nova scotia health authority
Cardiovascular Health Nova Scotia

The Bulletin

Welcome to the Cardiovascular Health Nova Scotia (CVHNS) e-mail bulletin, produced 3 times annually. The Bulletin has been created to share information about the program's activities, related cardiovascular health initiatives, and ideas from around the province.

IS IT A MIDDLE CEREBRAL ARTERY (MCA) STROKE

The MCA is the largest cerebral artery and the vessel most commonly affected by stroke. The MCA supplies most of the outer convex brain surface via its cortical branches, as well as much of the subcortex (basal ganglia, and the posterior and anterior internal capsules) via its lenticulostriate branches. The latter are small, deep, penetrating end arteries arising from the proximal (M1) segment of the MCA.

Syndromically Speaking

Lenticulostriate branch occlusion results in lacunar infarction, recognizable at the bedside as a lacunar stroke syndrome (LACS). The most common LACS is a pure motor stroke in which there is weakness affecting equally the face, arm and leg (or arm and leg) on one side, *without* any other neurological deficits. Pure sensory LACS is the sensory equivalent. In the ataxic hemiparesis LACS, there is unilateral arm and leg incoordination that is out-of-keeping with the degree of weakness in the same limbs.

Cortical territorial MCA strokes produce more extensive neurological deficits. Horizontal gaze deviation towards the affected hemisphere signals involvement of the anterior frontal lobe convexity. Contralateral hemisensorimotor deficits, and homonymous (same in both eyes) visual field defects are also common to either right or left MCA stroke. Aphasia (*language* impairment, as opposed to motor speech disturbance [dysarthria]) is a left MCA sign. Visuospatial neglect, most easily detected at the bedside as left-sided sensory extinction on bilateral simultaneous stimulation in the tactile or visual modalities (or both) is a hallmark of a right MCA stroke.

Why Does This Matter?

The importance of prompt recognition of MCA stroke has been highlighted by the advent of endovascular thrombectomy (EVT). The potential EVT candidate has:

- An MCA stroke syndrome
- Only minimal ischemic changes on non-contrast CT (NCCT; "small core infarct")
- A CT angiogram (CTA) showing a proximal MCA occlusion, good collaterals, and an aortic arch that is navigable by the Interventional Neuroradiologist's catheter

FAST-VAN: A New Mnemonic for MCA Stroke Diagnosis

The face, arm, and speech (FAST) assessment for stroke is already well known. The vision, aphasia, neglect (VAN) assessment introduced in 2016, adds examining the patient for:

- **Vision** – Can someone see to the left, right, up and down? Patient looks preferentially to one side (usually away from the hemiparesis). More technically, is there an homonymous hemianopia (or quadrantanopia?
- **Aphasia** – Patient looks at simple objects but can't name them (e.g., pen, watch). This usually goes with right hemiparesis.
- **Neglect –** When someone looks to one side and ignores the other side. Their eyes are usually looking to the left or the right. The patient ignores left side when both sides are touched simultaneously (usually goes with left hemiparesis)[1].

Studies to date[2,3] suggest that the VAN addition to FAST is easy to use and improves the accuracy of MCA stroke diagnosis. FAST-VAN may find application as a screening test for deciding which hyperacute stroke patients should be subjected to immediate CTA head and neck (in addition to the already routine NCCT head scan).

Dr. Stephen Phillips, Stroke Neurologist, QEII Health Sciences Centre

References

1. Teleb, MS. Stroke VAN: Identifying massive strokes earlier to save lives. 2016. [Retrieved April 17, 2018] www.strokevan.com/.
2. Teleb MS, Ver Hage A, Carter J, et al. Stroke vision, aphasia, neglect (VAN) assessment—a novel emergent large vessel occlusion screening tool: pilot study and comparison with current clinical severity indices. 2016. *J NeuroInterv Surg*; 9(2):122-126.
3. Wasyliw S, Whelan R, Kelly M, et al. The FAST VAN tool for identifying large vessel occlusion in acute stroke [Canadian Stroke Congress abstract]. 2017. *Int J Stroke*; 12(4S):4–84.

