

Updated Stroke Clinical Handbook: Endovascular Treatment (EVT) and what it means for me...

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Acknowledgement

- The Handbook has been developed through collaborative efforts between the Ministry of Health and Long-Term Care, Health Quality Ontario (HQO), and the HQO Expert Advisory Panels on Episodes of Care for Stroke (the “expert advisory panel”).
- The content of this presentation follows the content of the Stroke Clinical Handbook

Intentions

- Provide a brief overview of updates to the Clinical Handbook
- Describe Endovascular Treatment (EVT) including the provincial process for accessing EVT treatment and care
- Discuss ongoing work and next steps to ensure access to sustainable high quality EVT care in Ontario

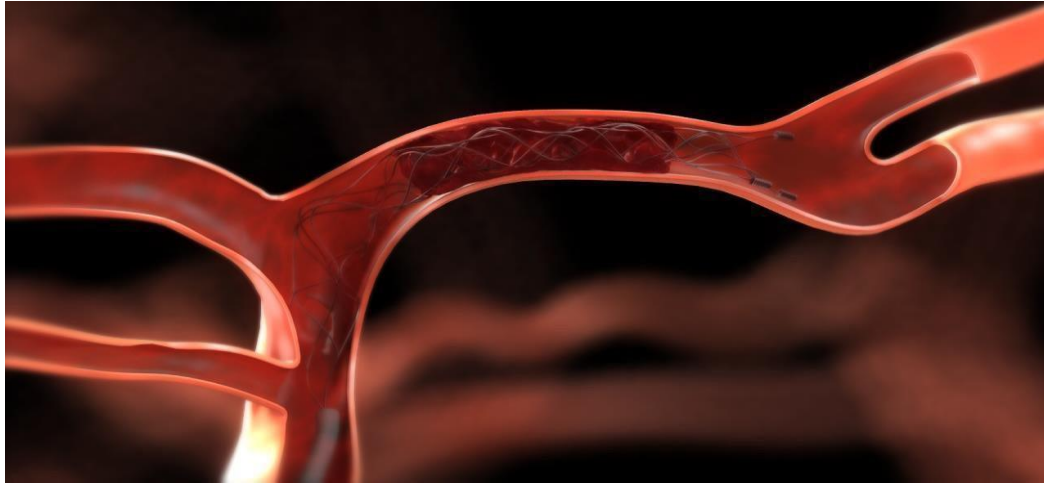


Updates to the Stroke Clinical Handbook

- Recommendation 1.2.2: Change to the treatment window timing
- Recommendation 1.2.3: Rapid brain imaging including CTA Recommendation 1.2.4: Multiphase CTA
- Recommendation 1.2.5: Rapid brain imaging interpreted by a provider with expertise
- Recommendation 2.3.1: Reference to new cross-continuum modules
- Recommendation 2.4.1: OHTAC recommendation on the management of patients with TIA
- Recommendation 2.4.2: TIA patients to consider for admission
- Recommendation 2.4.4: Acetylsalicylic acid in patients who failed the NPO (nil per os, or nothing by mouth) screen
- Recommendation 2.5.2: Revision of door-to-needle timing of tissue plasminogen activator administration
- Recommendation 2.6.1: Change to the treatment window timing
- Recommendation 2.6.3: EVT Imaging Criteria
- Recommendation 2.6.4: Use of EVT and thrombolysis
- Recommendation 2.6.5: EVT Centre Criteria
- Recommendation 2.6.6: EVT post procedural care Recommendation 2.6.7: Stroke unit care for EVT patients Recommendation 3.1.1: OSN Stroke Unit definition
- Recommendation 3.2.1: Early mobilization recommendation updated
- Recommendation 3.2.2: Timing for AlphaFIM®



Endovascular Therapy (EVT)

