

# Cardiovascular Health and Stroke Strategic Clinical Network: Healthy hearts and brains for all Albertans

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**V**ascular diseases, including heart disease and stroke, affect more than 300 000 people in Alberta.<sup>1</sup> Forty percent of people admitted to hospital with a heart condition, stroke or vascular cognitive impairment will be readmitted at least once more for another similar event.<sup>2</sup> In 2015/16, 6144 inpatient discharges followed admission for myocardial infarction, which carries an annual cost of more than \$80 million.<sup>3</sup> Stroke affects 5000 Albertans each year: 1 in 6 patients with stroke die within the next year, and 90% of those who survive have a disability. Alberta spends \$370 million caring for patients with stroke in the first postevent year alone.<sup>4</sup>

Despite commonalities in risk factors, heart disease and stroke are discrete conditions with different foci for care. As such, the Cardiovascular Health and Stroke Strategic Clinical Network (CvHS SCN; [www.ahs.ca/cvhsscnc](http://www.ahs.ca/cvhsscnc)) successfully established independent yet collaborative initiatives by leveraging previous work started by the Alberta Provincial Stroke Strategy, Alberta Cardiac Access Collaborative and the Cardiac Clinical Network. The CvHS SCN retained many elements from these previous initiatives, along with subject-matter-expert members, allowing advancement of provincial-scale work. These members now make up the CvHS SCN's core committee and 16 working groups, which function as a participatory democracy assisting the network to identify and determine focussed priority projects. This is done by using existing data and evidence to evaluate current health status, clinical practices and system performances summarized in a Transformational Roadmap (Appendix 1, available at [www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190592/-/DC1](http://www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190592/-/DC1)).<sup>5</sup>

The Transformational Roadmap is supported by 3 strategic directions (Appendix 1) that were chosen through a series of targeted consultations and agreed upon by the core committee.<sup>5</sup> Throughout its evolution, the CvHS SCN had successes and faced barriers, some of which are highlighted in the following initiatives: Stroke Action Plan, Quality Improvement & Clinical Research Alberta Stroke Program and Vascular Risk Reduction.

The Stroke Action Plan, an innovative model that was designed and tested in an implementation study to improve access to high-quality stroke care for all Albertans, focussed on developing new standards of care for small urban and rural sites based on Canadian Stroke Best Practice Recommendations

### KEY POINTS

- The Cardiovascular Health and Stroke Strategic Clinical Network (CvHS SCN) launched in 2012 as one of the inaugural SCNs.
- Supported by a core committee, patient and family advisors and 16 working groups, the CvHS SCN focuses on supporting the health of Albertans through prevention, collaborative partnerships, research and innovation in cardiac and stroke care.
- The SCN aims to improve clinical outcomes and patient and provider experiences by moving best research evidence into clinical practice.
- The CvHS SCN intends to leverage its success in managing acute stroke to expand emerging best practices in acute cardiac care, particularly within small urban and rural centres in Alberta.

(<https://strokebestpractices.ca/recommendations>). Before this program was established care in stroke units was available only in select large urban facilities. Expedited discharge of patients with stroke to receive in-home rehabilitation from Stroke Early Supported Discharge teams was available only in Edmonton and Calgary. To combat this, the CvHS SCN adopted a learning collaborative methodology based on the suggestions of the Institute of Healthcare Improvement, which regularly brought sites together for planning, implementation and data review.<sup>6</sup> A detailed evaluation using administrative and manually collected metrics determined a site's success, which was defined as long-term sustainability and process improvements, resulting in reduced patient stays in hospital (Appendix 1), with earlier discharges to home (more than 3377 bed-days saved); 28% reduction in admissions to long-term care (from 60 to 43 patients); and 95% level of patient satisfaction with services provided.<sup>6</sup> The Stroke Action Plan lowered 30-day in-hospital mortality from stroke by 1% while providing cost-effective care as shown by a health economic evaluation of the direct system costs for this model.<sup>7</sup> Through this project, the CvHS SCN learned that local data used by sites can be a powerful tool to reinforce success and identify gaps; success at a site level was contingent on support and buy-in from all levels of management and provider champions; and sustainability is contingent on a written, agreed-upon commitment to maintain stroke services after the project was completed.

With receipt of an Alberta Innovates Collaborative Research and Innovations Opportunities Team grant, the Quality Improvement & Clinical Research Alberta Stroke Program was established to improve stroke outcomes in Alberta through rapid evaluation of clinical and neurovascular imaging combined with fast treatment. Leveraging the Stroke Action Plan/Institute of Healthcare Improvement learning collaborative process, in early 2019, the Quality Improvement & Clinical Research Alberta Stroke Program published work showing improved stroke treatment time at sites across the province.<sup>8</sup> Specifically, from April 2015 to September 2016 the overall median door-to-needle time dropped from 70 to 39 minutes in 17 health care centres in Alberta. During planning and implementation, the SCN found that working collaboratively across multiple sites with local team members from each department, and applying local data to help drive quality-improvement decisions, was instrumental for success.

The CvHS SCN established 6 Vascular Risk Reduction collaborative projects within 8 Alberta health care organizations and 1 industry partner, and with researchers from Campus Alberta, worked to identify and manage people at risk for vascular disease. Of the 6 projects, 3 are highlighted herein. The first, the Alberta Screening and Prevention program, involved more than 1 647 600 patients in Alberta and 1373 primary care physicians to achieve a 49% increase in screening for cardiovascular (CV) risk. The second, a community pharmacist case-finding and intervention (the Alberta Vascular Risk Reduction Community Pharmacy Project) resulted in a relative reduction of participants' estimated CV risk by 21% in just 3 months. The project showed an efficacious and accessible new approach to community-based reduction in risk of CV disease with high patient and provider satisfaction.<sup>9</sup> The third was a demonstration project that partnered with a local newsprint company to screen for CV risk and early management at the work site. The project involved on-site screening for risk factors of CV disease, point-of-care testing and case management that was offered to those at high risk by local pharmacists with prescribing privileges. Of the employees who were screened, 41% were unknowingly at moderate to high risk for CV disease and thus eligible for follow-up.

Despite the overall success of the described initiatives, there were some common challenges: difficulties managing agreed-upon project scope, lack of initial operational and provider buy-in, lack of timely involvement of patient and family partners in project planning, and single versus multisite focus. For example, the effect of expanding the scope of the Vascular Risk Reduction initiative resulted in a deficit in human resources and a lack of time to complete the scale and spread of all 6 projects for the duration of the funding cycle. In addition, legal and logistical matters that arose between Alberta Health Services and 1 private industry partner involved in the worksite initiative resulted in substantial delays to identify a partner worksite. Therefore, the CvHS SCN was not able to complete the project as initially planned because of loss of time and project funds.

The CvHS SCN's activities highlight a real opportunity to reduce deaths from vascular disease and stroke in Alberta, help people stay healthier for longer, reduce initial and recurrent admissions to hospital, and address health inequities. The value

of the CvHS SCN lies in its ability to work and exist as an integrated team of patient and family partners, operational leaders, providers and researchers who are mining the appropriate level of expertise and collaboration daily to provide evidence-driven, standardized CV disease care in Alberta.

The CvHS SCN intends to leverage its success in managing acute stroke to expand best practices in acute cardiac care, particularly within small urban and rural centres in Alberta. Much of the SCN's work to date has focussed on the acute stage of care; therefore, incorporating research and innovation through the other parts of the care continuum to address all of the patient journey will be important.

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