTI rates from 4.4% in 2011, to 3.3% in 2012 and 1.5% to June 2013.**

Interventions that have contributed to this remarkable change include: staff and physician education; updating foley catheter nursing practice guidelines; using chart label to remind physicians to daily assess need for foley; weekly audits of number of catheters on postop surgical patients; and, adherence to proper catheter maintenance.





“We have never had rigor for analyzing complications before NSQIP. It has given us the framework and the resources to delve into the most basic need in surgery – the need for safety. In no small way, our experience has been galvanizing for the culture in our institution. Beyond the clinical improvements that we have seen there is now a general, up front awareness for us to be striving for something better.”

Jock Reid, Surgeon Champion at St. Paul's Hospital

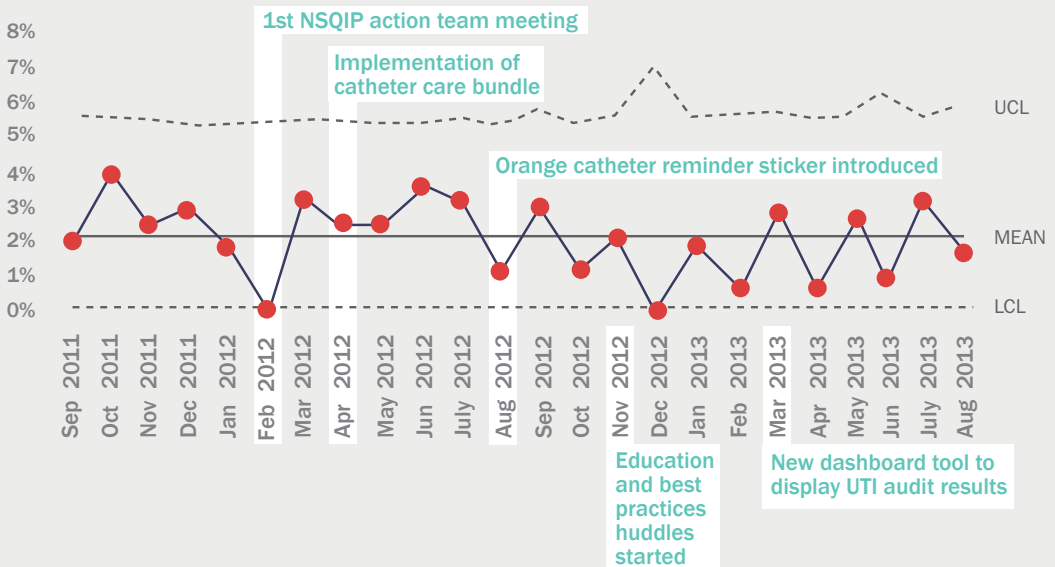
FRASER HEALTH – SURREY MEMORIAL HOSPITAL

Surrey Memorial Hospital has been diligently working on UTI across surgical sites. Their work initially started with reviews of best practices that lead to a catheter care bundle being introduced on surgical units. Cases of UTI are specifically examined and audits of bundle compliance are shared with frontline staff. Catheter care education

was also regularly reinforced, and ideas boards were installed to provide staff with an easy way to share their ideas on preventing UTI.

Surrey Memorial Hospital saw some significant results. **The orthopaedics department had 8 out of 12 months with no UTI and general surgery had 5 out of 12 months with no UTI.**