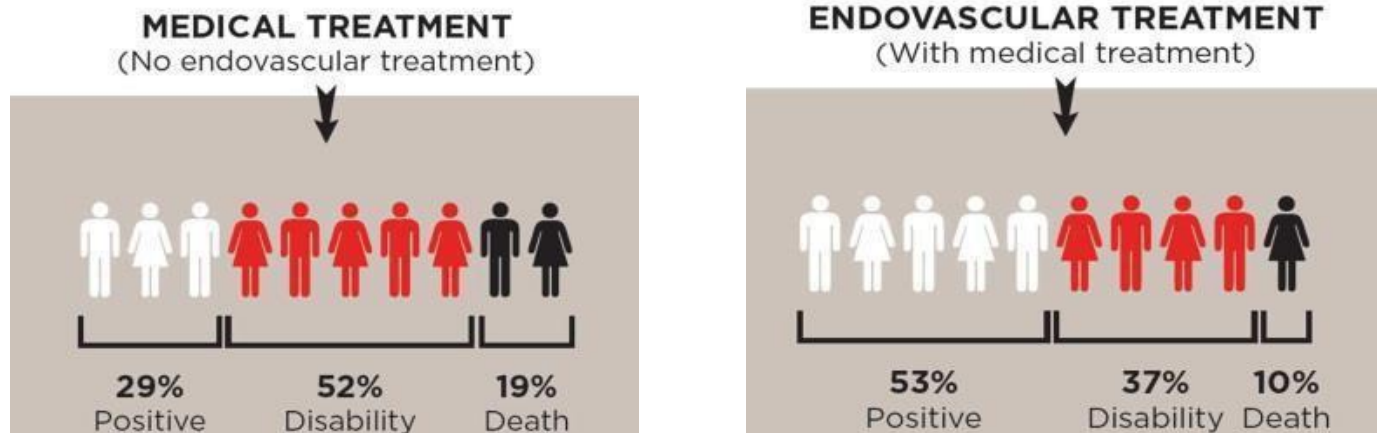


EVT is an image guided procedure for clot removal using a catheter most commonly inserted through the groin.

It is performed by specialists with neurointerventional expertise.



What is the impact of EVT?



(M. Hill ESCAPE TRIAL 2015)

EVT has shown significant reduction of patient disability and a 50% reduction in overall mortality compared with current standard of tPA alone.

It is a safe, highly effective treatment that saves lives and dramatically reduces disability

Which Sites Provide EVT?

EVT Hospitals :24/7

Hamilton Health Sciences

London Health Sciences Centre

St Michael's Hospital

Sunnybrook Health Sciences Centre

The Ottawa Hospital- Civic Campus

Trillium Health Partners

University Health Network-Toronto Western Hospital

EVT Hospitals: Non 24/7

Thunder Bay Regional Health Sciences Centre – single interventionalist

Windsor Regional Hospital – single Interventionalist

Kingston General Hospital – Mon – Fri 8-4

- 10 hospitals providing EVT
- 7 hospitals provide EVT 24/7
- 3 organizations offer limited access dependent on EVT specialists' availability



Ontario EVT Centres

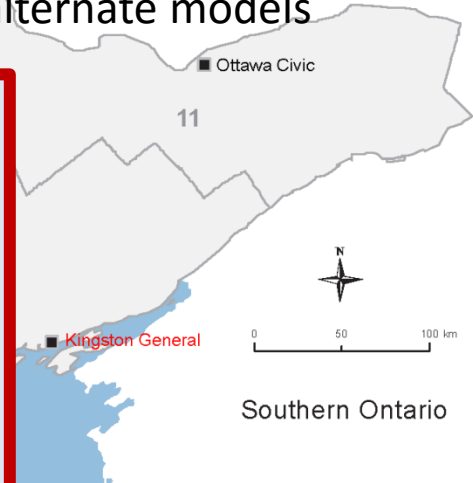
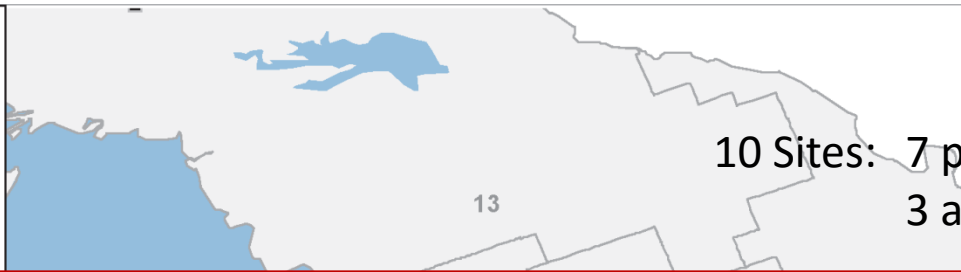
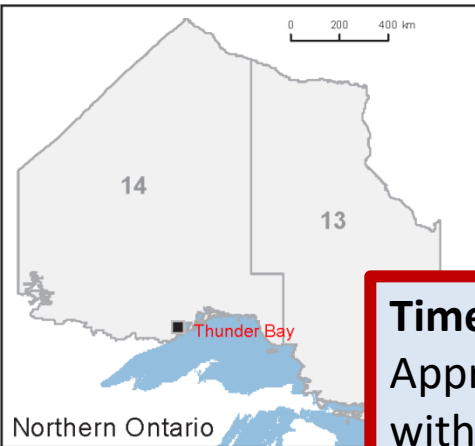
10 Sites: 7 providing 24/7
3 alternate models

