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STRATEGIC CLINICAL NETWORKS IN ALBERTA

Accelerating health system improvements through partnerships and evidence-based practice

Alberta Health Services

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SUPPLEMENT

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COVER

Can multi-stakeholder Strategic Clinical Networks (SCNs) improve health systems for users? This special supplement spotlights Alberta Health Service's SCNs to serve as a resource for policy-makers and clinicians who are interested in this innovative approach to health system optimization.

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Alberta Health Services

Strategic Clinical Networks in Alberta

Accelerating health system improvements through partnerships and evidence-based practice

2016–2018

INNOVATION

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Strategic Clinical Networks in Alberta

Enabling health system improvement

Embedded within Alberta's province-wide integrated health care system, Strategic Clinical Networks™ (SCNs™) are:

COLLABORATIVE
multistakeholder teams of clinicians, patients, health leaders, community partners, and others.

FOCUSED
on specific areas of health.

PROVINCIAL
teams work together across geographical, organizational and institutional boundaries.

GET EVIDENCE INTO CARE

SOLVE HEALTH CHALLENGES

IMPROVE OUTCOMES, QUALITY, SAFETY AND VALUE

GUIDED by evidence, data, patients' and families' experiences, clinical knowledge, strategic health priorities.

10 YEARS OF HEALTH SYSTEM INNOVATION

2009

Formation of Alberta Health Services, Canada's first province-wide, health system. It now serves 4.3 million people.

2012–2019

16 SCNs operating across the province. Examples include:

- Population, Public and Indigenous Health
- Surgery
- Cardiovascular Health and Stroke
- Digestive Health
- Cancer
- Addiction and Mental Health

COLLECTIVE IMPACT

- ✓ Tackle issues that matter
- ✓ Rigorously test health innovations
- ✓ Advance initiatives that improve health and patients' experiences
- ✓ Improve health service delivery and utilization
- ✓ Spread and sustain improvements on a provincial scale

VALUE OF NETWORKS

- ✓ Integrated
- ✓ Evidence based
- ✓ Strategic
- ✓ Transformative

POSITIVE RETURN ON INVESTMENT FOR ALL ALBERTANS*

Every $1 invested in SCN activities produced **$1.54 in savings**

143 856
hospital bed-days avoided

$62.5 M
in net health system savings (e.g., costs avoided)

*Interim analysis based on 15 SCN projects completed between 2012 and 2018.

LETTER TO READERS

We are pleased to present this supplement, "Strategic Clinical Networks in Alberta: Accelerating health system improvements through partnerships and evidence-based practice," which highlights the work of Alberta's 16 Strategic Clinical Networks™ (SCNs™). The SCNs operate with a provincial mandate to identify gaps in care, prioritize areas for improvement and translate evidence into practice. Each network includes clinicians, patients, operational leaders, researchers and other stakeholders, who work together to advance health system innovation and improvement. Together, their work supports a learning health system and appropriate, high-value care for every Albertan.

This series of articles illustrates how clinical networks are helping to improve health outcomes and accelerating innovation across Alberta's health system, describing some of the projects and processes that the networks have developed; lessons learned; and the priorities and opportunities they see to improve health, care and value across the health spectrum.

Each network is fueled by teamwork and collaboration, and we are proud to acknowledge the many partners who have contributed to this work. To date, 150 patient and family advisors and more than 10 000 Albertans have participated in the networks and contributed their expertise. These participants include front-line providers, operational leaders, primary care networks, researchers and project leads, industry partners, Indigenous peoples, patients and families, and others across the province who have served as committee and working group members, advocates and champions. We thank those who have been an integral part of this work over the past 7 years and gratefully acknowledge their contributions.

We also acknowledge the leadership, direction and support of Alberta Health; the Alberta Health Services Executive Leadership Team; our patient partners; and our health, community and academic research partners, including faculty and researchers at Alberta's universities. We are also grateful for the support of our funding partners at Alberta Innovates, the Canadian Institutes for Health Research, health foundations and others.

Finally, we congratulate the SCN Leadership Team for their work in preparing this supplement and recognize the authors and contributors who have persevered to successfully chart a path forward, translate evidence into practice and advance health innovation on a provincial scale.

It has been incredibly rewarding to be part of the SCNs' growth, evolution and learning thus far, and we look forward to continuing to work together to shape the future of sustainable, high-quality health care in our province.

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Alberta's Strategic Clinical Networks:

Enabling health system innovation and improvement

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Listen to a CMAJ podcast about the Strategic Clinical Networks at https://soundcloud.com/cmajpodcasts/ahs

In April 2009, Alberta Health Services (AHS) became Canada's first province-wide health system.[1] Today, AHS delivers health services to more than 4.3 million people,[2] in every part of the province, and remains committed to providing patient-focused, appropriate and high-quality care that is accessible and sustainable for all Albertans.[3,4]

The decision to move to a fully integrated health system marked the beginning of a decade of health system transformation in Alberta. However, system innovations of this size have no template, and continuous adaptation and learning have been part of AHS' journey to date. In evolving to a province-wide health system, Alberta's provincial health authority has worked closely with the provincial government to align policies, plans and priorities, and to develop strategies that address system-wide pressures and needs and support continuous improvement and evidence-informed decision-making.[1,5]

