EVT Quality Performance Discussions

Introduction

In the Summer of 2021, CorHealth Ontario initiated an annual cycle of EVT Quality Performance discussions with all EVT programs, Regional Stroke Networks, and the Ministry of Health (MOH). More recently, the Ontario Health Regions have also been engaged in these discussions. Each cycle consists of a focused performance discussion in the summer, followed by a performance touch base in January. These discussions provide a forum for open dialogue regarding Ontario Health-CorHealth's EVT Report, which now has 5 full fiscal years of data. The most recent reporting period is FY 22/23 Q1Q2.[1]

The purpose of this document is to highlight key issues and common themes which emerged during the January 2024 EVT Volume and Performance Discussions, as well as strategies being used by programs to address these challenges and/or further drive quality improvement. It should be noted that although the January performance discussions typically serve as an opportunity to touch base on activities discussed during the summer performance calls, the FY 2023/24 summer performance calls were deferred due to competing priorities. As such, these performance discussions focused on activities raised during the January 2023 Performance discussions and other activities highlighted by the programs. Additionally, it should be noted that due to Ontario Health-CorHealth's current transition to the Ontario Health Analytic Data Hub, data for year-end FY 22/24 are not currently available.

Provincial Emerging Issues and Themes

Notable issues and themes that emerged during the January EVT Performance discussions have been highlighted below. Although captured as distinct ideas, several of the themes are interrelated and reflect common underlying issues (e.g., health human resources). At times, these themes may build upon or reinforce ideas captured during earlier performance discussions. Previous summaries can be accessed on the CorHealth Website.

Capacity Challenges

Several programs raised concerns and/or challenges with respect to angiosuite, health human resource and/or post procedure bed capacity (i.e., Level 2 critical care beds and stroke unit beds). These concerns were amplified by increasing volumes and anticipated continuation of growth due to expanding indications for EVT (see theme: Expanding Indications for EVT).

While some sites are in the process of acquiring second or third biplane suites, others continue to operate with only one, resulting in competition with other patient populations. Staffing of the angiosuite, notably after hours, also poses challenges for select sites, resulting in increased staff burden and impact to next day coverage when after-hour cases occur.

[1] Full FY 22/23 results have been delayed due to Ontario Health-CorHealth's transition to Ontario Health's Analytic Data Hub.

However, concerns around capacity predominately focused on availability of post procedure beds. Several hospitals described the challenges of securing Level 2 beds, noting "competition" with other populations and lack of dedicated L2 beds for patients with stroke. At times, the Post-Anesthesia Care Unit is used to accommodate capacity within the ICU. However, this situation was described as less than ideal given the need for neuro expertise. As such, the need to build Level 2 bed capacity was identified as a key priority by many sites (see program sharing- capacity building). The time, however, required to ramp up these services (e.g., nursing etc.) was flagged as a challenge due to the immediate need for increased capacity.

Beyond the immediate post procedure care, the downstream effect of increased volumes was also discussed by many, noting challenges with respect to the stroke unit bed capacity. Repatriation was described as a key challenge and opportunity to increase stroke unit capacity at the EVT site. The Ontario Health's Provincial Stroke Repatriation Reference Document was described as helpful by many; however, it was noted to be lacking in terms of the levers required to ensure adherence.

Several programs expressed concern that these downstream capacity and flow challenges may become increasingly challenging as the selection criteria for EVT expands to include patients with large core infarcts. It is anticipated that these patients will likely have higher levels of disability, therefore require longer acute and rehabilitation lengths of stay.

Time Saving Quality Improvement Efforts

Several programs highlighted the impact of time saving quality improvement (QI) efforts. For some, new processes have resulted in time savings of up to 20 minutes (see Program Sharing section for additional detail on QI activities). The ability for sites to shift their focus to fine tuning and streamlining processes demonstrates the maturity of the programs and ongoing commitment to quality improvement and patient outcomes.

Expanding Indications for EVT

All EVT programs noted the potential impact that expanding EVT criteria may have on future volumes (i.e., large core infarcts and middle vessel occlusions). The magnitude of impact that these new indications will have on volumes was described as "unknown" by several programs; however, most described a cautious approach to expanding selection criteria and the need to build physician comfort, align with best practice recommendations, and understand how best to apply the evidence to their specific population.

