

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.

NOVA SCOTIA HEALTH SITES PARTICIPATING IN ATLANTIC CANADA RESEARCH PROJECT TO IMPROVE ACCESS AND EFFICIENCY OF STROKE TREATMENT

The Atlantic Canada Together Enhancing Acute Stroke Treatment (ACTEAST) Project aims to improve access and efficiency of treatment for ischemic stroke patients across Atlantic Canada. The project is being led by Dr. Noreen Kamal, P.Eng. Ph.D., an Assistant Professor in the Department of Industrial Engineering at Dalhousie University.

Nova Scotia will be the first of the four Atlantic Canadian provinces to participate in the step-wedge trial design. Sites in Nova Scotia capable of providing alteplase will participate in the study from November 2020 to April 2021. Each site has assembled an interdisciplinary team (e.g., physician, Stroke Coordinator, ED nurse, diagnostic imaging representative, administrator). The intervention for the study is modeled after the Institute for Healthcare Improvement's (IHI) Improvement Collaborative. All enrolled sites will cycle between alternating Learning Sessions and Action Periods. During the Learning Sessions, participants will hear from peer teams about how access and efficiency can be improved and each improvement team will plan their changes. During the Action Periods, sites will test their planned changes, as well as engage in webinars, email discussions, and data collection, audit and feedback.

The objectives for ACTEAST are to:

- Increase the proportion of ischemic stroke patients that receive either alteplase or EVT by 5%;
- Reduce the Door-to-Needle (DTN; hospital arrival to start of alteplase treatment) times to a median of 30 minutes;
- Reduce the door-to-groin-puncture time to a median of 60 minutes for patients treated with EVT; and
- Reduce Door-in-Door-Out (transfer efficiency) for patient being transferred for EVT to a median of 50 minutes.



These objectives are aligned with the Canadian Best Practices for Stroke Care that indicate that a median DTN time should be 30 minutes. Preliminary 2019 data from CVHNS' Provincial Stroke Registry shows Nova Scotia's median DTN time is 54 minutes.

There are a number of anticipated benefits of this study. It is estimated that an additional 7-15% of ischemic stroke patients will be functionally independent. This means an estimated 260 to 550 more patients every year in Atlantic Canada will be able to return home after their stroke. These benefits will be especially apparent in rural and remote communities, which are presently underserved. There will be significant cost avoidance to the health system across Atlantic Canada if more patients can access efficient treatment. It is estimated that approximately \$7.8 million per year in health care costs will be avoided across Atlantic Canada, based on an additional 260 patients being able to return home with no disability. This significant potential rate of return on a relatively small investment in a short time frame is unsurpassed by any treatment that is currently available to patients.

ACTEAST's intervention is similar to methodology used in an Alberta study led by Dr. Kamal and Dr. Michael Hill. The goal was to reduce DTN times to a median of 30 minutes across 17 stroke centres. The project resulted in an increase in the proportion of ischemic stroke patients that received thrombolytic (9.35% in the pre-period to 15.73% in the post-period), and reduced median DTN time from 70 minutes to 39 minutes. Out of the ischemic stroke patients that were treated with alteplase, 15% more patients were discharged home, and 12% more patients were able to spend 70 days or more at home in the first 90 days after their stroke.

If you would like to learn more about ACTEAST, please visit the [project's website](#), contact Dr. Kamal at noreen.kamal@dal.ca, or follow on Twitter [@ACTEAST_stroke](#).

Learning Opportunities



Canadian Cardiovascular Congress,
October 21-24, 2020. Virtual.
<http://cardiocongress.org/en/index.html>

The Canadian Association of Cardio-vascular Prevention and Rehabilitation Fall Conference, October 23-25, 2020. Virtual. <https://cacpr.ca/2020-Fall-Conference>

European Stroke Organization & World Stroke Organization Conference, November 7-9, 2020. Virtual. <https://eso-wso-conference.org/>

Virtual Advanced Arrhythmia Symposium 2020, November 26, 2020. <https://medicine.dal.ca/departments/core-units/cpd/conferences.html>

94th Annual Dalhousie Fall Refresher, November 27-28, 2020. Halifax, NS (in person and virtual) <https://medicine.dal.ca/departments/core-units/cpd/conferences.html> or gillian.reid@dal.ca

Institute for Healthcare Improvement (IHI) Forum, December 6-9, 2020. Virtual. <http://www.ihl.org/education/Conferences/National-Forum/Pages/default.aspx>

13th Annual Ottawa Conference: State of the Art Clinical Approaches to Smoking Cessation, January 21-22, 2020. Virtual. <https://ottawamodel.ottawaheart.ca/ottawa-conference>

International Stroke Conference, February 10-12, 2021. Denver, Colorado, US (in person and virtual) <https://exhibitatsessions.org/international-stroke/>

CVHNS News

Improving Door-to-Needle Time (DTNT) in Collaboration with Emergency Program of Care