In 2012, AHS established Strategic Clinical Networks (SCNs) to support these objectives. These multistakeholder teams comprise clinicians, patients, operational leaders and other stakeholders who work together to advance health system innovation and improvement (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.191232/-/DC1). Each network uses data and evidence to identify gaps in care, prioritize areas for improvement, develop and evaluate strategies, and implement solutions that improve health outcomes, access, patient and family experiences, and delivery of health services.[5]

Clinical networks have existed system-wide in England, Scotland and parts of Australia for nearly 20 years. Although their role and structure within health organizations varies, clinical networks focus on bringing research, evidence and knowledge into clinical practice and actively supporting improvement, innovation and learning in the health system. Typically, clinical networks concentrate on complex issues and challenges that require integrated solutions (e.g., unwarranted variation in care, excessive wait times and health system sustainability).[6,7]

Clinical networks provide a unique opportunity for operational leaders and managers, clinicians, researchers and other stakeholders to work across geographical, organizational and institutional boundaries on an ongoing basis, to rigorously test changes in practice and implement proven solutions. Working as integrated teams, networks are able to co-design solutions that incorporate the best available evidence, clinical knowledge, patient and family experiences, and input from diverse stakeholders and communities. This bottom–up approach provides an alternative to health system change being driven solely from the top down, which can have a negative effect on clinician engagement and innovation.[8]

Alberta's SCNs use a collaborative partnership model in which members bring different skills, experiences and perspectives, and work together to design strategies and solutions that improve outcomes and address priority needs. The networks work closely with clinicians and operational leaders across the province, but their scope and membership extends beyond AHS and includes community and health partners, industry, research institutes, policy-makers and citizens. In this way, the networks

KEY POINTS

- Strategic Clinical Networks (SCNs) are a key resource for Alberta's health system, help to get evidence into practice, and improve outcomes and health care sustainability on a provincial scale.
- The SCNs provide a structure for patients and families, policy-makers, clinicians and researchers to collaborate across geographical and institutional boundaries and co-design solutions that address priority health challenges and support transformational change.
- Alberta's SCNs are embedded within a single, province-wide health care system, which enables wide-scale implementation of strategies proven to reduce unwarranted variation and improve care, clinical appropriateness and health outcomes.
- The networks support a learning health system by bringing together people, research and innovation, and are delivering a positive return on investment in terms of cumulative savings in the health system.

help connect AHS to partners across the health spectrum.[3,9] This "network model" encourages broad-scale input, partnerships and 360-degree thinking. It also provides a mechanism to encourage ongoing communication, integration and alignment of priorities, and best use of health resources.

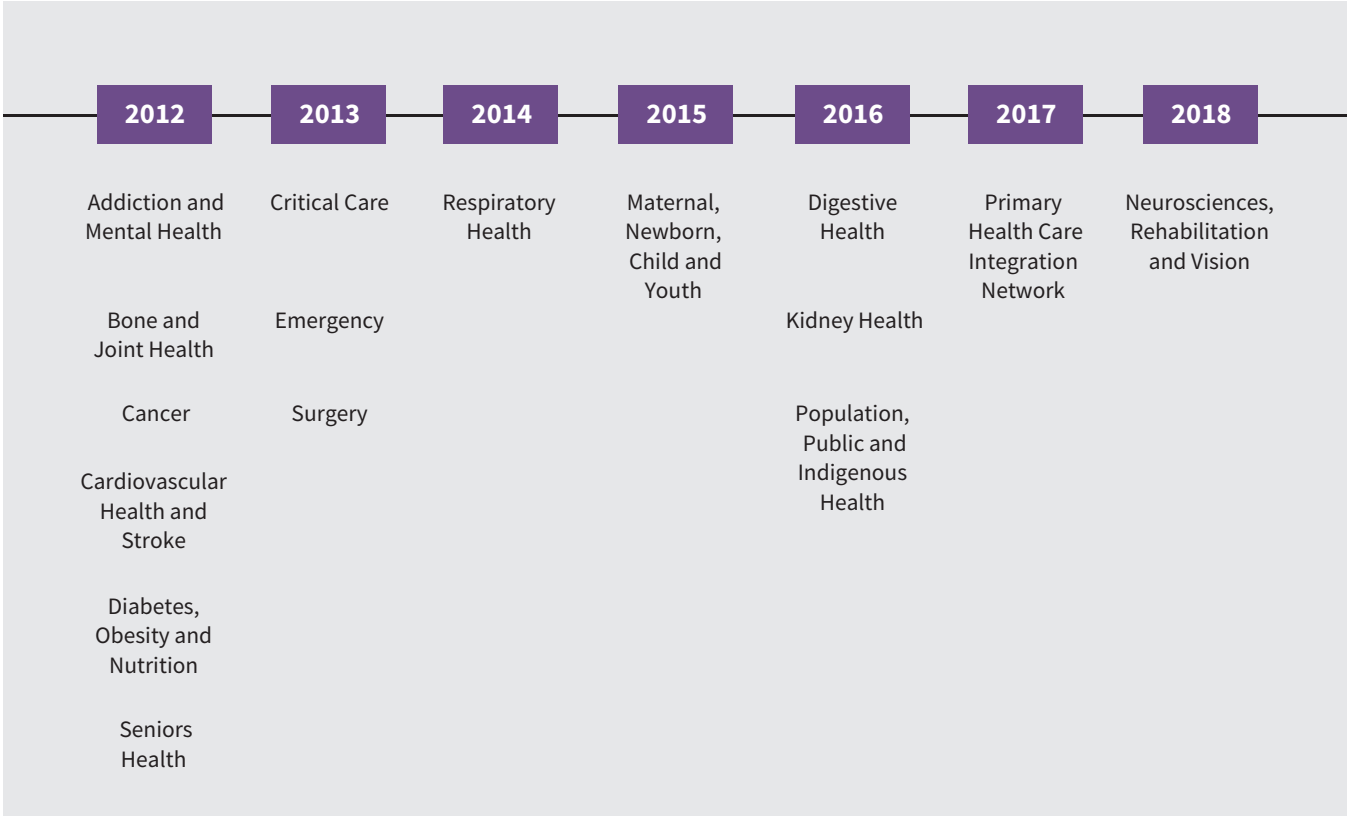
Alberta's SCNs are embedded within a province-wide health system. This structure is advantageous because it enables stakeholders to collaborate across regions, address system-wide challenges and priorities, test solutions in relevant settings (e.g., remote and rural communities) and then, where appropriate, spread and implement practice changes on a provincial scale. A provincial system, including integrated zones, minimizes barriers to collaboration across the system and facilitates sharing of information and implementation of health innovations and quality improvements on a system level.[6] Although not responsible for health policy or decision-making, the SCNs work alongside operational leaders to support these functions, suggest actions based on evidence, evaluate outcomes and encourage appropriate use of health resources.

