

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 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™ for certain patients receiving care in emergency departments can help reduce duplicating tests and wait times for patients requiring admission, and help avoid unnecessary admission by sharing information amongst organizations involved in the circle of care.

Clinical best practice for avoiding adverse events for older patients in Emergency Departments

A cohort study of 982 patients aged 65 and older receiving care in a Canadian Emergency Department (ED) found that after adjustment, the odds of experiencing an adverse event (AE) in-hospital increased by 3% for every additional hour of ED Length of Stay. For patients who experienced an AE, the length of their inpatient visit more than doubled (20.8 vs. 9.8 days) (Ackroyd-Stolarz et al., 2011).

This study communicates the need for improvement initiatives that offer cascading benefit to patients and to acute care organizations. When demand for finite resources like inpatient beds can be reduced in a clinically-appropriate manner, patients who require admission can flow into appropriate care settings in a more expedient way. Quicker flow reduces the chance of adverse events that increase average patient lengths of stay in a manner that further alleviates potential strain on inpatient bed availability. For patients who avoid admission altogether, there are benefits as well, such as lowering the risk of confusion, delirium, and hospital-acquired infection.

EHR usage for Emergency Department care

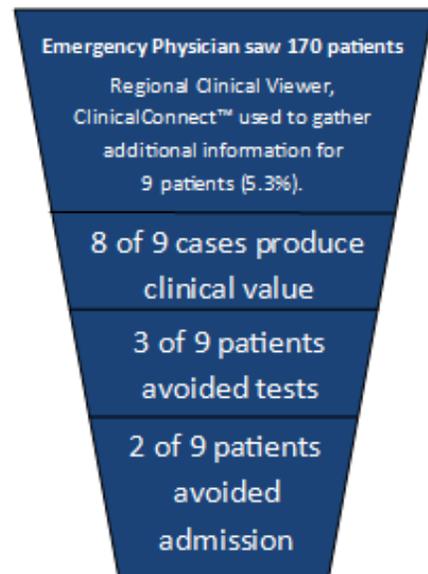
ClinicalConnect provides real-time access to information from 100 per cent of acute care hospitals across south west Ontario, the four south west Ontario Community Care Access Centres, and regional cancer care programs, as well as data from provincial repositories, including Ontario laboratories information system (OLIS) and Southwestern Ontario Diagnostic Imaging Network (SWODIN).

Work to develop clinical workflows that offer improved quality of care for complex patients inside emergency departments is underway across south west Ontario. In one case, an ED physician tracked his use of ClinicalConnect over a nine shift period in May 2015, to document the relationship between checking for clinical information from across the health system, patient's impressions of the care they received, and the extent to which clinical decisions changed as a result of the physician being better informed.

Use of ClinicalConnect when providing Emergency Department care

At Guelph General Hospital, ED Chief Ian Digby measured his ClinicalConnect usage. For the majority of patients seen, Dr. Digby received all the information he required to provide treatment in the ED. Many of the patients had issues that did not require checking for additional information. But for those where he did require additional information, he used ClinicalConnect. Results from this study period that speak more directly to benefits are:

- 1) Between 5-10 per cent of ED cases can benefit from data available on ClinicalConnect.
 - 2) For these patients, using ClinicalConnect is useful because they have had investigations in other facilities and tend to have multiple complex chronic conditions. Examples include: cancer patients, patients who have seen a consultant in another hospital, and trauma patients. Historical treatment information and lab results inform better care.
 - 3) In the review of 170 patients seen by one physician over nine shifts at Guelph General Hospital, ClinicalConnect was accessed in nine instances, and influenced the care of six patients. Three patients had previous lab and diagnostic information, which influenced their care (CBC, electrolytes, ultrasound, x-rays). One blood transfusion was avoided (by comparing the patient's current tests to historical trend), and two admissions were avoided based on data from other hospitals (diagnostics, transcription and lab data).
 - 4) Results from this one case suggest appropriate use of ClinicalConnect in the ED (estimated between 5-10 per cent) leads to better informed decision-making that can reduce tests, treatments and admissions for patients who can be cared for in other settings.
 - 5) Being able to launch ClinicalConnect directly from the hospital's information system would be of significant benefit.
- Note: Since this study, contextual launch is now available.



Testimonial

“ClinicalConnect did improve my clinical understanding of my patients and helped make better decisions. The patients appreciated that I was "looking at their files for their health care provided outside the hospital.”

Dr. Ian Digby, Chief of Emergency Medicine, Guelph General Hospital

Questions

For questions, comments, or to participate in cSWO Program's Benefits Realization program, please contact: Ted Alexander, Manager, Benefits Realization, cSWO Program: ted.alexander@lhsc.on.ca

Sources

Ackroyd-Stolarz, S., Read Guernsey, J., MacKinnon, J.S., & Kovacs, G. (2011). The association between a prolonged stay in the emergency department and adverse events in older patients admitted to hospital: a retrospective cohort study. *BMJ Qual Saf* 2011;20:564e569. doi:10.1136/bmjqs.2009.034926.

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