

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 electronic health records (EHRs) through the cSWO Regional Clinical Viewer, ClinicalConnect™, enables the Lab Transfusion Team at Joseph Brant Hospital (JBH) to contribute to patient safety and minimize time spent locating patients' past transfusion histories required during pre-transfusion investigations.

Importance of pre-transfusion testing in ensuring patient safety

Blood transfusions provide a vital therapeutic modality, but they may also be associated with adverse effects in some recipients which can be serious in terms of outcome.¹ In order to minimize adverse events, pre-transfusion testing is done to ensure compatibility between the blood of the transfusion recipient and the blood product intended for transfusion.² These tests include blood typing of the recipient's red blood cells and screening to detect clinically significant antibodies in the recipient's plasma. Most of these antibodies develop following exposure to foreign red blood cell antigens during transfusion or pregnancy.

Blood transfusions can be lifesaving and reduce disability in the management of sickle cell disease (SCD), a group of blood disorders that results in an abnormality in the oxygen-carrying protein hemoglobin found in red blood cells.³ Transfusion in patients with sickle cell disease presents particular challenges, both in being able to provide optimally matched red cells as well as whether transfusion will provide superior outcomes to other treatment options.⁴

ClinicalConnect provides timely access to past transfusion history and testing results

The Lab Transfusion Team at Joseph Brant Hospital is responsible for pre-transfusion testing to ensure compatibility between the blood of the patient requiring a transfusion and the donor blood component. For complex multi-transfused patients, it is critical to know the patient's transfusion history in order to determine the necessary testing required. This is where ClinicalConnect makes a difference. Being able to access the patient's EHRs via ClinicalConnect enables them to determine if he/she has received transfusions in the past or has received other treatments that may affect the test results. This access avoids having to call around to other hospitals in the Hamilton Niagara Haldimand (HNHB) Local Health Integration Network (LHIN) to request that information, and potentially experience a delay in obtaining the required details, as well as interrupting another busy blood bank's work to locate and fax the information back.

When a patient with new antibodies or complex transfusion requirements presents to JBH, the Medical Laboratory Technologists (MLT) can search in ClinicalConnect to determine whether the patient has been managed elsewhere in the LHIN. The transfusion history and/or testing results can be obtained directly from ClinicalConnect and if necessary, the MLT can follow up with that facility to obtain more detail.

One example provided relates to a patient with sickle cell disease who potentially required a transfusion, and was admitted to the Emergency Department during the night shift. Canadian Blood Services (CBS) maintains a Sickle Cell Patient Registry for patients with known disease. However, the technologist searched in ClinicalConnect first and was able to identify that the patient was being treated at a Hamilton-area hospital for their condition. The MLT was then able to contact that hospital to obtain the details on the patient’s last transfusion and other related testing, which saved a significant amount of time while awaiting a response from CBS. The information from ClinicalConnect facilitated providing blood product support to the patient in a timely manner.

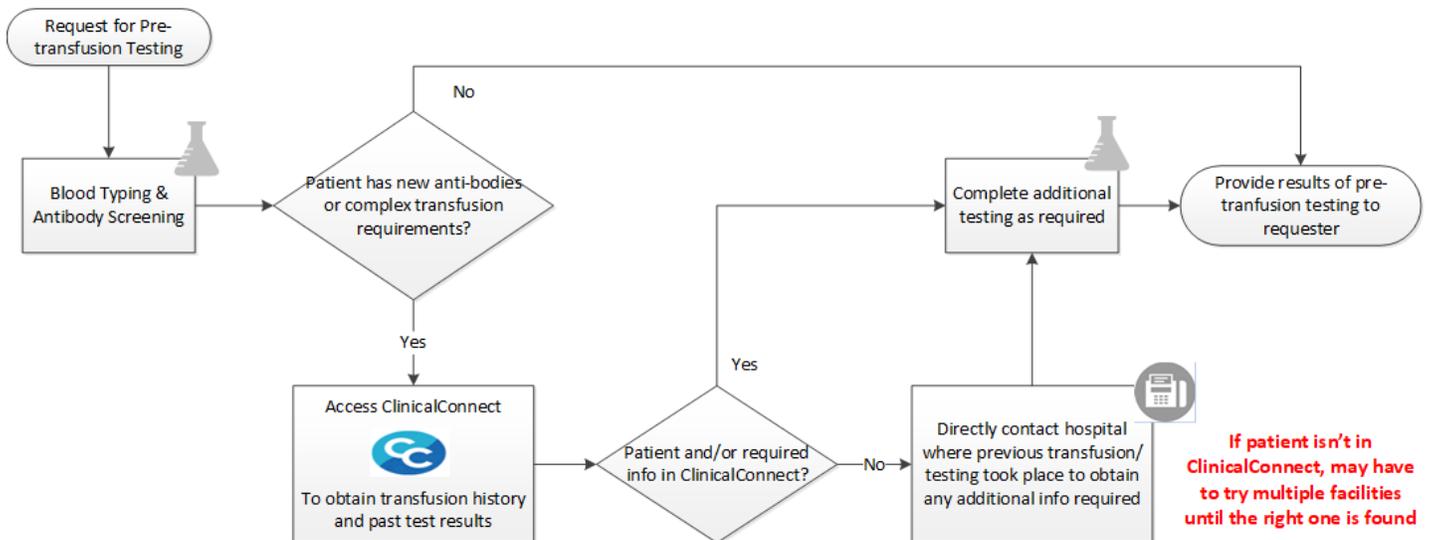


Figure 1: JBH Lab Transfusion Workflow

Testimonial

“All MLTs in Transfusion Medicine should have access to ClinicalConnect – it streamlines the process whenever a comprehensive patient transfusion history/record is required. It’s almost like the patient’s entire chart follows them. ”

Lynda Gaskin, Senior Technologist, Lab Transfusion, Joseph Brant Hospital

Questions

Authored by Wanda Hemsworth, Benefits Realization Lead, cSWO Change Management and Adoption Delivery Partner, HITS eHealth Office at Hamilton Health Sciences. For questions, comments, or to participate in cSWO’s Analysis and Research program, please contact: cSWOresearch@lhsc.on.ca.

Sources

¹ Walker, RH (1987). Special Report: Transfusion Risks. *American Journal of Clinical Pathology* 88:374, 1987

² Lane, D (2017). Pre-transfusion Testing, Professional Education. Retrieved from: <https://professionaleducation.blood.ca/en/transfusion/clinical-guide/pre-transfusion-testing>

³ Sickle cell disease. *Wikipedia*. Retrieved from: https://en.wikipedia.org/wiki/Sickle_cell_disease.

⁴ Ontario Regional Blood Coordinating Network.(2016) Bloody Easy 4: Blood Transfusions, Blood Alternatives and Transfusion Reactions. A Guide to Transfusion Medicine Fourth Edition. Retrieved from: <http://transfusionontario.org/en/download/bloody-easy-4-blood-transfusions-blood-alternatives-and-transfusion-reactions-a-guide-to-transfusion-medicine-fourth-edition/>