Alberta launched its first SCNs in 2012 with an emphasis on engaging patients, families and the public, and rigorous adherence to implementation science and evidence-based practice.[5] Over the past 7 years, the networks have matured and evolved in scope and experience. As they have gained traction, and as provincial capacity allowed, they have expanded to other areas of health (see figure) and have begun tackling increasingly complex challenges that span patient populations and health disciplines such as pain, chronic disease management, transitions in care and access to specialist care.[3,6]

There are now 16 SCNs in Alberta. Each network is multidisciplinary and operates with a provincial scope and mandate.[9] Most networks focus on a specific area of health (e.g., cancer and digestive health); some cross multiple disease areas (e.g., diabetes, obesity and nutrition) or support specific populations (e.g., Indigenous health and maternal, newborn, child and youth health). Others focus on high-cost, high-utilization areas (e.g., surgery and emergency care) or align with provincial programs (e.g., seniors' health and addiction and mental health).

Each SCN identifies strategic priorities specific to its network and patient population but is guided by a common mission to improve the health of Albertans by bringing together people, research and innovation. Their work aligns with the vision, mission and values of AHS, and supports the operational priorities and business plans of AHS and the Government of Alberta. Alignment with operational goals, the AHS Executive Board and the Government of Alberta helps ensure efficient use of resources and leverages the support, oversight, leadership and executive sponsorship these agencies can provide. All networks operate with a clear understanding that patients and families should be actively involved in setting priorities and co-designing solutions that improve health outcomes and patient and family experiences.

The SCNs have become an important resource for Alberta's health system. Their value lies in their ability to work together as integrated teams to address challenges, advance innovation and improve health outcomes on a provincial scale. Appendix 2 (available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.191232/-/DC1) summarizes the mandate and some of the



Alberta's Strategic Clinical Networks (2019).

key structures and processes Alberta's SCNs use for priority setting, patient engagement and project execution. These processes and structures are helping the SCNs advance innovation within Alberta's health system and build momentum for future health system improvement.[5]

The networks and their operational partners have also provided a solid return on investment for all Albertans. The current annual budget for all 16 SCNs is $17 million for core infrastructure and $16 million for projects. An interim analysis of cumulative SCN costs, benefits and value (based on 15 projects that were started between 2012 and Mar. 31, 2018) showed estimated total gross savings of $178.74 million and a cumulative return on investment of $1.54 for every dollar invested.[10] This return is based on monetary benefits and reflects direct cost savings ($16.41 million) as well as cost avoidance through improvements in utilization of health services (e.g., reduced length of stay and readmissions to hospital). To date, it is estimated that these improvements have resulted in more than 143 800 hospital bed-days avoided (the equivalent of operating 13 medical inpatient units for 1 year).[10] The SCNs have also delivered substantial value through their contributions to patient care, safety and experience; improved health outcomes; and development of clinical pathways. Since 2012, the SCNs have also led or been a major collaborator in clinical research that has brought more than $65 million to Alberta from outside the province. While a clear benefit for Albertans, this also enables the SCNs to align the efforts of academic researchers with network research priorities. Specific outcomes and projects are profiled in a 2019 retrospective report,[6] which also highlights critical partnerships that enabled this work.