Learning Opportunities

NB Heart Centre Annual Symposium, September 20-22, 2018. Saint John, NB. http://en.horizonnb.ca

6th Annual Nursing Day in Cardiology, September 28, 2018. Sydney, NS. Contact Rose McDonald, 902-567-6325, rose.mcdonald@nshealth.ca

World Stroke Congress, October 17-20, 2018. Montreal, QC. www.strokecongress.ca

Canadian Cardiovascular Congress, October 20-23, 2018. Toronto, ON. www.cardiocongress.org

QEII Emergency Nurses Education Day, October 26, 2018. Halifax, NS. Contact Trudy French, QEIIEmergencynursesedu@hotmail.com

CVHNS News

CVHNS Cardiovascular and Stroke Quality Indicator Reports

CVHNS released its annual Quality Indicator Reports for stroke and cardiovascular for 2016. To access your local report, please contact your Cardiovascular or Stroke Coordinator. Five complete years (2012-2016) of stroke data for Nova Scotia were included. The 2016 stroke report is the first to be generated from data collected in the new web-based stroke registry. New data cleaning and reporting processes were developed and will be applied to annual report preparations in subsequent years. The web-based registry allows for additional data to be collected and reported. In addition to the regularly reported indicators, the annual report now includes the proportion of stroke patients seen by a dysphagia team as well as intended and actual

discharge dispositions. In addition to the annual report, your Stroke Coordinator has access to an indicator generator report within the web-based registry that can provide statistics as up-to-date as local data entry.

Women's Heart Health Clinic for Nova Scotia

Over 90% of Canadian women have at least one risk factor for heart disease. Women often present with different cardiovascular symptoms than men, which may be challenging to diagnose, and thus are often missed and untreated. The Heart and Stroke Foundation released its 2018 Report, *Ms.Understood*, which addressed this situation in Canada. The report concluded that women's heart health issues are often under-diagnosed, under researched, and under treated.

To that end, Drs. Helen Bishop and Sharon Mulvagh established the Maritime Heart Center Women's Heart Health Clinic (MHC-WHHC) in October 2017 to increase awareness about women's heart health and disease in Atlantic Canada, and to improve diagnosis, treatment, and research. Women across Nova Scotia can now be referred to this specialized outpatient cardiac clinic designed for the assessment and care of female patients with a history of heart disease and/or major risk factors for heart disease. Women who come to the clinic will be seen by a team of health care professionals who will:

- Perform a heart health history and physical exam
- Provide education about symptoms, risk factors and disease conditions
- Provide recommendations on how to manage, treat, and prevent further heart disease
- Order additional testing if necessary
- Work with referring doctors to establish best treatment options and follow-up
- Provide information and invitation to participate in research studies when applicable

The MHC-WHHC accepts referrals from physicians for their patients with the following diagnoses:

- Spontaneous coronary artery dissection
- History of acute coronary syndromes in women under the age of 55
- Stress cardiomyopathy
- History of pregnancy complications including preeclampsia/toxemia and gestational diabetes
- Polycystic ovarian syndrome
- Certain autoimmune disorders
- Breast cancer patients undergoing chemotherapy/radiation therapy with cardiotoxicity concerns
- Women with ≥3 cardiovascular risk factors (hypertension, hyperlipidemia, smoking, diabetes, obesity) and/or positive family history of coronary artery disease (male first degree* relative <55, female first degree* relative <65,*=parent, sibling, or child).

To access the MHC-WHHC referral form, please click here.

Helpful Resources

AFib Resources & Tools
The National Stroke Association (US) has a website with infographics, fact sheets, and a shared decision-making tool for those with atrial fibrillation.

App for Upper Extremity Stroke Rehabilitation
ViaTherapy is an app with best practice and evidence-based recovery interventions for upper extremity stroke rehabilitation. Available on iTunes and GooglePlay.

NEW Canadian Journal of Cardiology Podcast
Visit www.onlinecjc.ca/ to download a new audio podcast each month, featuring author interviews, research highlights and more.

Publications

Jadhav PA, Desai SM, Kenmuir CL, et al. Eligibility for endovascular trial enrollment in the 6- to 24-hour time window analysis of a single comprehensive stroke center. *Stroke*. 2018; 49(4):1015-1017.

Urimubenshi G, Langhorne P, Cadilhac DA, et al. Association between patient outcomes and key performance indicators of stroke care quality: A systematic review and meta-analysis. *European Stroke Journal*. 2017; 2(4):287–307.