SURREY MEMORIAL HOSPITAL UTI RATES



ISLAND HEALTH – VICTORIA GENERAL HOSPITAL

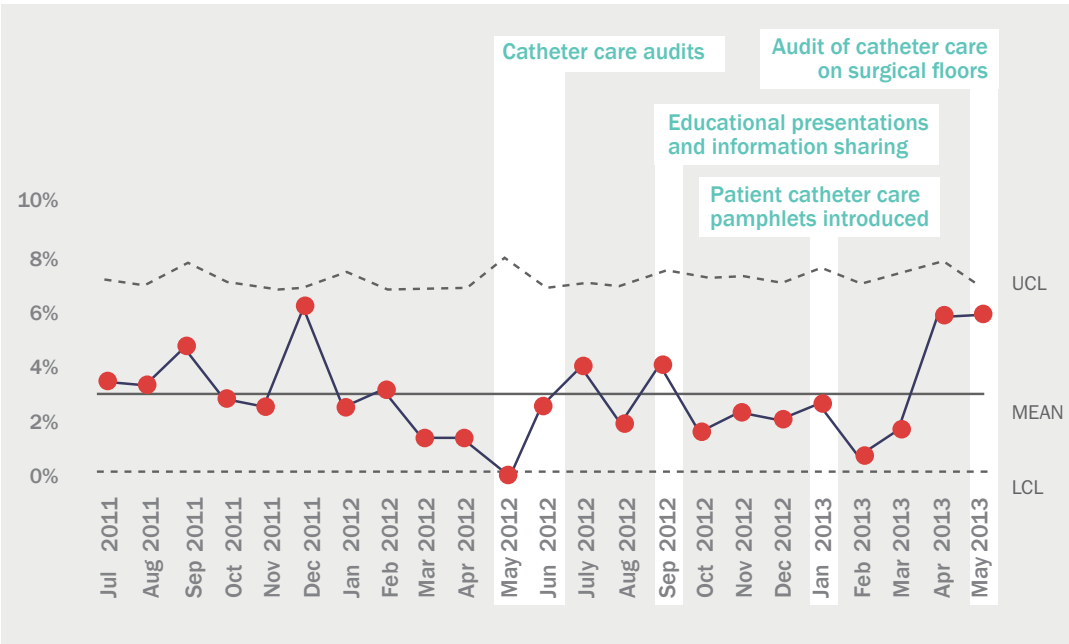
Victoria General Hospital (VGH) focused on lowering UTI rates through improved catheter care and maintenance.

VGH provided an educational power point show which was emailed to porter staff reminding them of how to properly transport patients with catheters. 60% of the entire south island porter staff returned the 20 question certification test with scores of 80% or better.

Other creative interventions included creating a pamphlet enlisting patients to become an advocate

for their own catheter care. These pamphlets have been made available to patients visiting preadmission clinics and the surgical floors in all the surgical sites on South Vancouver Island.

Catheter tracking sheets have been used by nurse leadership to promote the conversation regarding the plan for removal. These tracking sheets collect other data elements which have shown to reduce unnecessary catheter utilization at Royal Jubilee Hospital and VGH by at least 50%.



“ NSQIP has profoundly affected my approach to my work. I now see what I do surgically as only a small part of what helps my patients through their journey. I am now more aware of the processes of care that need to be in place for optimal patient outcomes.

With NSQIP our hospital now has a framework to discuss quality issues and support quality initiatives. NSQIP has enabled connections to form between administration, physicians, nurses, quality and other frontline providers. With the outcomes data from NSQIP we can break out of our silos and work together to improve patient outcomes.”