Time sensitive intervention:

Appropriate patients who can arrive at a treating site within 6 hours of onset will be considered on a case by case basis.

- **Select** patients will be eligible up to 12 hours.

Initial target for transfer from sites within a 2 hour driving distance of an EVT site.



Local Health Integration Networks	
1. Erie St. Clair	8. Central
2. South West	9. Central East
3. Waterloo Wellington	10. South East
4. Hamilton Niagara Haldimand Brant	11. Champlain
5. Central West	12. North Simcoe Muskoka
6. Mississauga Halton	13. North East
7. Toronto Central	14. North West

Non 24/7 Sites
Kingston General Hospital
Thunder Bay Regional Health Sciences Centre
Windsor Regional Hospital



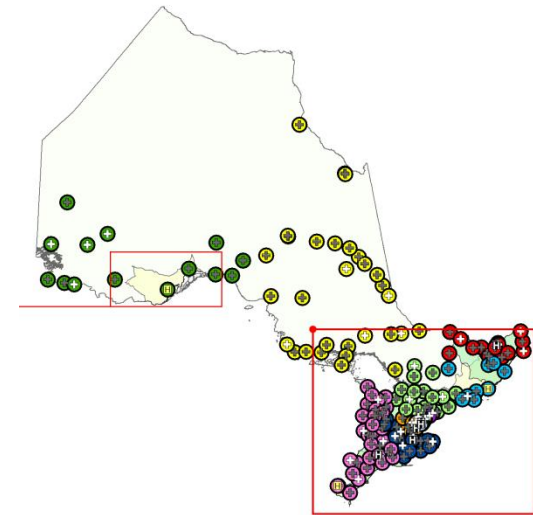
What does this mean for me?

1. Non-tPA Sites

- Bypass and walk-in protocols are to be used for rapid transfer to a tPA site or EVT site if it is significantly closer.

2. tPA Site

- tPA may be delivered through Telestroke or an onsite stroke physician.
- Once patient eligibility for EVT is confirmed, referral is initiated through CritiCall Ontario.



3. Intervention sites

- These sites provide EVT for appropriate patients.

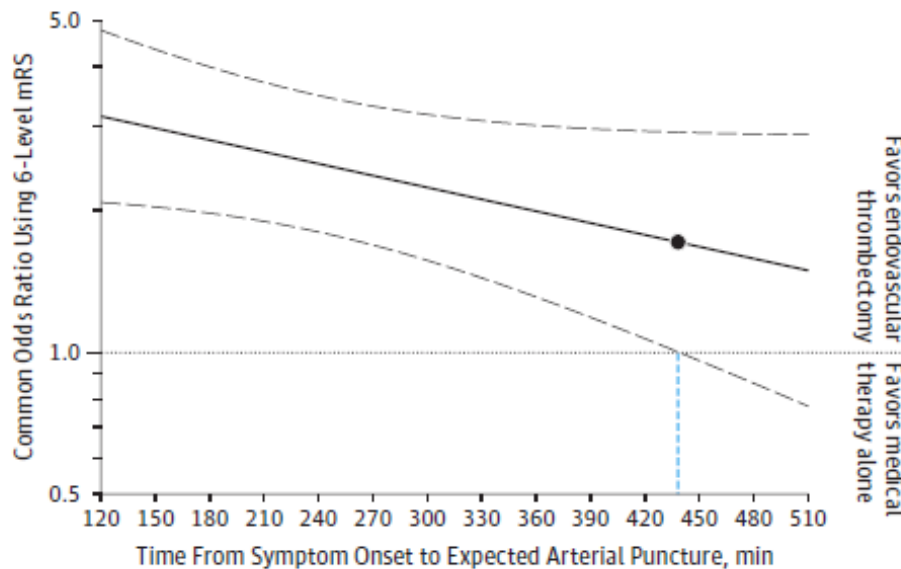
Importance of Early Assessment and Treatment