Innovative Ideas

Nudge Theory Increases Referral for Cardiac Rehabilitation

Nudges are based on behavioural science and careful testing, and are intended to influence behavior. A nudge is defined as a change in the way choices are presented that alters behavior without restricting choice. Nudges are done to encourage the use of evidence-based practices, should be transparent, and should align with the values of the person being nudged.[1]

In 2016, the Penn Medicine Nudge Unit, the world's first nudge unit formed within a health care system, was implemented. One of their nudge projects was conducted at the Hospital of the University of Pennsylvania.[2] They changed the referral process for cardiac rehabilitation to opt-out rather than opt-in, causing referral rates to jump from 15 percent to over 80 percent. The electronic health record system was set up to automatically identify patients eligible for cardiac rehabilitation and to notify staff. Staff discussed cardiac rehabilitation placement with identified patients prior to discharge.

1. Penn Medicine Center for Health Care Innovation. The nudge unit. 2018. [Retrieved April 16, 2018] http://nudgeunit.upenn.edu/about
2. Patel MS, Volpp KG, & Asch DA. Nudge units to improve the delivery of health care. 2018. *N Engl J Med*; 378:214-216

The Impact of Stroke Coordinators on the Delivery of Evidence-based Care

An observational study conducted in Australia[1] looked at the association between Stroke Coordinators (SC) and the delivery of evidence-based care and patient outcomes. Common components of the SC positions included: educating other interdisciplinary staff and patients, providing clinical leadership, and establishing and implementing protocols to ensure standardized evidence-based care. Other dimensions of the role reported by some include administrative, quality monitoring (e.g. audit or research), and managerial/budget responsibilities.

Patient demographics, adherence to processes of care, and in-hospital patient outcomes were collected through retrospective chart audits at hospitals with and without SCs. The analyses were limited to hospitals with a stroke unit to ensure that the potential effect of the SC role could be explored over and above the effect of stroke unit care. The study found that the presence of stroke coordinators was associated with reduced length of stay and improved delivery of evidence-based care. Patients treated in a hospital with an SC were more likely to spend over 90% of time on the stroke unit, receive rehabilitation therapy within 48 hours of initial assessment, and be given treatment based on rehabilitation goals as compared to those patients in a stroke unit hospital without an SC.

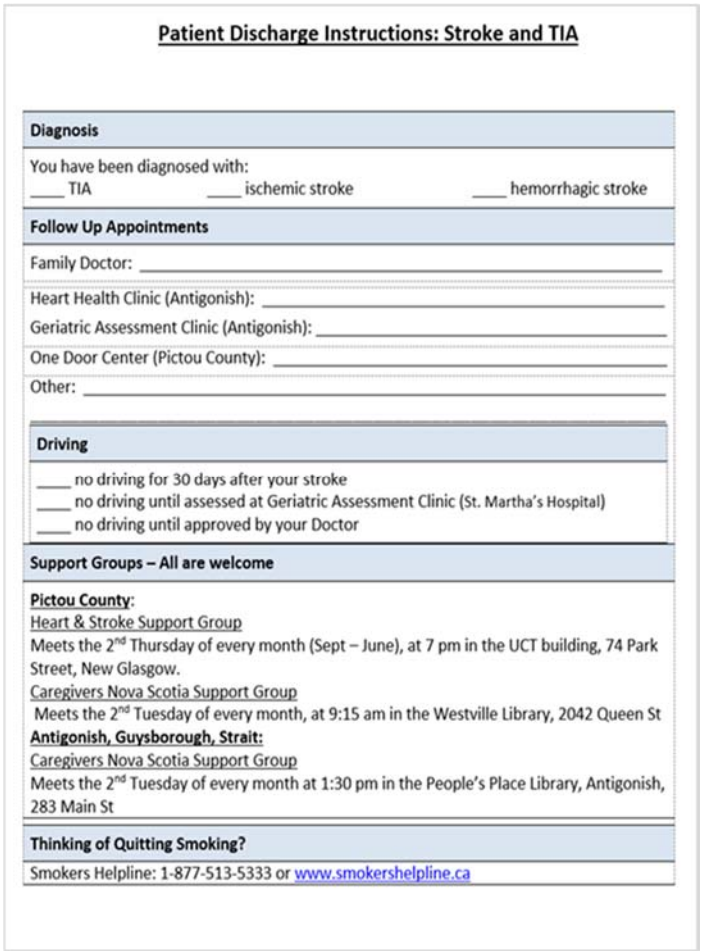
1. Purvis T, Kilkenny MF, Cadilhac DA, et al. Influence of stroke coordinators on delivery of acute stroke care and hospital outcomes: An observational study. *Int J Stroke* [published online November 24, 2017].