Unexplained Volume Fluctuations

Some programs experienced unexplained growth in volumes, while others noted unexplained dips in volumes. All programs that experienced unexplained dips have since recovered.

In terms of unexplained decreases in volumes, programs highlighted the inverse relationship between increased Secondary Prevention efforts and stroke incidence as well as seasonal variations. The need to continually engage and educate referral sites was also raised as critical to ensure protocols and processes remain intact, especially when there is high turnover within Emergency Departments.

For those that experienced unexplained growth, increased incidence of stroke was often referenced as a potential contributor, as well as increased vascular risk factors, co-morbidities, and patient complexity.

Regardless of the direction in which changes occur, these fluctuations highlighted the complexity of planning for non-elective procedures. The ability to engage with Ontario Health-CorHealth biannually was noted to be critical to ensure projections are reflective of "real time" data.

Program Sharing

During the meetings, programs described several activities underway to improve quality and access. These activities, including the area of focus, have been captured below to promote sharing.

Are of Focus	Strategy/Quality Improvement Initiative

Improving Door in Door Out (DIDO) Time	• The **Champlain Regional Stroke Network** is implementing strategies to enable early mobilization of the stroke team at Telestroke Sites
	  ○ A standardized script was developed and incorporated into the paramedic LAMS card to ensure Telestroke Emergency Departments receive consistent information in the pre-notification process.
	• The **Regional Stroke Network of Northeastern Ontario** is working with Sault Area Hospital (SAH) and ORNGE to improve DIDO time.
	  ○ Given the distance between the airport and the hospital, transport delays may be attributable to the time spent waiting for arrival of ORNGE crew at SAH Emergency Department. To enhance efficiency, the patient will be transported to the airport via the local land EMS crew more frequently to meet ORNGE (and nurse escort indications will also be reviewed).

Improving Door to Needle Time	• **Windsor Regional Hospital** and **Health Sciences North** are implementing new processes to enable the administration of TNK in the CT Suite
	  ○ During daytime hours at **Windsor Regional Hospital**, the physician will request the nurse to bring TNK to the CT Suite. If the patient is eligible, TNK is administered after the plain CT, prior to perfusion imaging and CTA.
	  ▪ The team is currently exploring opportunities to expand this process to after hours patients as well.
	  ○ **Health Sciences North** implemented TNK in the summer of 2023 and is now embarking on a new initiative to reduce door to needle times by administering TNK in the CT Suite. A key enabler will be the use of a TNK kit which will be readily available in the ED *to grab-and-go* by the physician

Improving Door to Puncture Time	• **London Health Sciences Centre** is preparing the angio-suite in advance
	  ○ In collaboration with Infection Prevention and Control, LHSC has implemented processes to prepare the angio-suite for after hour cases (i.e., equipment opened and covered on a sterile field), resulting in significant decrease in door to puncture times (results pending publication) after hours.
	• **Health Sciences North** is bringing the EVT patient to the angiosuite sooner, while the angiosuite room is being prepared by the staff.
	  ○ Historically, the patient would remain in the Emergency Department until the angio suite was fully ready and prepared for the procedure. Now, there is agreement to move the patient as the room is being prepared, allowing for concurrent processes. The preparation of the angiosuite has been further streamlined through the development of pre-packaged kits and increased familiarity with individual EVT operator preferences.
	• **Trillium Health Partners** is going straight to the angiosuite.
	  ○ Patients transferred from referral sites are now transported directly to the angiosuite. The angiography system is used to confirm eligibility prior to initiating the intervention.
	• **Sunnybrook Health Sciences** is expanding the use of pre-registration.
	  ○ Pre-registration is now being used for patients being transported from referral sites ***and*** for patients being transported under bypass protocols between 9:00 am and 9:00 pm on weekdays. Local data collection has demonstrated a significant decrease in door to puncture times, particularly for those being transferred from referral site.
	  ○ Expansion of pre-registration to weekends is currently underway.