Tom Wallace, Surgeon Champion at Royal Inland Hospital



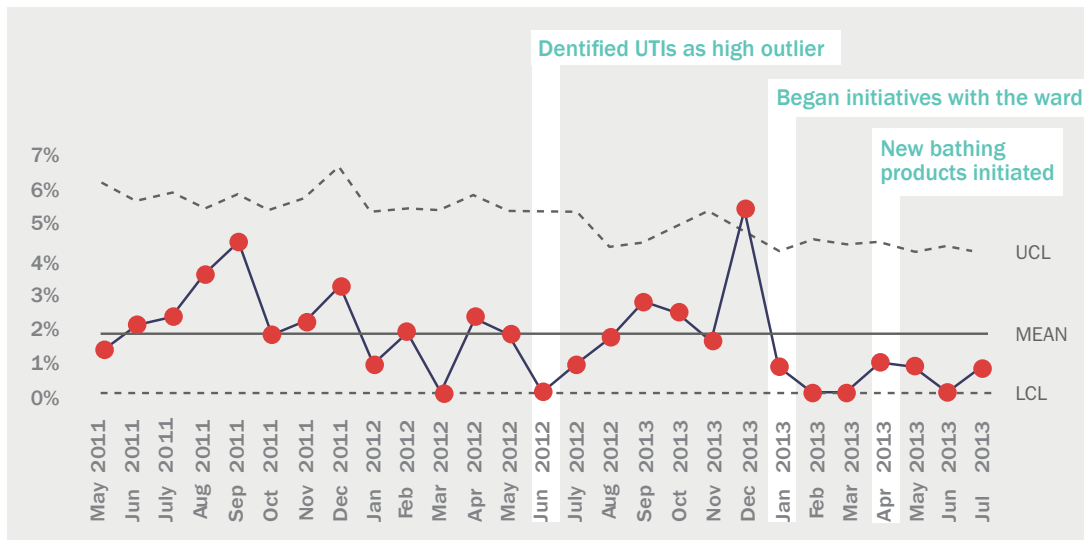
PROVINCIAL HEALTH SERVICES AUTHORITY – BC CHILDREN’S HOSPITAL

BC Children’s Hospital has been working hard over the past 6 months to: test out new bathing products; educate staff about indications for urinary catheterization; minimizing the dwell time and developing guidelines; which has resulted in a dramatic drop in UTI. **They recently reached**

their goal of reducing UTI by at least 60%.

They have also seen a complete absence of gastrointestinal outbreaks on their test unit. With staff, patients and families all happy with the change, they are currently in the midst of using these products in other inpatient units.

BC CHILDREN’S HOSPITAL UTI RATES



The Other Big Opportunity: Surgical Site Infection


Surgical site infection (SSI) is the second most frequently flagged area that needs improvement across NSQIP sites in BC. Many sites are now starting to improve this complex surgical outcome. Surgical site infections are multi-factoral and are difficult to reduce. It takes a much longer time to reduce SSI compared to the less complex problem of urinary tract infections.



Local Stories of Improvement

 *Fraser Health – Jim Pattison Outpatient Care & Surgery Centre*

 *Vancouver Coastal Health – Vancouver General Hospital*

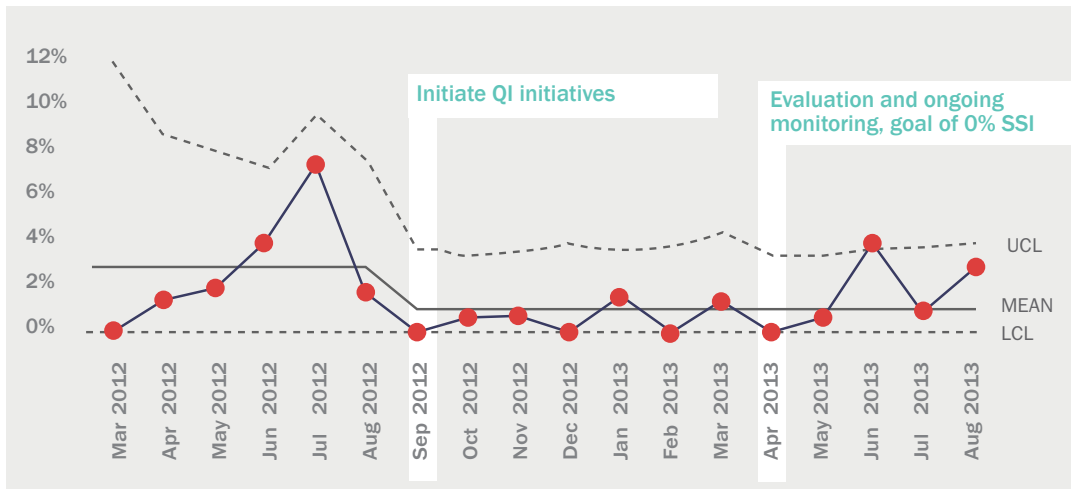
 *Northern Health – University Hospital of Northern BC*