Patient Discharge Tool Pilot

The stroke team at St. Martha's Regional Hospital has developed a two-page tool (pictured below) to support a patient's discharge from the stroke unit. The tool provides key information and instructions for the patient prior to discharge from hospital. The information outlined in the tool are the patient's:

- Diagnosis
- Scheduled follow-up appointments
- Recommendations for driving
- Available local supports
- Notes from the stroke team
- Warning signs of a recurrent stroke or TIA
- Options for who to contact with any issues or questions

The team plans to pilot the tool for three months. For further information please contact michelle.macgrath@nshealth.ca.



Patient Discharge Instructions: Stroke and TIA

Diagnosis

You have been diagnosed with:
____ TIA ____ ischemic stroke ____ hemorrhagic stroke

Follow Up Appointments

Family Doctor: _____
Heart Health Clinic (Antigonish): _____
Geriatric Assessment Clinic (Antigonish): _____
One Door Center (Pictou County): _____
Other: _____

Driving

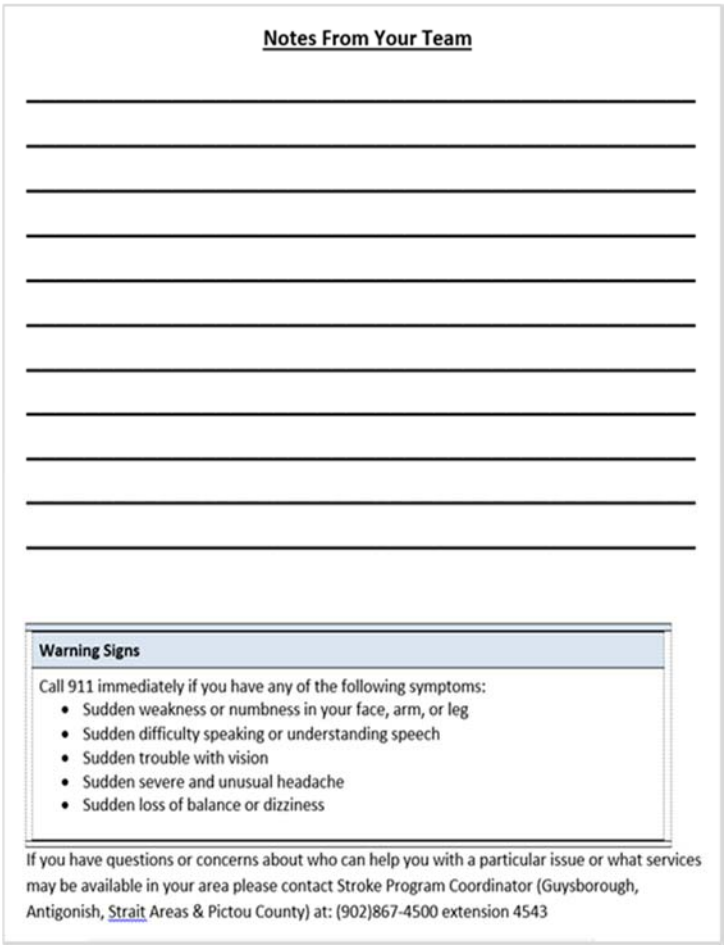
____ no driving for 30 days after your stroke
____ no driving until assessed at Geriatric Assessment Clinic (St. Martha's Hospital)
____ no driving until approved by your Doctor

Support Groups – All are welcome

Pictou County:
Heart & Stroke Support Group
Meets the 2nd Thursday of every month (Sept – June), at 7 pm in the UCT building, 74 Park Street, New Glasgow.
Caregivers Nova Scotia Support Group
Meets the 2nd Tuesday of every month, at 9:15 am in the Westville Library, 2042 Queen St
Antigonish, Guysborough, Strait:
Caregivers Nova Scotia Support Group
Meets the 2nd Tuesday of every month at 1:30 pm in the People's Place Library, Antigonish, 283 Main St

Thinking of Quitting Smoking?

Smokers Helpline: 1-877-513-5333 or www.smokershelpline.ca



Notes From Your Team

Warning Signs

Call 911 immediately if you have any of the following symptoms:
- Sudden weakness or numbness in your face, arm, or leg
- Sudden difficulty speaking or understanding speech
- Sudden trouble with vision
- Sudden severe and unusual headache
- Sudden loss of balance or dizziness

If you have questions or concerns about who can help you with a particular issue or what services may be available in your area please contact Stroke Program Coordinator (Guysborough, Antigonish, Strait Areas & Pictou County) at: (902)867-4500 extension 4543

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