The articles in this supplement describe this work and reflect on the SCNs' experiences to date, their strategic priorities, challenges, lessons learned, and some of the processes and partnerships that have enabled progress in specific areas of health. They show the growth and development of SCNs from launch and initial start-up phases to priority setting and project execution and implementation. They describe the importance of aligning priorities with operational leaders, rigorously testing and evaluating outcomes and innovations, and using evidence to spread and scale solutions provincially. The articles also highlight the partnerships that have enabled this work, the importance of involving patients and families, and the benefits of this approach. In addition, they provide examples that show how strong linkages with clinical operations, academic researchers and community partners have enabled the successful spread and scale of quality improvements and health innovations.

Alberta Health Services is working to embed evidence into clinical practice and accelerate its progress as a learning, sustainable and high-performing health system. Informed, active involvement of all stakeholders is essential to this process, and SCNs provide a critical resource to achieve these goals.

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COMMENTARY

Patient and family engagement in Alberta's Strategic Clinical Networks

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The Patient First Strategy of Alberta Health Services (AHS)[1] mandates that listening to patients, families and caregivers and valuing their input is essential to develop solutions that support health and well-being in the province.[2] Evidence suggests that patient engagement can lead to better health outcomes, contribute to improvement in quality and patient safety, and help control costs of health care.[3] As such, Alberta's 16 Strategic Clinical Networks (SCNs) have embraced patient engagement as a foundational principle for establishing networks: about 150 patient and family advisors have been embedded within the networks. These volunteer advisors are seen as experts grounded in the patient experience; they serve as educators and mentors to other patients and families; and they represent all communities, ages, genders, cultures and geographical locations.

Each SCN supports patients, families and caregivers to share their experiences and passion to make positive change. Patient and family advisors and patient and community engagement researchers (PaCERs), who bring together their personal health experiences with specialized training and conduct research[2] within Alberta's SCNs, are active and valuable partners at all levels and in all associated activities of the SCNs. This includes being members of leadership teams, core committees, interview panels and working groups. Patient and family advisors and PaCERs are partners in policy development, priority and agenda setting and health system research and innovation, and speakers at relevant local and provincial meetings. The patient voice is unique, and those with first-hand experience provide important insights when setting priorities and exploring solutions toward improved outcomes.

The SCNs are establishing an understanding of how patient and family engagement can improve the health system. They are tracking retention rates of advisors by using a volunteer database with start and end dates, and are now in the second year of collecting data through an annual patient engagement survey to assist with understanding what is going well and where improvements can be made. Analyses of these data will inform strategies to maximize retention of patient and family advisors.

Several successful initiatives have been co-designed that serve as exemplars in patient engagement. To ensure that active patient and family advisors can function effectively in their advisory role, they are supported by SCN staff liaisons as their main point of contact. *Engaging for Excellence: A Staff Liaison's Guide to Best Practice*[4] was co-designed by the advisors and SCN staff. Written from the patient advisors' perspective, the guide shares tips on meaningful engagement related to maintaining mutual respect, timing of engagement, applying co-design principles in project work, techniques that help to level the playing field (e.g., avoid titles, jargon, acronyms and labels), the importance of checking in with people who are quiet, and ensuring that expenses are reimbursed promptly (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190596/-/DC1).[4,5]

For some, the Patient Engagement Reference Group (see photo) provides a meeting forum for patient and family advisors and PaCERs in the SCN to develop trust in a safe environment, and to share experiences and learn from each other. Advisors connect and network with other advisors, endeavour to understand barriers and challenges in an effort to break down silos regarding patient and family engagement in the SCNs, develop and strengthen skills, and participate in consultations regarding SCN or AHS work. The Patient Engagement Reference Group meetings, which occur 3–4 times a year, combine face-to-face and videoconferencing approaches. They are chaired by an elected patient and family advisor and the SCN chief program officer. These co-chairs have shared responsibilities and decision-making, consistent with best practice as identified in other health care organizations and

KEY POINTS

- A growing body of evidence suggests that patient engagement can lead to better health outcomes, contribute to improvement in quality of care and patient safety, and help control health care costs.
- Alberta's 16 Strategic Clinical Networks (SCNs) have embraced meaningful patient engagement as a foundational principle for establishing networks, and, to that end, they have embedded about 150 patient and family advisors within the networks.
- The SCNs are establishing an understanding of the effect of patient and family engagement to make improvements in the health system; several successful initiatives that are exemplars in meaningful engagement have been designed.

jurisdictions.[3,5,6] Several members of the reference group have developed digital stories (www.youtube.com/playlist?list=PLi1tOF1I5ZoWY3hfrrwu15NTWz8e9amOt) that are used across Alberta at many different forums to emphasize patient- and family-centred care. The reference group also helps to inform quality improvement and patient safety, and development of clinical pathways, policies and strategies (e.g., AHS' virtual health strategy). The members consistently self-evaluate; past evaluations strongly indicated that advisors find the meeting opportunities valuable and inspiring, which motivates them in their partnership roles with the SCNs.

