

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 an electronic health record (EHR). 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 Benefits Realization program uses a research-based approach to identify areas of clinical best practice that are affected by the use of the electronic health record (EHR), and works collaboratively with clinicians to understand the value of the EHR. This formative evaluation process informs change management and adoption, and enables clinicians to use the EHR 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 the EHR in different clinical settings and contexts, particularly with respect to clinical best practices. The work of the cSWO Benefits Realization program is ongoing; in some cases, these cases raise questions for further investigation, and clinicians are invited to participate in benefits evaluation to continue to develop these answers.

Value statement

Using the cSWO Regional Clinical Viewer, ClinicalConnect™, the regional secondary stroke prevention clinic is quickly and efficiently viewing relevant tests to enable best practice related to preventing secondary strokes.

Clinical best practice for secondary stroke prevention

Stroke is a major cause of death in hospital and in our communities. Like many chronic diseases, strokes can present with an initial warning sign like a mini-stroke called a Transient Ischemic Attack (TIA). This event offers an opportunity to act quickly, find out the cause and offer counsel to patients in order to prevent more serious events. Several best practices have been updated with respect to preventative stroke care (Heart and Stroke Foundation, 2014), including investigations into possible causes such as atrial fibrillation or carotid stenosis.

Time to treatment is an important factor in determining outcomes with respect to proactive care in these cases. When stroke symptoms are caused by stenosis of the carotid artery, the length of time taken to perform a carotid endarterectomy to remove blockages has been related to the potential to avoid future strokes. Surgeries completed within a two-week period have a much stronger likelihood in preventing a stroke within five years (Rothwell, 2003).

In Ontario, the extent to which carotid endarterectomies are completed within 14 days is variable. A 2009 study of 12 provincial stroke centres revealed that although there were improvements in accessing timely care over the period studied (2003-2006), patients did not always receive care aligned with best practice expectations. The study suggested “greater efforts are needed to minimize delays to diagnosis and surgical treatment for patients with symptomatic carotid stenosis” (Gladstone et al., 2009 p. 2776).

Efforts underway in south west Ontario to achieve these improvements are enabled by ClinicalConnect. Access to the electronic record allows clinicians to view reports from all 67 acute hospital sites in a four-LHIN area in south west Ontario, as well as diagnostic images and reports, laboratory information from the Ontario laboratory information system (OLIS).

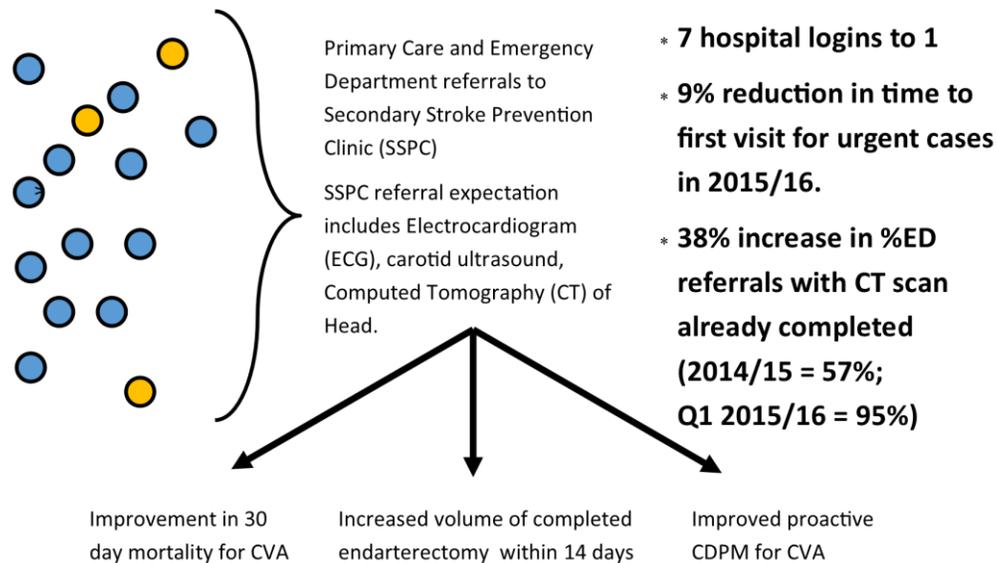
Secondary Stroke Prevention Clinic (SSPC) uses the EHR to improve referrals and outcomes

At Grand River Hospital, the SSPC uses ClinicalConnect to promptly review all referrals and complete the necessary work to ensure efficient and timely access for patients.

The program has established a referral form that can be inserted into all of the electronic medical records of primary care clinicians and emergency departments in the area. When a patient presents at primary care or hospital, clinicians order the recommended tests to facilitate further investigations and refer the patient for follow-up at the stroke clinic. Results that speak to patient benefit include:

- 1) The percentage of patients referred to the Secondary Stroke Prevention Clinic who have already had a CT of the head has increased from 57% in 2014/15 to 95% after Q1 2015/16. (from Emergency Departments only)
- 2) Monthly referrals to the Secondary Stroke Prevention Clinic have increased from 77/month in 2013-14 to 95/month in 2014-15. There has been no increase in the staffing complement during this time, referrals are processed more efficiently and more comprehensively using ClinicalConnect.
- 3) For patients who need additional care such as carotid endarterectomy, ClinicalConnect allows staff to gain access to necessary test results faster in order to inform important decisions regarding vascular surgery”

Figure 1 – Accessing diagnostics to ensure preventative stroke care



Testimonial

“ClinicalConnect has improved the internal workflow of the secondary stroke prevention clinic and has influenced the way that we are pursuing care for patients. ClinicalConnect has allowed the staff in the clinic to process referrals rapidly in order to deliver best practice care.

Amanda Plozzer, Clinical Manager, Secondary Stroke Prevention Clinic, Grand River Hospital

Questions

For questions, comments, or to participate in cSWO Program’s Benefits Realization program, please contact: Ted Alexander, Research Associate, cSWO Program ted.alexander@ehealthce.ca

Sources

Gladstone, D. J., et al. (2009). "Urgency of carotid endarterectomy for secondary stroke prevention: results from the Registry of the Canadian Stroke Network." *Stroke* **40**(8): 2776-2782. DOI: 10.1161/STROKEAHA.109.547497.

Rothwell, P.M., et al. (2003). "Analysis pooled from the randomised controlled trials of endarterectomy for symptomatic carotid stenosis, *Lancet*,361:107-116.

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