Estimated pace of neurologic loss in a typical large-vessel acute ischemic stroke¹

	Neurons	Accelerated aging
Every second	32,000	8.7 hours
Every minute	1.9 million	3.1 weeks
Every hour	120 million	3.6 years
10 hours*	1.2 billion	36 years

Stroke. 2006; 37: 263-266

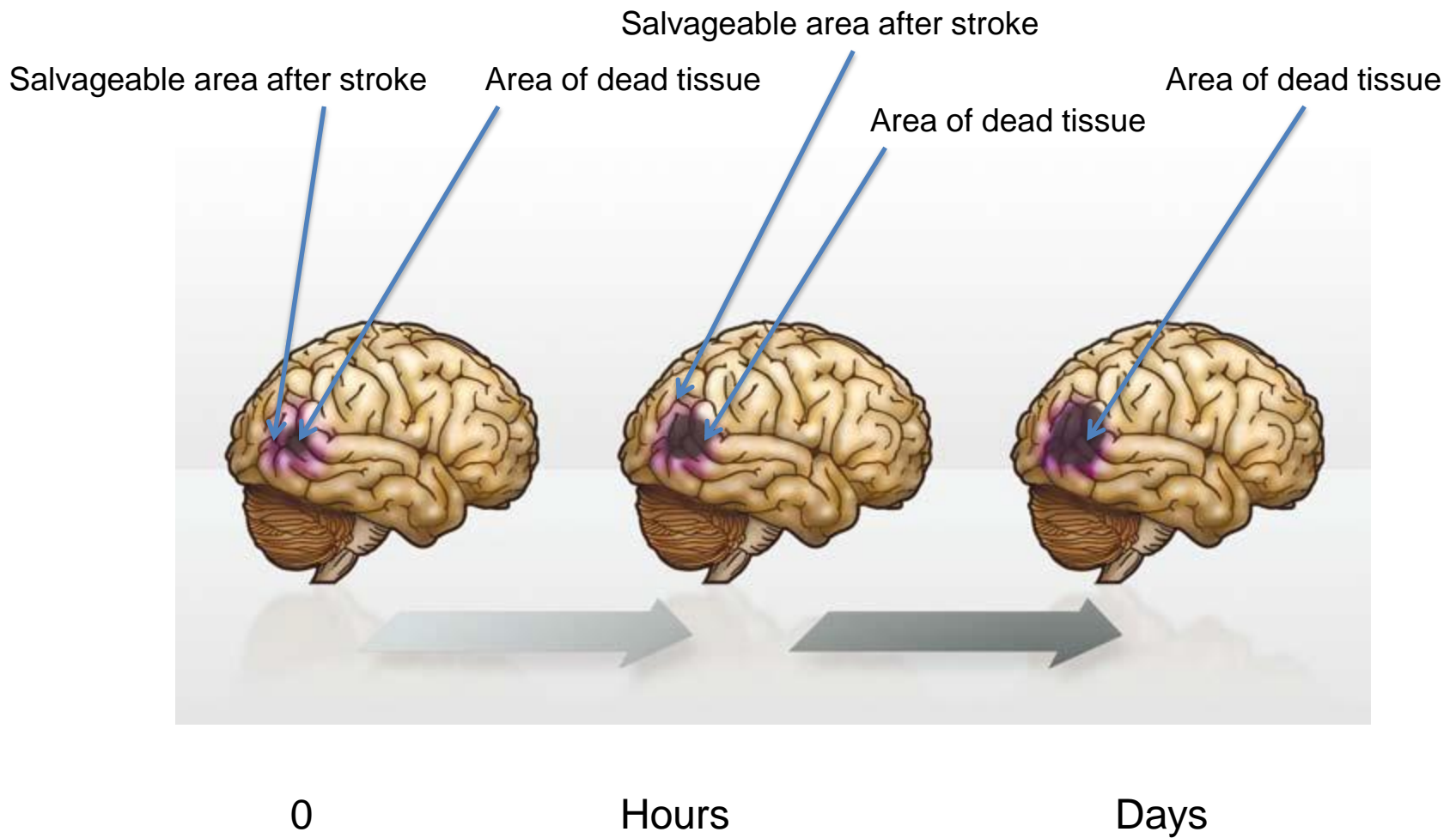
A Odds ratio for less disability at 3 mo in endovascular thrombectomy vs medical therapy alone groups by time to treatment