In its quest for sustainable and effective care, the PaCER unit at the O'Brien Institute for Public Health (University of Calgary, Calgary) is working to transform the role of patients in health and health care delivery. The PaCERs are patient researchers with a variety of health conditions and trained in qualitative health research, who are creating a new collective research voice by patients, with patients and for patients. Those who graduate from the research program have an informed voice in health systems research, the knowledge to ask the right questions with the right approach, and the ability to go beyond advocacy to be an informed advisor. Working in collaboration with medical researchers, health systems and community organizations, the PaCER unit is committed to finding better, stronger and more creative ways of engaging patients in health care. This means building new partnerships and roles for patients. The PaCERs have published many articles in a range of topics that include acute and intensive care settings, osteoarthritis management, advanced care planning and enhanced recovery after surgery. Involving patients and those who care about them adds a new dimension to traditional research. Sixty-one people have graduated from the PaCERs program since its inception in 2013 and, to date, about 20 are currently engaged in research initiatives with the SCNs. The original intention in developing the PaCER program was to build capacity among those involved with the SCNs.[7]

Healthcare 101 was launched in May 2018 and was co-designed with Albertans for Albertans, aiming to help them experience health care in a more positive way. Patient and family advisors and partner organizations involved with the SCNs together found 4 topics for discussion that they felt patients and family would benefit from: understanding the health care system, navigation of the system, how to talk to doctors and other health care providers, and how to understand their rights. Four free online modules — Healthcare Basics for Albertans, Finding My Way, Being My Own Advocate and My Rights — provide information and tools designed to educate Albertans on a range of topics in health care.[8] Since its launch in May 2018, Healthcare 101 pages have been viewed more than 11 000 times and have been translated into French and Spanish by users.[8,9]

Patient and family engagement is a relatively new area of focus in health system improvement; as learning networks, the SCNs improve through trial and error, failures and successes. Engaging patients is difficult because it is new, and some clinicians and leaders are inexperienced. Through the SCNs' commitment to meaningful engagement, effective learning strategies have been developed and documented in the Engaging for Excellence guide for best practice, which is used to train SCN staff.

By working and learning together, and ensuring the presence of advisors' voices, the SCNs believe that they have developed well-rounded solutions to future challenges. Challenges that the SCNs initially encountered in 2012 included the need to orient everyone to the importance of meaningful patient

Members of the Strategic Clinical Network Patient Engagement Reference Group.

engagement without tokenism[10] and regardless of participants' formal training in health care or traditional hierarchies. The SCNs overcame some of these challenges by embracing co-design principles (which often takes longer but improves the quality of outputs), engaging early in new initiatives to ensure that the patient or family members' voices are heard from start to finish and, where possible, ensuring that there is more than 1 Patient and Family Advisor engaged in any given initiative for ongoing support. The SCNs have adopted the philosophy, "we are all students of engagement," and continue to learn and grow together.

By continuing to provide meaningful engagement opportunities, education, developing the Patient Engagement Reference Group and leading by example, the SCNs have been able to successfully recruit and retain advisors. Ongoing endeavours to learn and follow best practice will help to overcome challenges to patient engagement within the SCNs. They are committed to strengthening the relationships with patient and family advisors, engaging them as valuable partners in decision-making, supporting them as they make important contributions, and prioritizing work that improves health outcomes and the experiences of patients and their families. Ongoing evaluations of these exemplars are either in progress or have been completed using formal surveys or focus groups.

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COMMENTARY

Addiction and Mental Health Strategic Clinical Network: Involving people with lived experience to transform care in Alberta

Kay Rittenbach PhD, Frank P. MacMaster PhD, Nick Mitchell MD MSc; for the Addiction and Mental Health Strategic Clinical Network

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Mental illness and substance misuse are important public health problems in Canada. They are common, often co-occur [1] and have extensive impact on the individual, society and the health care system.[2] In 2015, the Canadian Institute of Health Information reported that youth visits to the emergency department for mental health concerns have increased in Canada, while visits for other causes have remained steady or declined.[3] In Alberta, the number of deaths related to opioid overdose doubled every year (from 2014 to 2017).[4] Furthermore, an internal provincial report found that youth with mental illness and their caregivers find visits to the emergency department distressing.

Since 2013, addiction and mental health care has been a stated clinical and research priority at both provincial and federal levels. Many in and outside of Alberta Health Services (AHS) provide high-quality care for people who have addiction or mental health care needs. However, the need for care demonstably outpaces the available services.[5] The Addiction and Mental Health Strategic Clinical Network (AMH SCN; www.ahs.ca/amhscn) was established in 2012 to enhance the prevention and treatment of mental health disorders and addiction to further the collective SCN mission to improve health outcomes for all Albertans.

The mandate of the AMH SCN is to bring research and innovation to Alberta's system of mental health care. As such, it has established collaborations with provincial and national stakeholders, including community organizations, people with lived experience, clinicians, academic experts from institutions across Canada and groups within AHS responsible for front-line service delivery, policy and clinical knowledge, data collection and reporting. The AMH SCN has used both quantitative and qualitative research to prioritize the projects. The Strategy for Patient-Oriented Research (supported by the Canadian Institutes of Health Research, www.cihr-irsc.gc.ca/e/41204.html) emphasizes the value of patient-oriented research and patient engagement to health systems. The AMH SCN has purposefully conducted all of its projects with stakeholders and partners from different backgrounds (i.e., clinicians, administrators, patient representatives, researchers and community partners) and consciously centred the voices of people with lived experience to generate and interpret Alberta-specific data and prioritize areas of focus (see figure and Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190586/-/DC1).