FRASER HEALTH – JIM PATTISON OUTPATIENT CARE & SURGERY CENTRE

Jim Pattison Outpatient Care & Surgery Centre (JPOCSC) aimed to reduce their SSI rates in many different areas. They focused on implementing pre-operative chlorhexidine washes and appropriate timing of the prophylactic antibiotic. Additionally they focused on better pre-operative patient skin preparation and proper dress code in the operating room.

JPOCSC started their initiative with a mean SSI rate of 3.3% compared to the NSQIP benchmark of 1.0%. They aim to reduce SSIs to 0% and have engaged staff to take up the challenge. **They have had 9 months of notably reduced SSI rates (with 5 of those months with no case of a SSI).** They are currently addressing a slight increase in SSI rates over the last few months through ongoing education and re-evaluation of SSI reduction efforts.

JIM PATTISON OUTPATIENT SSI RATES



VANCOUVER COASTAL HEALTH – VANCOUVER GENERAL HOSPITAL

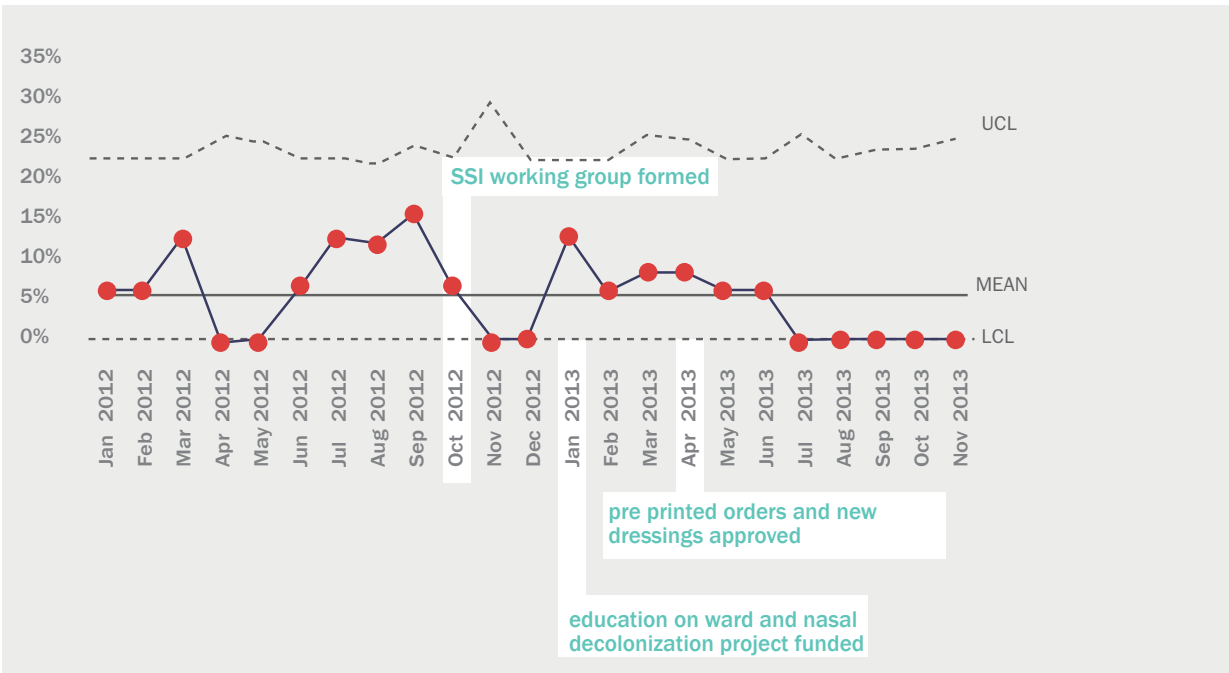
Vancouver General Hospital set a goal to reduce the cardiac SSI rate from 6% to 2% by Jan 30, 2014. They have initiated a program called CLEAN.