CARDIAC CARE NETWORK



²Saver et al JAMA 2016;316(12):1279-1288 (HERMES)



PROVINCIAL EVT PROCESS



Provincial EVT Process: Right Patient, Right Place

- EMS (2.6.5)
 - Paramedic Prompt Card (update planned Dec 2017)
 - Bring appropriate patients to tPA centres
 - Bypass non-tPA site or via walk-in protocol
- When a patient arrives at a tPA site...
 - **TIME is BRAIN...DIDO**
 - Identifying appropriate patients (2.6.1, 2.6.2, 2.6.3, 2.6.4)
 - CTA required – 24/7 access
 - Common mCTA protocol
 - Working with ENITs to share images
 - » Quality and timeliness of image transfer
- Determine eligibility: Telestroke and/or local physician

**PARAMEDIC PROMPT CARD
FOR
ACUTE STROKE PROTOCOL**

Indications for Patient Redirect or Transport Under Stroke Protocol
Redirect or transport to a Designated Stroke Centre will be considered for patients who:*

Present with a new onset of at least one of the following symptoms suggestive of the onset of an acute stroke:

- unilateral arm/leg weakness or drift
- slurred speech or inappropriate words or mute
- unilateral facial droop

AND

Can be transported to arrive at a Designated Stroke Centre within 3.5 hours of a clearly determined time of symptom onset or the time the patient was "last seen in a usual state of health".

* Note: A Designated Stroke Centre is a Regional Stroke Centre, District Stroke Centre or a Telesstroke Centre.


Contraindications for Patient Redirect or Transport Under Stroke Protocol
Any of the following conditions exclude a patient from being transported under Stroke Protocol:

- CTAS Level 1 and/or uncorrected Airway, Breathing or Circulatory problem
- Symptoms of the stroke resolved prior to paramedic arrival or assessment**
- Blood Sugar <3 mmol/L
- Seizure at onset of symptoms or observed by paramedic
- Glasgow Coma Scale <10
- Terminally ill or palliative care patient
- Duration of out of hospital transport will exceed two (2) hours

CACC/ACS will authorize the transport once notified of the patient's need for redirect or transport under the Acute Stroke Protocol.

** Note: Patients whose symptoms improve significantly or resolve during transport will continue to be transported to a Designated Stroke Centre.

Version 2.0 February 2011

 Ontario



Provincial EVT Process: Referral Process (tPA sites)

- Once eligibility for EVT is confirmed
 - Contact CritiCall Ontario to request a consultation for EVT with the ***Stroke Endovascular Team***
 - Telestroke sites will access the Telestroke Neurologist through CritiCall prior to initiating EVT referral
- The ***Stroke Endovascular Team***, in collaboration with the Stroke Physician, will:
 - Assess cases for eligibility for transfer on a case-by-case basis and recommend transfer when appropriate

Provincial EVT Process: Transfers

- Confirm patient is confirmed “Life or Limb”
- CritiCall Ontario will facilitate transport coordination by:
 - Contacting Central Ambulance Communication Centre (CACC) or Ornge where appropriate.
- Recommended that Land Transfer is utilized whenever possible to support timely management:
 - Requests for land transport to be made with CritiCall
- Health care provider from the referring site will be required to accompany the patient if thrombolysis is being administered
- If the transport provider’s initial ETA does not meet the patient’s transport needs, the referring hospital may request that CritiCall Ontario contact an alternate transport
- It is preferable to have EMS providers wait at EVT site for assessment before leaving, if possible.

