

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™, supports the Neonatal Transport team from the McMaster Children's Hospital (MCH) in providing quality care during interfacility transports and improves time to treatment.

Specialized neonatal transport teams are associated with improved outcomes

The development of regionalized secondary and tertiary care for critically ill newborns in Canada has necessitated the transport of neonates among facilities in order to provide different levels of neonatal care.¹ Interfacility transport of critically ill neonatal and paediatric patients has rapidly progressed, from moving children to tertiary children's hospitals from community emergency departments, to specialized teams bringing cutting-edge care, goal-directed therapies, and critical care interventions and monitoring in mobile ICUs (Intensive Care Units).²

Interfacility transports performed by specialized transport teams have been associated with improved survival rates and fewer unplanned events during transport as well as reductions in the mortality rate, morbidity rate, and hospital stay.³ Significantly more adverse events, including airway problems, the need for cardiopulmonary resuscitation, hypotension and loss of vascular access, are known to occur when a nonspecialized team transports paediatric patients.¹ Having dedicated transport teams rather than Neonatal Intensive Care Unit (NICU) staff on call for transport improves availability and mobilization as well as response times.¹

The Neonatal Transport Team at McMaster Children's Hospital provides stabilization and transport for premature and full-term infants, newborn to 28 days of age, requiring a higher level of care. The team consists of experienced and knowledgeable registered nurses who have advanced training in neonatal transport medicine. The team receives approximately 600 requests annually about infants needing emergent stabilization, repatriation and/or consultation. They also provide attendance at high-risk deliveries where pediatric coverage is not available. The program utilizes state of the art equipment specially designed for neonatal transport, mirroring the standards of care found in neonatal units. Transportation is provided by private transfer service, regional Emergency Medical Services (EMS) and ORNGE. CritiCall is instrumental in assisting the team to ensure every infant gets to the right level of care. If the MCH NICU is unable to accommodate an infant the team will then transport that infant to another facility where space is available.⁴

EHR access enables quality care during interfacility neonatal transports

The transport team accesses the EHR via ClinicalConnect at several points during a transport, as depicted in Figure 1:

- Prior to picking up the patient - by reviewing the patient's history including any bloodwork, x-rays, and any details on prenatal care that may be available to gain a better understanding of the patient's condition in advance such that they are better prepared to begin stabilization and transport as soon as possible
- During transport - to support treatment decision-making with any changes in patient condition that may occur
- Upon arrival at MCH - to obtain any additional details that were not provided by the community hospital in order to update the patient record / documentation

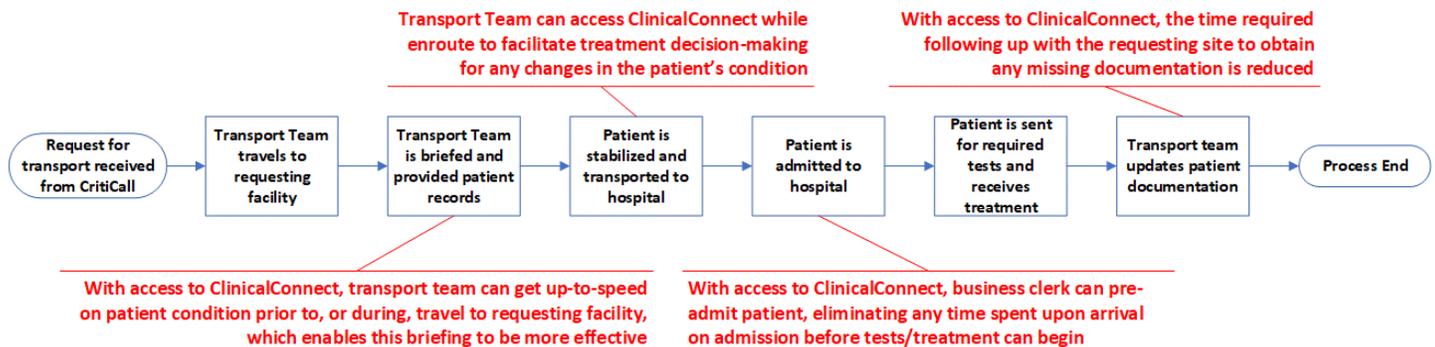


Figure 1: MCH Neonatal Transport Workflow

Prior to obtaining access to ClinicalConnect, the transport team would often not have time to go through the package of patient records received at the requesting facility until enroute - at which time they would discover that they may be missing some of the required information and would have to contact the referring hospital to get the missing documentation.

Testimonial

“When the doctor calls to request a transport, he/she often doesn't have all the results or may have the results but doesn't know when the tests were done. By accessing ClinicalConnect, we can get this information while enroute, enabling us to focus on stabilizing the patient and preparing our plan of care to ready them for transport upon our arrival.”

Laurie T., Registered Nurse, McMaster Children's Hospital Neonatal Transport Team

Questions

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Sources

¹ Whyte, H, Jefferies, A. (2015). The interfacility transport of critically ill newborns. *Canadian Paediatric Society, Fetus and Newborn Committee*. 2015; 20(5):265-60

² Stroud, M., Trautman, M., Schwartz, H., et al. (2013). Pediatric and Neonatal Interfacility Transport: Results From a National Consensus Conference. *Pediatric* 2013; 132:359-366

³ Orr RA, Felmet KA, Han Y, et al. (2009). Pediatric Specialized Transport Teams Are Associated with Improved Outcomes. *Pediatrics*. 2009;124(1):40-48

⁴ McMaster Children's Hospital. (2018). Neonatal Transport Team – About the Program. Retrieved from: <http://mcmasterchildrenshospital.ca/body.cfm?id=119>