CLEAN aims to focus on: Clean hands, nasal decolonization and pre-op Chlorhexidine wipes; leaving dressing in place for 72 hours; engaging staff on best SSI practices; appropriate Antibiotic timing and dosing; and improving Normothermia, Nutritious meals, No smoking, and Normal blood glucose range .

Since changing the type of dressing and leaving it on for 72 hours, the infection control nurse, who

tracks 100% of the cardiac inpatient population, has **not recorded a sternum infection since July 2013.**

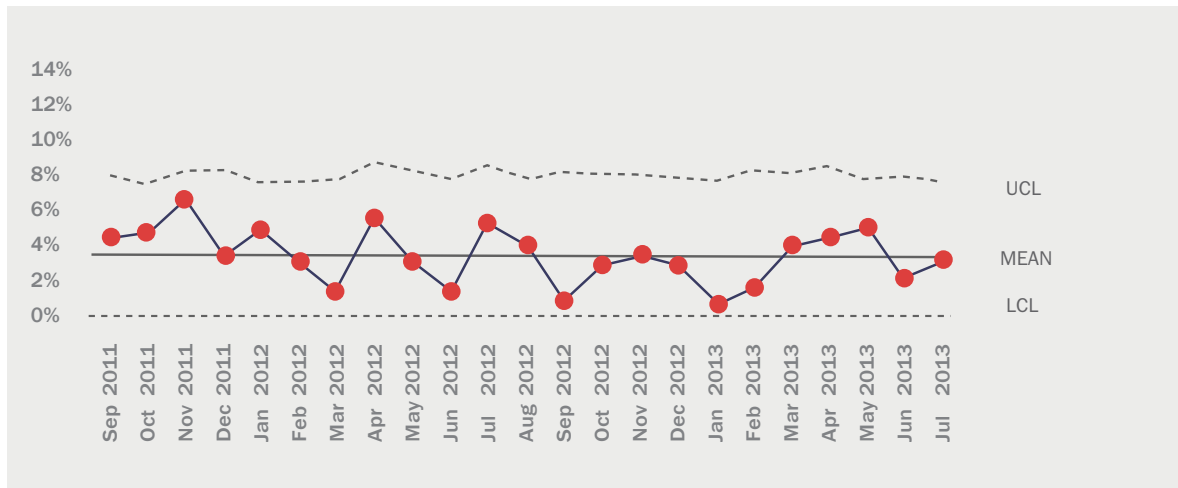
This collaborative team is building on previous quality improvement work. Infection Control has done a lot of work with the clean hands program and the nasal decolonization program. Other initiatives are perioperative glycemic management and standardizing cardiac surgery pre-operative orders to include chlorhexidine wipes.



NORTHERN HEALTH – UNIVERSITY HOSPITAL OF NORTHERN BC

The University Hospital of Northern BC (UHNBC) is diligently working with their surgical colleagues to improve SSI rates. UHNBC is focusing on two key components: normothermia; and standardization of prophylactic antibiotic administration. Additionally, the inpatient surgical units are working through a

dressings change competency process to ensure best practice is being met with each type of dressing change. Next steps include focus on glycemic control baseline data collection to guide effective treatment of affected surgical patients.



“The U&I Preventing UTIs NSQIP Action Team is a fun group. It’s been that way since we started, with a TRIZ that had us laughing while at the same time reinforcing the need to follow best practices to prevent harm to our patients. NSQIP has provided us with a structure for our meetings. The data points us in a specific direction. We built our PDSA cycles into our meetings. These provide us with an immediate snapshot of what is working well and what needs to be improved.”



Dareena Malli, Clinical Nurse Educator, Ortho unit at Surrey Memorial Hospital

What are the Challenges?