PROVIDING EVT AND FOLLOW-UP CARE



Intervention: EVT

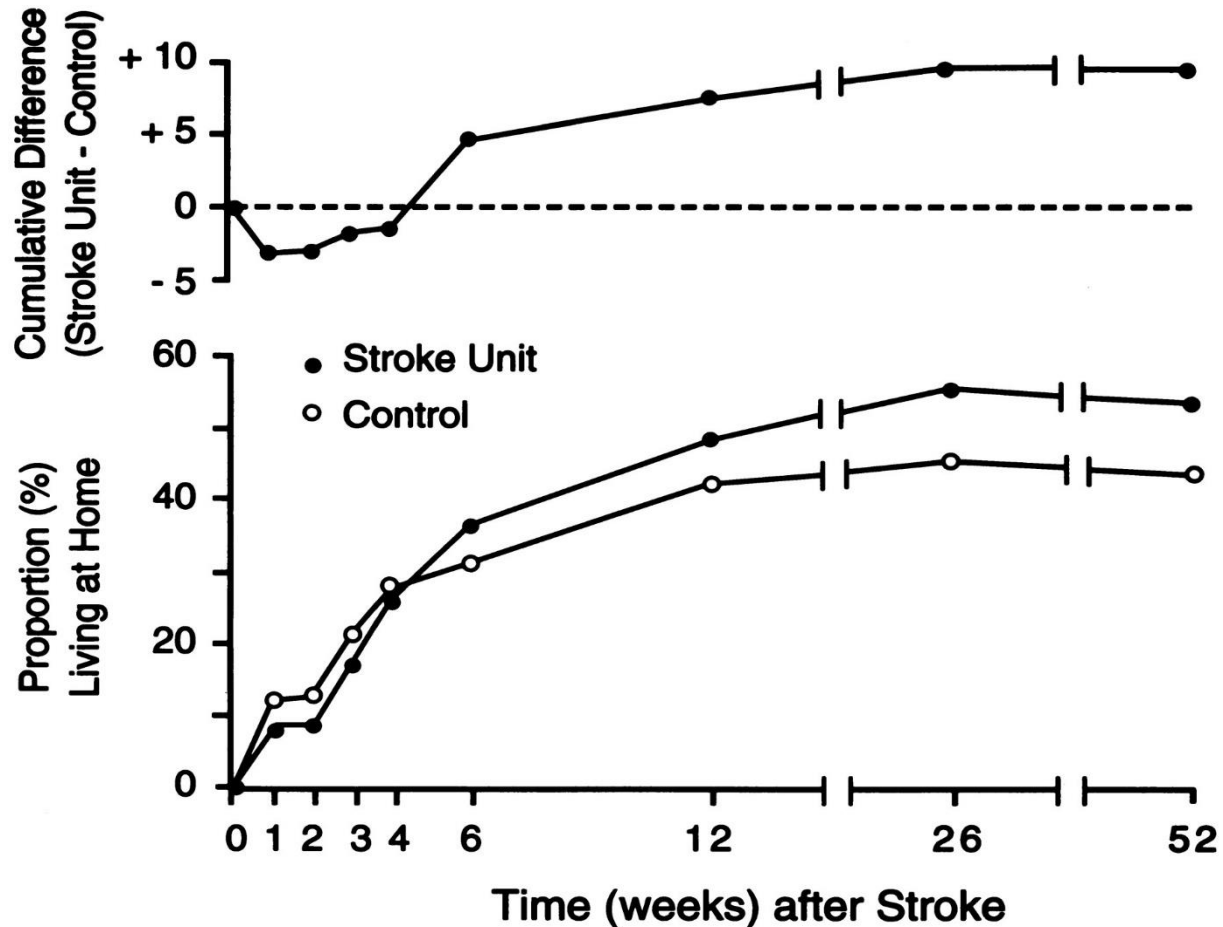
- Consistent access to a stroke endovascular team including a neurologist and neurointerventionalist (24/7 coverage)
- Neurointerventionalist training and expertise
 - ≥ 1 year experience in stroke interventions and supra-aortic procedures
- Implementation of a streamlined process for accessing the *Stroke Endovascular Team* for CritiCall referrals.
- Stroke imaging on-site(CT &mCTA/CTP) (24/7);
- Expertise with stroke imaging interpretation
- Adequate volume of cases to maintain level of expertise - recommended >20 /year/centre
- Biplane angiography suite (recommended)
- Retrievable stents +/- thromboaspiration devices