In October 2019, CVHNS was invited to a meeting of the Emergency Program of Care's quality group to present data on key performance indicators related to improving DTNT for STEMI and stroke. The group provided input on relevant indicators and preferred presentation of the data. Since March 2020, CVHNS has been providing quarterly reports on site, zone and provincial performance to the Zones through the Directors for the Emergency Programs of Care. The data has also been posted on the Emergency Program of Care's intranet site. Stroke Coordinators and CVHNS Cardiovascular (CV) Coordinators across the province are helping to facilitate local quality initiatives; CVHNS is available to assist/coordinate provincially. One of our next steps is to collaborate with Performance and Analytics on data visualization using Tableau. Programming will be complete at the end of October that will allow efficient access to de-identified, individual-level data in the CVHNS STEMI and Stroke Registries for Performance and Analytics to generate visual dashboard reports.

STEMI Door-to-Needle Time Simulation Project

CVHNS CV Coordinators have identified some of the common reasons for delays in lytic treatment for STEMI through chart reviews. Some of these are related to patient factors. Other delays may be related to processes, that if modified, could result in further improvements in DTNT. CVHNS is working in collaboration with Project Services & Performance Improvement to determine if industrial engineering simulation methodology can identify the impact of various process changes on DTNT for STEMI patients who receive lytic in Emergency. Two sites have been recruited to participate in the work: Yarmouth and Truro. If successful, the results of this work will be disseminated across Nova Scotia and elsewhere.

Exploring Services for Acquired Brain Injury

CVHNS and the Provincial Acquired Brain Injury (ABI) Network are working together to gain insight into the types of hospital and community-based services that are available to individuals with ABI across the province. This will be done via surveys for health care providers and leaders across Nova Scotia Health and the IWK. The health professional survey is live now. With this survey, we are seeking to capture a snapshot of inpatient and ambulatory services available for individuals with an ABI and identify the learning needs and interests of staff related to ABI care. If you provide care for individuals with ABI please complete our [short survey](#), which is live until October 19, 2020!



**PLEASE TAKE
OUR SURVEY**

Policies for Stroke Care

CVHNS led the development of two provincial stroke policies under the direction of Debbie Burris, Senior Director Acute Medicine. The policies, Access to Stroke Unit and Acute Stroke Treatment, were recently reviewed by stakeholders for feedback. Thank you to everyone who took the time to provide feedback. The next steps are to review the feedback, make any necessary edits, and re-submit to the Policy Office. Keep an eye out for these policies to be released.

Online Stroke Education Update

Nursing staff that work on stroke units across the province continue to participate in the Canadian Hemispheres 2.0 Stroke Competency Series online course under CVHNS' license. This is the third offering of the series by CVHNS, after a successful pilot in 2016 and a provincial roll-out in 2017. Fifty participants signed up to take the course. To date, over 70% of this year's participants have successfully completed multiple modules (two or more) in the course.

Catch up on any issues you may have missed. Past issues of the CVHNS bulletin can be found online [here](#).

Endovascular Thrombectomy (EVT) Provincial Protocol

A provincial protocol for referring a stroke patient to the QEII Health Sciences Centre for EVT was developed by Neurology, Neuroradiology, and Emergency Health Services. CVHNS facilitated two online learning sessions in August about the protocol, delivered by Dr. Steve Phillips, Stroke Neurologist, QEII Health Sciences Centre. A recording of the session can be viewed [here](#). For a copy of the protocol, contact your local Stroke Coordinator, or Allison Stevens, CVHNS Program Consultant at allisonl.stevens@nshealth.ca.

STEMI Case Reviews at Local Sites: Engaging Staff to Improve Door-to-Needle Time

As part of the ongoing commitment to improve door-to-needle time for STEMI patients, sites around the province are initiating processes to engage with local frontline staff. Under the direction of the Zone Directors for the Emergency Program of Care, two working groups have been set up to review selected STEMI cases and generate ideas for reducing time to the administration of thrombolytic. The groups are facilitated by one of the two Cardiovascular (CV) Coordinators within the Zone.

In the Antigonish/Guysborough area, the CV Coordinator has held several site-specific meetings and two meetings with a broader working group. The Stroke Coordinator is also involved. During meetings, STEMI and stroke cases are reviewed and opportunities for improvements are discussed. A STEMI simulation for the smaller sites is being planned for the end of October.

In Yarmouth, a STEMI Rounds group has been created consisting of several frontline nursing staff from the Emergency Department. During meetings, which are coordinated by the CV Coordinator, recent local STEMI cases are reviewed. Staff are very engaged in the process, steering the discussion and

generating improvement ideas to test out in practice.

Three other sites are planning to form similar groups over the next several months. Two of these sites are also planning STEMI simulations for Emergency staff. While it is too early to determine the impact of this work, reviewing and discussing cases provides an opportunity to actively engage staff in generating, testing, and championing ideas for improvement.