KEY POINTS

- The Addiction and Mental Health Strategic Clinical Network (AMH SCN) collaborates with many organizations and stakeholders to improve the care provided to Albertans for addiction and mental health.
- Quantitative and qualitative data direct the prioritization of AMH SCN projects.
- The AMH SCN has incorporated the voices of people with lived experience in projects such as the evaluation of community-based naloxone, redesigning of emergency departments to improve the experience of youth with addiction and mental health issues and awarding of grants offered by the AMH SCN.

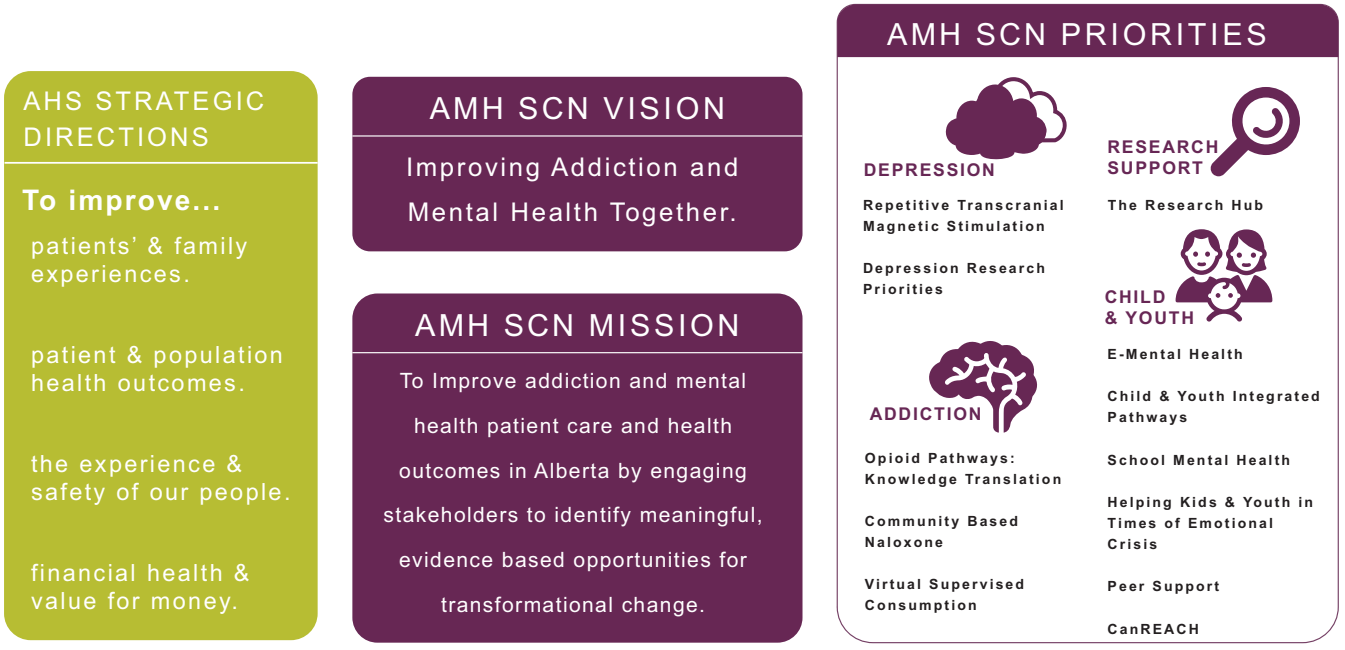
Involvement of Albertans with lived experience of addiction or mental health care needs in innovation and research directly supports the patient-centred care focus of AHS. People with lived experience include those with direct-care needs and their caregivers, because both perspectives are vital to a health care system that strives to constantly improve patient care. The AMH SCN designed and administered a call for research projects that supported the mental health mandate of the Alberta government.[6] For this call, people with lived experience were active, full members of the steering committee and a panel that reviewed the top 10 applications (based on scientific peer review) for feasibility and value to the system. Evaluations by people with lived experience were incorporated with substantial weight when funding decisions were made.

An evaluation of this process of involving people with lived experience in decisions on research funding found that many stakeholders considered that the process led to the funding of important, scientifically rigorous projects and inclusion of the perspective of people with lived experience would be a good model for future grant calls.

The Alberta Community Based Naloxone Program evaluation (co-led by the AMH SCN) ensured that the most effective ways of distributing overdose response kits to community members were enhanced.[7] This resulted in increased access and use, and the AMH SCN facilitated relationships that resulted in practical improvements to the program. Community harm reduction agencies were vital in understanding how the kits were being used and in collection of front-line data for the study. Originally, the AMH SCN planned to include people with lived experience of substance use and naloxone kit use on the evaluation working group; however, when co-designing the plan with people with lived experience, we learned that they felt that it would be more effective to connect with individuals through existing community harm reduction agencies by leveraging established trusting relationships. This led to collaborative work: the agencies raise issues from individuals to the working group, and the working group works to solve the identified problems. Outcomes from this work included increasing the dose of naloxone in the kits (based on feedback that more than 1 kit was needed to reverse many overdoses) and a directive from the CEO of AHS that all emergency departments in Alberta should distribute overdose response kits without barriers (based on findings from surveys as to why kits were not available in some locations with need; https://extranet.ahsnet.ca/teams/policydocuments/1/clp-distn-naloxone-kits-hcs-214.pdf).