Provincial EVT Process: Post Procedure Care

- Patients should be admitted to a designated critical care /step down unit, approximately 24 hours (2.6.6)
 - Monitoring capabilities and protocols in place that follow current evidence based-stroke best practice recommendations
- Post critical care EVT patients should be admitted to a stroke unit (2.6.7)
- If a patient is repatriated post procedure:
 - Alignment with the Life and Limb policy
 - Repatriate patients deemed medically stable and suitable for transfer within a best effort window of 48 hours to the referring hospital. If the referring hospital cannot provide the patient with the clinical services required or is not in the LHIN geographic area where the patient resides, the patient will be sent to the hospital closest to the patient's home that can provide the clinical services required.
 - Repatriated to the closest hospital with a stroke unit

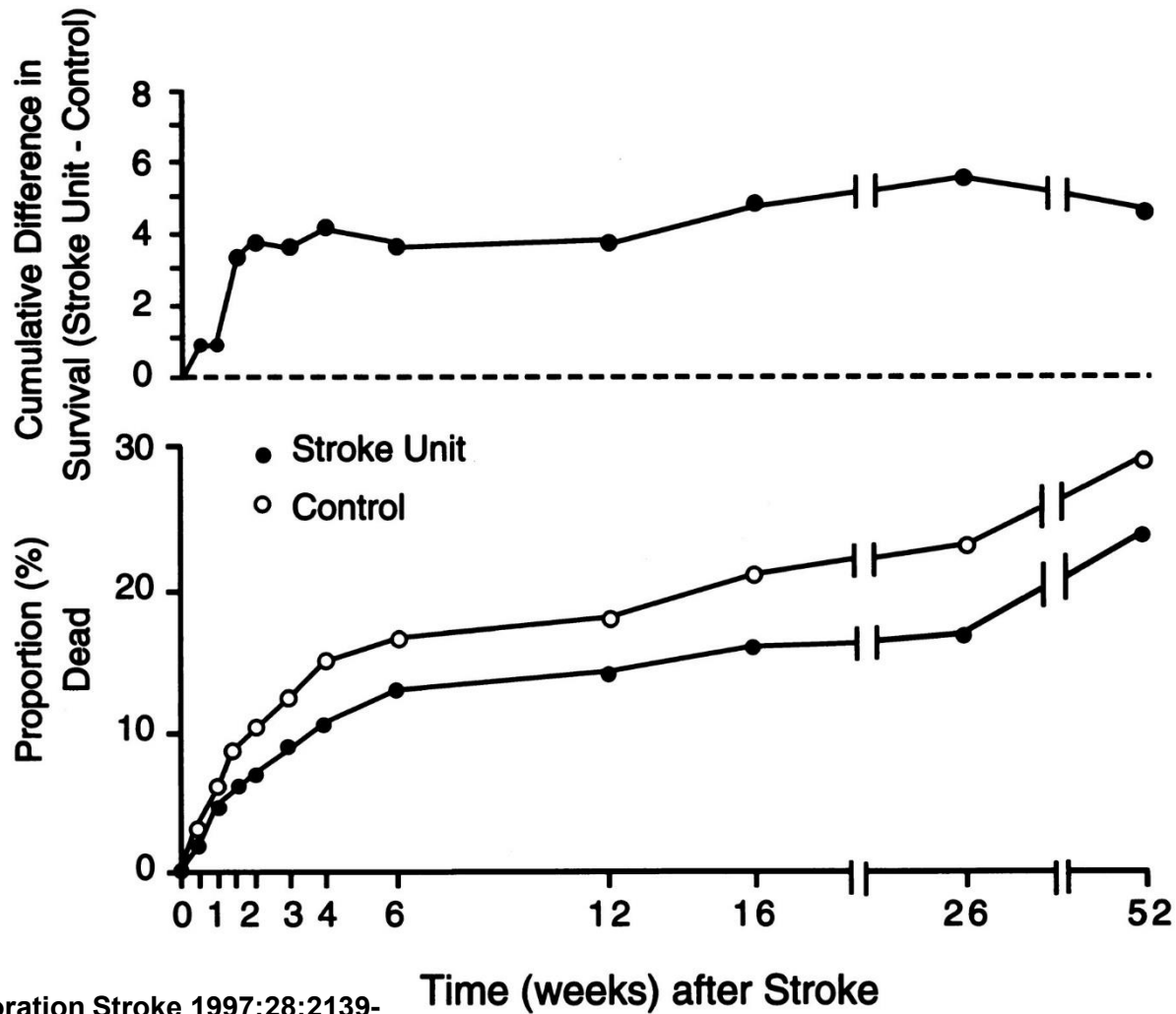


Proportion of patients living at home after the index stroke and cumulative difference between stroke unit and control subjects.



Stroke Unit Trialists' Collaboration Stroke 1997;28:2139-2144

Proportion of patients known to be dead after the index stroke and cumulative difference between stroke unit and control subjects.



Stroke Unit Trialists' Collaboration Stroke 1997;28:2139-2144

Module 2 – Stroke Unit Definition

- A geographical unit with identifiable co-located beds (eg 5A -7, 5A-8, 5A-9, 5A-10, 5A-11) that are occupied by stroke patients 75% of the time and has a dedicated inter-professional team with expertise in stroke care with the following professionals at a minimum nursing, physiotherapy, occupational therapy, speech language pathologist”. (Evidence Level A)



EVT EVALUATION AND NEXT STEPS



Evaluation and Monitoring

- Capturing EVT cases
 - Ensure quality of coding and documentation
- Reporting
 - Process and minimum data set under development
 - E.g. door to CT, CT to arterial puncture, arterial puncture to reperfusion, % access to EVT
 - Requirement for new CIHI data elements
 - Quality improvement process
 - Creating feedback loops for issues or incidents experienced