Helpful Resources

Botly LCP, Lindsay MP, Mulvagh SL, Hill MD, Goia C, Martin-Rhee M, et al. [Recent trends in hospitalizations for cardiovascular disease, stroke, and vascular cognitive impairment in Canada.](#) *Can J Card.* 2020;36:1081-1090.

Elkind MSV, Boehme AK, Smith CJ, Meisel A, & Buckwalter MS. [Infection as a stroke risk factor and determinant of outcome after stroke.](#) *Stroke.* 2020;51:3156-3168.

Kaesmacher J, Maamari B, Meinel TR, Piechowiak EI, Mosimann PJ, Mordasini P et al. [Effect of pre- and in-hospital delay on reperfusion in acute ischemic stroke mechanical thrombectomy.](#) *Stroke.* 2020;51:2934-2942.

Lo CCW, Lo ACQ, Leow SH, Fisher G, Corker B, Batho O, et al. [Future cardiovascular disease risk for women with gestational hypertension: A systematic review and meta-analysis.](#) *J Am Heart Assoc.* 2020;9(13):e013991.

Margolis K, Dehmer SP, Sperl-Hillen J, O'Connor PJ, Asche SE, Bergdall AR et al. [Cardiovascular events and costs with home blood pressure telemonitoring and pharmacist management for uncontrolled hypertension.](#) *Hypertension.* 2020;76(4): 1097-1103. [Full text article available via Nova Scotia Health [Library request](#)]

Nova Scotia College of Nursing. 2020. Medication guidelines for nurses. Retrieved August 10, 2020 from <https://www.nscn.ca/professional-practice/practice-support/practice-support-tools/medication/medication-guidelines-nurses>

Vadiveloo M, Lichtenstein AH, Anderson C, Aspary K, Foraker R, Griggs S, et al. [Rapid diet assessment screening tools for cardiovascular disease risk reduction across healthcare settings: A scientific statement from the American Heart Association](#) [published online August 7, 2020]. *Circ Cardiovasc Qual Outcomes*.

PCNA Triglycerides and Cardiovascular Risk Provider Tools

These [tools and handouts](#) are for learning about the link between CVD and Triglycerides and accepted treatments for reducing patients' CVD risk.

Virtual Learning - Anytime, Anywhere!



- Apex Innovations [National Institutes of Health Stroke Scale \(NIHSS\) module](#)
- Atlantic Cardiovascular Society [2020 Clinical Day in Cardiology Online](#)
- Heart & Stroke Foundation [webinars](#)
- IHI Open School Quality and Safety [courses](#)
- The University of Edinburgh Acute CTA for Thrombectomy in Stroke (ACTATS) [training tool](#)

Innovative Ideas

Stroke Rounds go Virtual in Yarmouth

When COVID-19 arrived in Nova Scotia in mid-March, the Stroke Team at Yarmouth Regional Hospital barely skipped a beat. Converting from twice-weekly in-person rounds to virtual meetings was achieved through the use of Skype and ZOOM platforms. This provided team members the opportunity to connect from their offices, homes, or clinical areas. There was immediate benefit to this format as it allowed for screen sharing of brain imaging (e.g., CT and MRI) - an improvement from the former practice of viewing a small computer monitor as a large group. Virtual meeting invitations are extended to families and, when appropriate, patients utilized a Nova Scotia Health-issued iPad to join rounds.

As with any new technology, there were learning curves and the odd glitches to overcome. Also, some elements of stroke rounds had to be placed on hold due to gathering restrictions in clinical areas, such as the initial bedside patient visit and assessment. However, through all of this, one thing has remained – continuity of care. It is best described by a Yarmouth stroke team member, who stated:

Imagine your life turned upside-down by a stroke in the midst of a global pandemic that has seemingly brought the world to a standstill. How reassuring would it be to discover that all the moving parts of your stroke team are still moving full steam ahead to support your needs and maximize your recovery? I'd like to think this would be both a comfort and a powerful motivator as patients embark on their stroke rehab journey!

For additional information, please contact Kelly Goudey, RN, Stroke Coordinator, at kelly.goudey@nshealth.ca.



New Stroke Coding Course: Reviews by Health Information Management Professionals

The Canadian Institute for Health Information (CIHI) released a new stroke coding course in April 2020 called 5003E - Different Strokes Need Different Codes. The course encourages coders to choose the most accurate and specific stroke code whenever possible and reduce the use of I64 *Stroke, not specified as haemorrhage or infarction*. The course includes three levels: basic, intermediate, and complex, and uses case studies to instruct how to assign accurate stroke codes. The course is free to access from [CIHI's Learning Centre](#); [registration](#) is required.

The course qualifies for continuing professional education (CPE) credits with the Canadian College of Health Information Management (CHIMA). CHIMA asked three members to review the course. The reviews were provided from a variety of perspectives: [A coding instructor](#), [a NACRS coder](#), and [a coder with a rural perspective](#). Click on each to learn more.



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