Building Capacity	• **London Health Sciences** is using a multi-pronged approach to build and sustain capacity, including
	  ○ The establishment of an Office of Capacity Management focused on addressing ALC challenges
	  ○ The use of dedicated L2 beds on the Stroke Unit to better protect beds critical care beds for stroke patients
	  ○ The Introduced of a new role (“admission/discharge facilitators”) to support repatriation, home and community care referrals.
	• **Unity Health Toronto** (UHT) is building angio-suite capacity
	  ○ The UHT Team is currently in the process of operationalizing a third biplane suite and exploring opportunities to centralize EVT to one angio-suite to minimize “competition” for the asset with other patient populations.
	• The **Stroke Network of Southeastern Ontario** has been exploring opportunities to expand the use of Telestroke within the region to

	distribute volumes and deliver care closer to home. In January 2024, Brockville General Hospital senior leaders agreed to work with the regional team to launch a Telestroke plan for implementation by summer 2024. • **Hamilton Health Sciences** has streamlined repatriation to preserve capacity ○ The team has worked closely with referral sites to optimize the repatriation process. Engaging partner sites in planning and data review has been a key success factor. Currently, the majority of patients are now repatriated within 24 hours of the initiation of the repatriation process.

Process Improvement Enablers	• **Windsor Regional Hospital**, **The Ottawa Hospital** are using rounds to debrief on cases and identify opportunities for quality improvement (e.g., stroke code rounds)
	• Telestroke Sites in the **Champlain Regional Stroke Network** are undergoing a revision of current case review template to further promote identifying variation in key process steps.
	• Diagnostic Imaging Medical Leadership and CSN-Stroke Neurology teams at **London Health Sciences** are using purpose planned rounds, formally called (M&M) to debrief on cases and identify opportunities for quality improvement (e.g., stroke code rounds)
	• The **University Health Network (UHN)** is improving access to timely data.
	  ○ UHN is developing a stroke dashboard that will pull data from the Electronic Medical Record to provide real time data to frontline providers.
	• **Hamilton Health Sciences Centre** is seeking to understand and build awareness of R2 activations.
	  ○ There is a process to monitor for any R2 activations through internal and provincial reports. In situations of R2 unavoidable activations, a comprehensive review is undertaken to understand the reason for the activation.
	  ○ There has been significant internal discussion about the EVT R2 Guidance Document, an analysis of R2 Referrals which has lead to the development of an HHSC EVT R2 Contingency Policy which identifies responsibilities, strategies to manage dual activations, and monitoring. Through these efforts, HHSC has only had 1 R2 Referral in FY 2023/2024.
	• The **Kingston General Hospital** is providing data back to referral sites to promote ongoing quality improvement and adherence to protocols
	  ○ KGH continues to track outcomes, including mRS score at 90 days for all EVT cases and for those treated late in the time window (6 to 24 hours). Collecting mRS scores at 90 days is time consuming. The team may instead adopt the indicator in

	the CorHealth EVT Stroke Report once its regular reporting cycle resumes: time spent at home within 90 days. ○ Outcomes are shared with referring sites to demonstrate the impact of their role in the system. Referral sites have shared the value in receiving this information, and the opportunity to discuss questions including concerns about ACT-FAST protocols for late time window presentations
Streamlining Transportation	• The **Champlain Regional Stroke Network** is standardizing processes for arranging transportation at referral sites. ○ With high ED turnover, the CRSN identified inconsistencies in the approach being used to organize transportation, resulting in confusion and transfer delays. Opportunities to standardize processes are currently being explored. • The **Northwest Ontario Regional Stroke Network, along with system partners, implemented an** Air Bypass in remote communities of the region to enable direct transport to the EVT Centre. ○ In remote "fly-in" communities, the Telestroke site is bypassed in favour of the EVT site for patients with probable Large Vessel Occlusion Stroke • The **Northwest Ontario Regional Stroke Network** developed an innovative solution to navigating patients to stroke care in the Northwest. ○ *NWO Navigate* application was developed to support staff responsible for stroke care and decision making at referral sites to assess patients, determine eligibility for treatment and identify the most appropriate transport destination. Trina Diner was awarded the 2023 RBC Innovation Hero of the Year award, and the team was nominated for Innovation Project of the Year for their solution to navigating patients to best practice stroke care.

Next Steps

Based on feedback received from these performance discussions, Ontario Health-CorHealth is planning to undertake a capacity evaluation and planning exercise in FY 2024/25 to support the impact of growing volumes.

Sites will provide updates on their quality improvement efforts during the next EVT Quality Performance Discussions planned for July/August 2024/25.[2] Ongoing monitoring of the system with providers to assure quality of services and patient outcomes will remain a key focus for Ontario Health-CorHealth in the coming year.

[2] Subject to change based on availability of the Ontario Health-CorHealth EVT Report.