- Attestation process for EVT sites in progress
 - Ensuring quality and capacity for current and new sites



Next Steps for EVT

- Ensuring rapid CT and CTA protocols for all eligible patients in place
- Confirm evaluation for QBP and reporting processes
 - Create sustainable mechanisms for data collection and monitoring
- Develop a strategy to optimize access to EVT in Ontario

QBP IMPLEMENTATION



So...What does this mean for me?

- Are the best practices in place?
- If not get started. If yes help others.
- Discuss with your LHIN what should happen regionally
- Reach out to your Regional Stroke Network
- Network &/or plan with colleagues/leading centres
- Access on-line resources



RECOMMENDATIONS:

- Overview and Methods
- Recognition of Stroke
- Prevention of Stroke
- Hyperacute
- Acute
- Rehabilitation
- Transitions
- Mood, Cognition & Fatigue
- Telestroke
- Pediatric Stroke
- Appendices

Stroke Rehabilitation Survey

We invite you to complete our 2017 update of the [Canadian Stroke Rehabilitation Services Resource Inventory \(SRMRI\)](#).

» [Read more](#)



Canadian Stroke Best Practice Recommendations Stroke Rehabilitation Survey

UPCOMING EVENTS:



May 16-18, 2017
ESOC
Prague, Czech Republic
[Visit Website](#)

May 24-28, 2017
CAPMR
Niagara Falls, Ontario CA
[Visit Website](#)

June 13-16, 2017
CANN 48th Annual Meeting and Scientific Sessions
Saskatoon, Saskatchewan CA
[Visit Website](#)



TRANSITIONS OF CARE

QUALITY & PERFORMANCE



PATIENT & FAMILY TOOLS:



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[Stroke Quality Based Procedures Resource Centre](#)

[OSN Stroke Reference Group Recommendations](#)

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Stroke Quality Based Procedures Resource Centre

We are currently revising the Stroke QBP Resource Centre and some items may not be available or in the correct location. Please send an e-mail to strokeinfo@ccn.on.ca and we would be pleased to follow up with you.

Stroke was selected as one of the first Quality Based Procedure medical conditions to be implemented and the Ontario Stroke







- Please forward additional questions regarding the presentation to strokeinfo@ccn.on.ca