

Benefits evaluation is an important component of the connecting South West Ontario (cSWO) Program that helps to support and demonstrate the realization of health system benefits through the adoption of electronic health records (EHRs). By pursuing the measurement of organizational value (improvements in the efficiency of care delivery such as time-savings and redirected resources) and clinical value (patients undergo fewer unnecessary tests, patients have improved access to care) ultimately, patients benefit from higher quality, better informed clinical decision-making.

The cSWO Analysis and Research program uses a research-based approach to identify areas of clinical best practice that are affected by the use of EHRs, and works collaboratively with clinicians to understand the value of EHRs. This formative evaluation process informs change management and adoption, and enables clinicians to use EHRs more effectively. This research does not include the use of any personal health information.

The document is one in a series of case studies which describe the clinical value of EHRs in different clinical settings and contexts, particularly with respect to clinical best practices. The work of the cSWO Analysis and Research program is ongoing; depending on the circumstance, these cases occasionally raise questions for further investigation, and clinicians are invited to participate in analysis and research to continue to develop these answers.

## Value statement

The cSWO Regional Clinical Viewer, ClinicalConnect™, has enabled the Brant Community Healthcare System (BCHS) to reduce the number of preoperative (pre-op) tests conducted for low-risk surgery patients, consequently decreasing the use of limited human and financial resources, and improving patient experience.

## Preoperative testing best practices for daytime surgery in Ontario

Historically, pre-op testing prior to low-risk surgery has been performed in order to optimize conditions that may cause perioperative mortality. However, these tests generally do not change perioperative management, and produce several consequences including an increase in patient anxiety, increase in the use of human and financial resources, investigation of false positives, and further unnecessary testing<sup>1</sup>. A retrospective study in Ontario examined the number of pre-op tests performed in 1,546,223 low-risk surgery patients throughout 173 facilities, concluding that pre-op testing in these patients was overperformed<sup>2</sup>. In Ontario, 18-35 per cent of patients undergoing a low-risk surgery have at least one preoperative test<sup>3</sup>. Additionally, Health Quality Ontario states that evidence on pre-op testing for asymptomatic patients undergoing low-risk surgery consistently shows no benefit<sup>4</sup>. It is common for pre-op testing to reveal at least one abnormal test result, which then requires further investigation, and in the majority of cases does not impact the surgeon's decision to operate<sup>5,6</sup>.

These studies emphasize the need to reduce pre-op testing, when possible, for low-risk surgical patients. A country-wide campaign launched in Canada in 2014 encourages conversations between health care providers and patients regarding procedures and testing that may be unnecessary. This Choosing Wisely Campaign uses patient friendly language to promote the message that in medicine, "more is not always better", and to educate patients on when they may or may not need a particular test<sup>6</sup>.

## Using ClinicalConnect to support reduction of unnecessary preoperative testing

As part of the Choosing Wisely Campaign, a working group consisting of BCHS staff from the anesthesiology, labs, nursing and information technology departments was formed in order to revise the current BCHS preoperative testing protocol. This group worked to streamline the pre-op process and to eliminate unnecessary testing by establishing new Routine Pre-operative Test Protocol.

BCHS won the quality improvement award at the 2016 Share Showcase High Performance Consortium competition for

this work. The new protocol now bases the required lab tests on the patient's condition, rather than on the type of surgery, as had previously been the case. It considers lab tests to be valid for up to 3 months and to be acceptable regardless of whether they are performed at the hospital or elsewhere.

After identifying which tests are required under the new protocol, the pre-op registered nurse (RN) accesses ClinicalConnect to review whether these tests have been performed within the timeframe defined in the protocol, and orders only those tests which are still required. The anesthesiologist also reviews ClinicalConnect prior to the day of surgery for planning purposes, and ClinicalConnect is reviewed once more on the day of surgery by the RNs in order to identify any recent change in patient condition.

As a result of implementing the new protocol and checking for recent test results, the day surgery unit at BCHS has seen a significant reduction in the number of pre-op lab tests performed. The day surgery department at BCHS measured the number of tests ordered prior to the new protocol and those ordered post-protocol implementation, comparing like quarters from 2015-16 to 2016/17 in order to account for similar surgery trends.

Immediately following the implementation of the new protocol and use of ClinicalConnect in September 2016, BCHS saw a noticeable reduction in the number of pre-op tests conducted:

- Reduction of 1200 lab tests in the 2nd quarter 2016/17 from the 2nd quarter of 2015/16
- Reduction of 2508 lab tests in the 3rd quarter 2016/17 from the 2nd quarter of 2015/16
- Reduction of 2107 lab tests in the 4th quarter 2016/17 from the 4th quarter of 2015/16

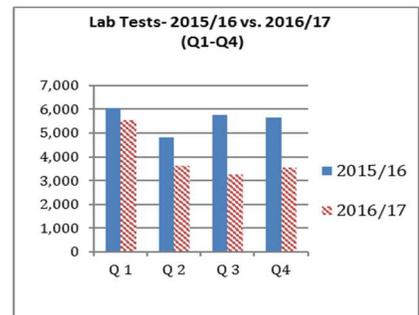


Figure 1- Graph depicting the number of preoperative lab tests performed in the day surgery unit each quarter in 2015/16 vs. 2016/17 at BCHS.

## Testimonial

“Using ClinicalConnect has streamlined patient data collection. Utilizing this data collection process has enabled nursing, physician and pharmacy team members of the Perioperative program to gain quicker access in a more efficient way. By collecting lab results via ClinicalConnect, we have lessened patient risk associated with venipuncture and diagnostic procedures. We are optimizing patient care and surgical readiness by involving our patients in their history taking and care planning utilizing data shared on ClinicalConnect. We have also promoted using resources wisely throughout the organization related to process changes while using ClinicalConnect”.

Jessie Maltby, Perioperative Clinical Resource Nurse, BCHS

### Questions

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