We have highlighted the successes and gains being made by surgical sites across BC using NSQIP. As any improvement initiative, there are also challenges facing the surgical teams in this journey. The most common challenges the NSQIP sites highlight are:

Competing Priorities

NSQIP sites often express frustration with competing demands which are not related to quality improvement and this might detract the front-line teams to other priorities.

Acting on the Data

The surgical clinical reviewers, who primarily extract data from patient charts, have limited time to spend with front line teams who are tasked with improving care. Assistance from QI consultants, educators, nurses and other team leaders is key to obtaining strong front-line clinical and staff engagement.

Patience

Reducing surgical site infections is a long-term investment. It takes time to see results.

Fiscal Challenges

Budget restraints are putting pressure on the system to improve care while at a reduced cost. Programs such as NSQIP require long-term investment in order to achieve improvements in care and resulting financial savings.



Improvements are Taking Hold

Significant gains in improvements in surgical care are now occurring across the NSQIP sites. There were five more instances of exemplary status in surgical outcomes and 19 less instances of need for improvement status since March 2013. This is something that we should be proud of. The investment and hard work of NSQIP teams are starting to pay off.

The primary focus for many sites was to reduce urinary tract infections. In the NSQIP benefit analysis conducted in (November 2012), surgeons estimated that a UTI could add 2 days to a length of stay, and an SSI could extend a length of stay by 7 days. Clinicians agree that the biggest bang for our buck is to reduce surgical site infections. The majority of NSQIP sites are now focusing this challenge.

The Surgical Quality Action Network (SQAN) coordinated by the BC Patient Safety & Quality Council will continue to offer opportunities to support NSQIP teams to implement changes.

These opportunities include:

- Under the umbrella of SQAN, the BC Perioperative Improvement Project will launch in 2014 to support change through The Productive Operating Theatre (TPOT) and the Comprehensive Unit-based Safety Program (CUSP);*
- Provide individual site level data analysis support;*
- Regular NSQIP meetings with surgeons, anaesthesiologists, nurse reviewers, administrators, and quality consultants;*
- Site visits to support teamwork and communication training using observations in the operating room and culture data as a baseline;*
- Organize face-to-face opportunities for surgical teams and patients to discuss common challenges and plan a cohesive approach for BC; and*
- Create an annual NSQIP report, next in the fall of 2014, to share progress and challenges.*
- Holding the course with NSQIP is imperative if we want to realize the opportunities to provide better care to our surgical patients.*

Endnotes

1. The data included represents surgeries from January to December 2012.
2. At the time of this SAR, most of the hospitals were enrolled in a multispecialty sampling methodology which includes proportional sampling from all eligible subspecialties: general, vascular, cardiac, thoracic, gynecology, urology, ENT, plastics and neurosurgery. Outcomes reported include mortality, morbidity, cardiac, pneumonia, unplanned intubation, ventilator > 48 hours, Deep Vein Thrombosis and Pulmonary Embolism (DVT/PE), renal failure, Urinary Tract Infections (UTI), Surgical Site Infection (SSI) and Return to Or (ROR). Only three participating hospitals were enrolled in procedure targeted sampling. Due to low case volume, not all outcomes are reported by subspecialty, but sites are able to use the available data to work with specific areas to target improvement. Additionally, some procedure or population specific outcomes are available on the report (eg: colorectal SSI or elderly death & serious morbidity) that allow for greater understanding of those areas. Morbidity is a summative outcome that includes data reported individually in the outcome results and therefore is not used in the counting of exemplary and needs improvement events.
3. Historically, NSQIP has provided each site with semi-annual risk adjusted reports. These reports have a 6 month lag from data collection to report publication (reports with data end date of December are released the following July).
4. All Cases Models: mortality, cardiac, pneumonia, unplanned intubation, ventilator > 48 hours, DVT/PE, renal failure, UTI, SSI.

Contact Information:

BC Patient Safety and Quality Council

nsqip@bcpsqc.ca

604-668-8228