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Evaluating benefits 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), patients ultimately 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.

This 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

Access to the cSWO Regional Clinical Viewer, ClinicalConnect™, increases the ability to provide comprehensive care at Juravinski Hospital and St. Peter's Hospital, improves diabetes education, and promotes patient and clinician empowerment.

## Consequences of living with diabetes

Diabetes is a chronic disease that occurs when the body either cannot produce sufficient insulin, or it develops resistance to the insulin it produces. Currently there are 11 million Canadians living with diabetes or prediabetes.[1] Type 2 diabetes accounts for 90 per cent of diabetes cases, and is diagnosed by testing Hemoglobin A1c (HbA1c) and random blood glucose levels via a blood test.[1] Individuals with Type 1 and Type 2 diabetes have a higher probability of dying prematurely than people without diabetes at every age group, with mortality rates four to six times higher between the ages of 20-39 and two to three times higher between the ages of 40-74.[2] It is important that individuals properly manage their condition in order to try to avoid complications associated with diabetes, which include cardiovascular disease, vision loss, stroke, erectile dysfunction, peripheral vascular disease, amputations, kidney failure, nerve damage, and oral disease.[3]

Health Quality Ontario's Quality Compass, an evidence-informed tool designed to support health care providers in improving health care performance across Ontario, stresses the importance of early identification of diabetes, developing a diabetes care strategy, tracking and identifying potential care gaps, as well as providing patient supports including Diabetes Education Programs and self-management techniques.[4] The Canadian Journal of Diabetes recommends patient-centered learning, implementing collaborative and interactive diabetes self-management and education interventions, as well as goal setting in order to better empower individuals to achieve optimal diabetes management.[5]

Improving diabetes education amongst patients and clinicians

One approach that has been taken in caring for patients with diabetes is the introduction of the Diabetes Clinical Nurse Specialist (CNS) role. A Diabetes CNS can provide support to diabetic patients by demonstrating advanced diabetes knowledge, developing a collaborative relationship with diabetic patients, documenting analyses, findings, and recommendations, and determining the focus of the consultation with the patient.[6] Lisa Maks is the Diabetes CNS at Juravinski Hospital and St. Peter's Hospital, one of three in this role throughout Hamilton. She has embraced ClinicalConnect in her practice, stating that it helps build her credibility when providing treatment recommendations based on her assessment and empowering patients in their own self-management.

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Lisa's role is to provide clinical expertise to physicians, consult with patients in hospital, provide education to clinicians, patients, and families, and implement quality improvement practices that evaluate current diabetes practice and implement changes to improve care. Figure 1 illustrates the benefits described by Lisa as a result of using ClinicalConnect.
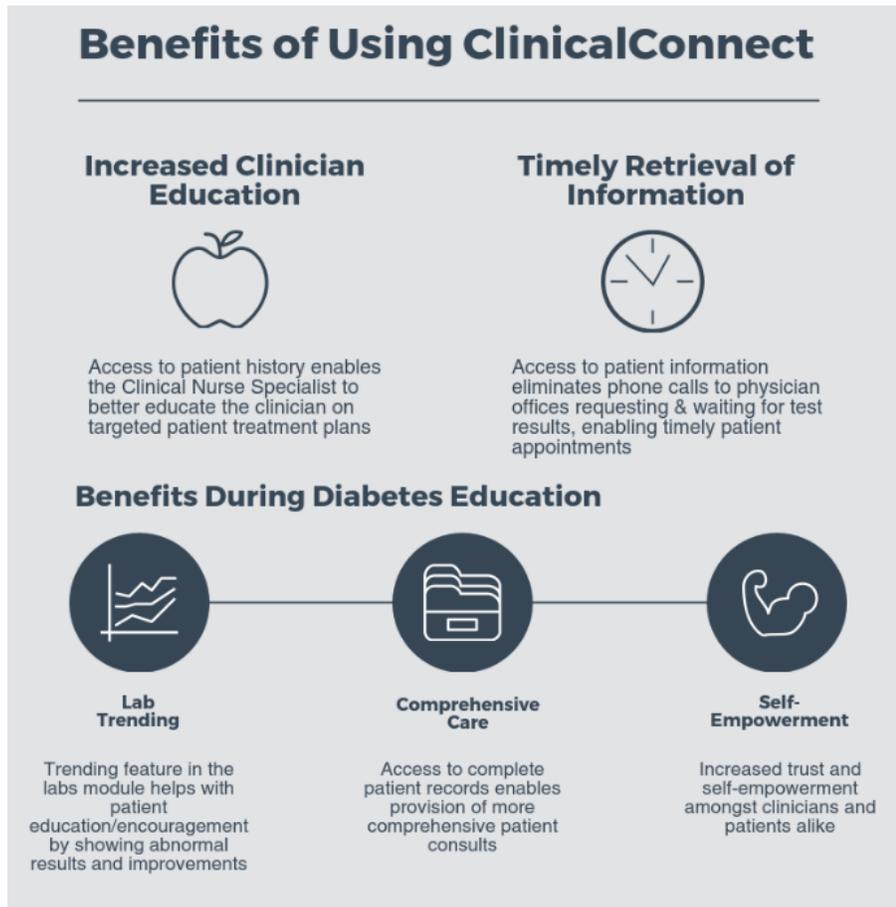
Testimonial

"Prior to ClinicalConnect, I had to rely on the patient remembering their last HbA1c (3 month average of blood glucose). Occasionally, a recent HbA1c might be listed in the Physician admission history. With ClinicalConnect, I have access to lab values, trends and notes from practitioners to better track the patient's pattern of blood glucose results. I can confirm which practitioner the patient is seeing and view notes from external sources that were never available before. Having access to these results and notes helps to reduce the amount of time asking the patient repetitive questions and direct the consult to the problem areas of management. I believe it also builds a better nurse-patient relationship because the patient can see you've taken the time to get to know their history. I use ClinicalConnect daily to prepare for the consult."

Lisa Maks, Diabetes Clinical Nurse Specialist, Juravinski Hospital and St. Peter's Hospital

Figure 1. Infographic of the benefits described by Lisa Maks, Diabetes Clinical Nurse Specialist

Questions
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Sources

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