Substantial increases in visits to the emergency department by youth with addiction or mental health issues[6,8] led the AMH SCN and the Emergency Strategic Clinical Network to investigate the experience of youth and families in Alberta's emergency departments. Although this work included quantitative analysis of visits throughout the province and mapping of time spent in the emergency department by the patient from a systems perspective, the patient and family experience was the focus of the study design, data analysis and resulting suggestions. Youth and families co-designed the surveys used to gather qualitative data from patients to ensure language was patient friendly and the questions meaningful to people with lived experience. Youth and families played an integral role in validating the qualitative analysis through focus groups and webinars, and in the presentation of these findings back to operational leaders, physicians, front-line staff and researchers. This led to suggestions not typically addressed within the health care system: focussing on providing patient comforts to youth and families in the emergency departments (e.g., charging cables and art supplies), and the importance of providing support and resources for family members who accompany youth to the emergency department. Incorporating these suggestions is an ongoing project supported by the AMH SCN.

The AMH SCN has encountered several challenges over the years. First, patients with addictions and mental health disorders face considerable stigma in society and also from other fields of medicine. Second, there is a lack of providers (e.g., the number of psychiatrists in the province does not meet the guidelines from the Canadian Pyschiatric Association). Funding to support implementation-orientated research in Canada is also limited, which results in challenges to changing clinical practice. When practitioners face pressure to provide service, adoption of new initiatives can be limited. There is also an inherent tension between academic researchers and health care systems because they have different incentives. The AMH SCN must work to bridge that divide to ensure that key priorities are being moved forward in a manner that benefits both.



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Strategic directions and priorities of the Addiction and Mental Health Strategic Clinical Network (AMH SCN).

As the SCN approach is novel, it must be an iterative and learning system. The AMH SCN works to ensure that the voices of patients with lived experience are at the centre of all projects and to strengthen the relationships with the diverse stakeholders who deliver addiction and mental health care in Alberta. Documenting experiences through the implementation science and change management is critical for other organizations to learn from the SCN's experiences in trying to change practice. This includes ongoing evaluation of how the AMH SCN engages with people with lived experience and stakeholders in general. Key outcomes are based on the Alberta Quality Matrix for Health from the Health Quality Council of Alberta.

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COMMENTARY

Bone and Joint Health Strategic Clinical Network: **Keeping Albertans moving**

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More than 150 conditions affect bones, joints, ligaments, tendons and muscles, some of which — notably osteoporosis, osteoarthritis and low back dysfunction — contribute to some of the highest burdens of disability and pain.[1] In Canada, about 30% of individuals older than 50 years of age will have a fragility fracture, a consequence of osteoporosis.[2] In 2011 in Alberta, 15.8% of the population reported having arthritis and 20.2% reported low back pain,[3] and musculoskeletal conditions were one of the top 7 reasons for admissions to hospital and visits to emergency departments.[3] Recent reports also indicated that each Albertan will develop, on average, at least 1 musculoskeletal condition in their lifetime.[4] Such conditions are related to activity levels, being overweight and older age. Given Canada's aging population, a high and growing burden of musculoskeletal conditions can be anticipated.[1,4]

Alberta's Bone and Joint Health Strategic Clinical Network (BJH SCN; www.ahs.ca/bjhscn) was established in 2012 to support musculoskeletal health of the province's population. It evolved from a provincial working group established in Alberta in the early 2000s that was tasked to respond to the wait-time crisis for hip and knee arthroplasty. The BJH SCN operates across the care continuum — from prevention to self-management to in-hospital care and postdischarge care — and across the lifespan, with a focus on innovative service delivery.

The mandate of the BJH SCN continues to be transformation of Alberta's health care system to ensure that Albertans have access to the right services and providers at the right time, as well as being able to participate in the processes leading the transformation. The strategic areas of work for the BJH SCN were originally in the acute care setting, with a more recent shift "upstream" to address conservative care and prevention strategies across the lifespan as they relate to musculoskeletal health (see figure and Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190581/-/DC1).

As with all Alberta's SCNs, the BJH SCN comprises a leadership team, core committee and a diverse network of partners and stakeholders across the province. A Scientific Office, purposefully embedded within the leadership team, ensures an evidence-informed approach in all SCN activities. It also provides a direct link to academic partners across the province.

