

Carotid Artery Testing for Stroke Prevention in NL

Guideline

Canadian Stroke Best Practice Recommendations states that carotid artery territory TIA is a medical emergency and patients need either carotid artery ultrasound or CT angiogram within 24 hours.

Objectives

To determine whether the reduction in carotid artery testing at St. Clare’s Hospital was associated with an increase in other diagnostic modalities, and whether the rate of appropriate ordering of carotid artery testing had improved following academic detailing.

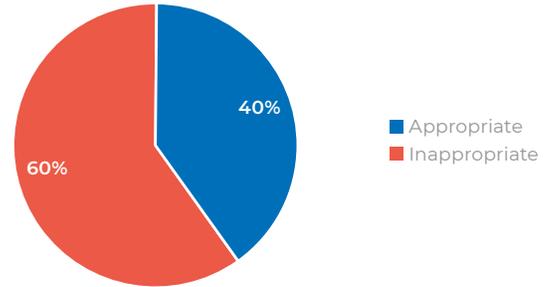
Practice Points

1. 19% of strokes in NL are secondary to warning symptoms of Transient Ischemic Attack (TIA), the highest rate in Canada.
2. Secondary strokes are preventable in patients with carotid artery territory TIA because early carotid revascularization is efficacious in symptomatic patients with critical carotid stenosis.
3. Consequently, carotid artery territory TIA is a medical emergency and these patients need either carotid artery ultrasound or CT angiogram within 24 hours.
4. Carotid artery testing is appropriate when there are rapid onset symptoms arising from the carotid artery territory including:
 - Unilateral weakness of face/arm/leg
 - Speech disturbance (aphasia and/or dysarthria)
 - Monocular visual loss (Amaurosis Fugax), or loss of one visual field (Homonymous Hemianopia)

Data

- St. Clare’s Vascular Laboratory provided data on carotid ultrasound, and NLCHI provided data on volume of carotid ultrasounds undertaken in other hospitals and of CT/MRI carotid tests.

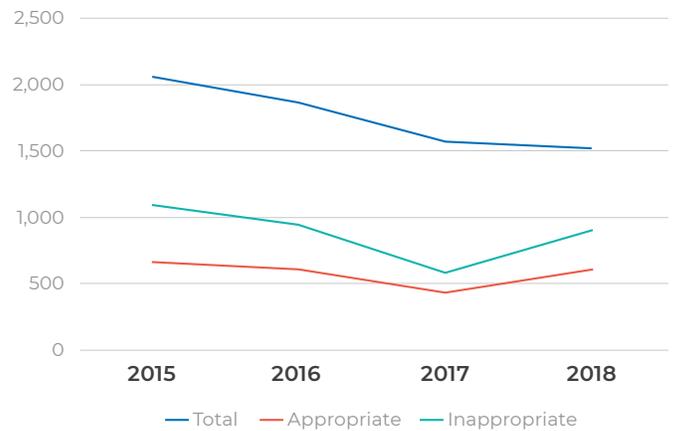
Carotid Artery Testing at St. Clare’s (2007–2015) N=17,600



- 40% of carotid artery tests ordered were indicated.
- More recent data (2015–2018) shows the proportion of appropriate carotid artery tests to overall number of tests performed at the Vascular Lab has not changed.

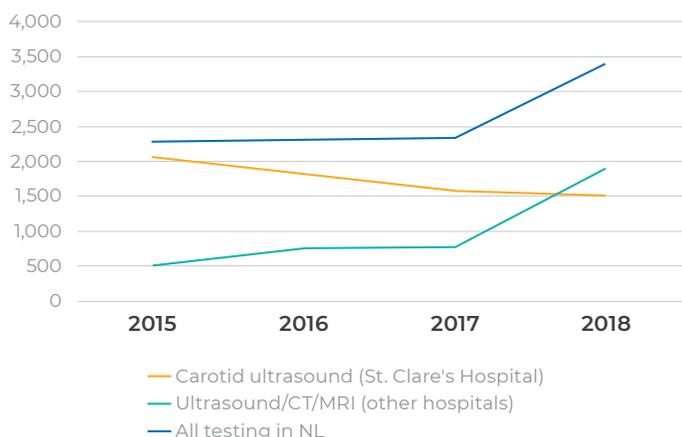
Carotid Artery Test Appropriateness

Volume of Carotid Artery Testing at St. Clare’s 2015–2018



40% of carotid tests were indicated.

Volume of Carotid Artery Testing in NL 2015–2018



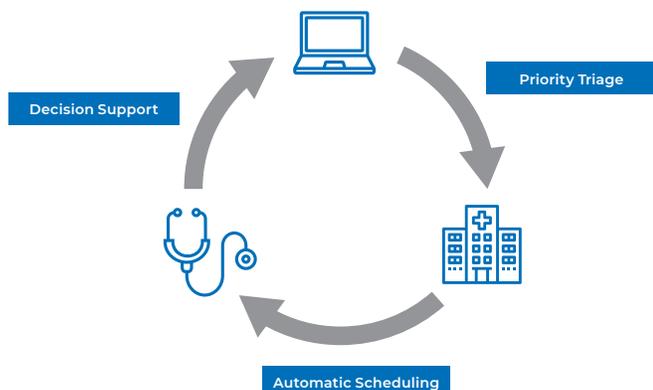
- The volume of carotid artery testing at the Vascular Lab has decreased.
- At the same time, the volume of carotid artery tests (e.g., carotid ultrasound, CT angiograms, MRI) at other health care facilities across the province has increased.

Wait Times

At the Vascular Lab, wait time for a Priority 1 (recent TIA) test decreased from 9 to 2.2 days in 2017. However, the optimal wait time is within 1 day.

Solution: An eOrdering form launched within HEALTHeNL, the provincial Electronic Health Record. It will include a decision tool to determine priority and automatic scheduling.

Basic Components of the eOrdering Solutions



When to Test?

✓ Good Indicators	✗ Bad Indicators
Unilateral weakness of face/arm/leg	Syncope
Speech disturbance (aphasia and/or dysarthria)	Headache
Mononuclear visual loss (Amaurosis Fugax), or loss of one visual field (Homonymous Hemianopia)	Tinnitus
	Carotid bruit
	Pain
	Generalized weakness

Conclusions

1. 40% of carotid artery testing in the Vascular Lab was indicated.
2. Carotid artery testing across the province has increased.
3. The wait time for high priority patients at the Vascular Lab has decreased but is still not optimal.
4. The objective of eOrdering is to increase the volume of necessary tests and improve wait time in high priority patients with carotid artery territory symptoms.