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Surgical quality program improves results and saves money

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No one wants a complication after surgery, yet according to the Canadian Patient Safety Institute, over 220 000 Canadians each year sustain a complication such as a surgical site infection, pneumonia, catheter associated urinary tract infection or a blood clot after a routine elective operation. Complications increase length of stay, prolong recovery, can reduce quality of life, and can even be fatal at times. In addition, complications are costly, costing the Canadian healthcare system hundreds of millions of dollars per year. That is funding not going into your healthcare. How do you make things better? You measure them.

The National Surgical Quality Improvement Program (NSQIP) was introduced by the American College of Surgeons in 2001 and was the first nationally validated, risk-adjusted outcomes-based program designed to measure and improve the quality of surgical care in the United States. Dr. Tim Jackson, surgical lead at Health Quality Ontario and a general surgeon at the University Health Network, introduced this program to Toronto in 2010.

The godfather of NSQIP, Boston surgeon Dr. Ernest Codman, at the turn of the 20th century, pioneered the idea that all hospitals must analyze their results, compare them with other hospitals, and publicly display their successes and failures. This was considered heresy at the time. Have things changed 100 years later?

In April 2015 the department of surgery at Halton Healthcare-Oakville Trafalgar Memorial Hospital joined NSQIP and started collecting our complication rates. We clearly had a problem when, after six months, we identified a surgical site infection rate of 3.4% and a urinary tract infection

rate of 3.2%. This placed us in the bottom 20% of hospitals in the Ontario collaborative. We rapidly implemented a series of quality improvement measures packaged in what's called a bundle. A surgical site infection bundle involved introducing a series of simultaneous changes such as a pre-surgery antiseptic shower, increased antibiotic dosing, double gloving for each operation, a plastic ring to protect the surgical incisions, and pressurized irrigation to clean tissue. We adopted the Johns Hopkins Comprehensive Unit-Based Safety Program model to create our surgical quality initiative team, with a core group that meets every two weeks to review all complications. It takes a multidisciplinary team, and goals, and we use the Plan-Do-Study-Act (PDSA) cycle to test new ideas. We reduced our surgical site infection rate to 1% and our urinary tract infection rate to 1.1%, and are now consistently in the top 20% of hospitals in the Ontario collaborative.

The NSQIP program is all about sharing collective learnings. In the *Canadian Journal of Surgery* this year we published two papers describing our successes reducing surgical site infections and catheter associated urinary tract infections. Using best practices learned from our fellow NSQIP sites and from ongoing literature reviews we continue to refine our surgical techniques to do better. Fewer complications means a faster discharge home and return to quality of life. Is this program cost effective? The Institute of Health Economics in Alberta demonstrated in their September 2017 paper, that their $2.6 million investment in their NSQIP program lead to a net cost savings of $8.8 million for an ROI of 4.3. What do we do in healthcare that demonstrates a return like that? Complications are expensive, quality saves money and reducing complications is the right thing to do. Quality is a moving target, as we are all continuously trying to improve, with an unattainable zenith of zero complications. Patients and the healthcare system demand value- better outcomes at a lower cost. As Marshal Goldsmith said, "What got you here, won't get you there." We need to collectively share our wins in Canadian healthcare, and innovate together, as a rising tide lifts all boats.

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