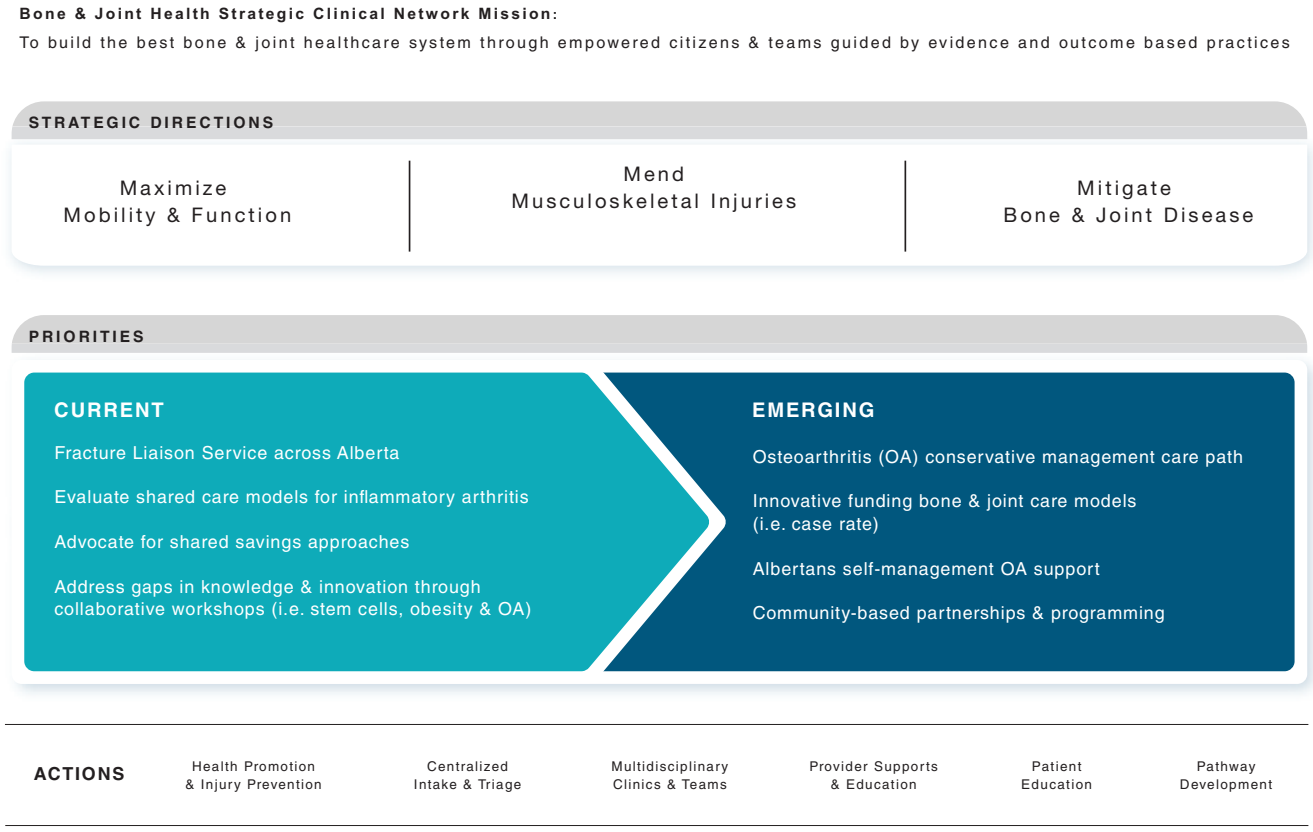
KEY POINTS

- Musculoskeletal conditions affect a substantial proportion of the Canadian population.
- The Bone and Joint Health Strategic Clinical Network (BJH SCN), established in 2012 to support the musculoskeletal health of Alberta's population, aims to operate across the care continuum — from prevention to self-management to care in hospital and postdischarge care — and across the lifespan, with a focus on innovative service delivery.
- Standardized evidence-informed provincial care pathways have been shown to positively affect patient outcomes and system efficiencies.
- Lean leadership, broad stakeholder engagement, key partnerships and a commitment to evidence-informed process innovation have driven the BJH SCN's successes.

In collaboration with stakeholders, which include clinicians, patients, researchers, policy-makers and administrators, the BJH SCN has implemented beneficial system changes in 2 key areas — osteoarthritis and osteoporosis — which included the development, implementation and operationalization of standardized, evidence-informed care pathways and programs.

The hip and knee arthroplasty pathway, now operational in all Alberta hip and knee clinics, includes a central intake process and an embedded mechanism for quality improvement. A pragmatic randomized controlled trial showed that pain and functional outcomes improved significantly for patients using the new pathway compared with standard care over a 12-month follow-up period (Western Ontario and McMaster Universities Osteoarthritis Index score: treatment effect 2.56, 95% confidence interval [CI] 1.10–4.01; Short Form 36 Bodily Pain score: treatment effect 3.01, 95% CI 0.70–5.32).[5] System efficiencies gained included reduced length of stay from an average of 4.7 to 3.8 days and a decrease in readmission rates from 4.3% to 3.9%.[6]

Working with Bone and Joint Canada, a national network supporting the management of care for Canadians living with musculoskeletal conditions, the BJH SCN led the implementation of a pilot initiative of the Good Living with osteoarthritis: Denmark



Alberta Health Services

Strategic directions and priorities of the Bone and Joint Health Strategic Clinical Network (BJH SCN).

(GLA:D)[7] neuromuscular exercise program for individuals with osteoarthritis in Alberta, in rural, urban, public and private spaces. A 2018 report on outcomes in Alberta indicated that after 3 months, the GLA:D pilot program had a positive effect on participants' pain (with decreased use of medication including opioids), functional abilities, activities of daily life and overall quality of life.[8] The BJH SCN is co-leading a feasibility evaluation of the GLA:D program to ensure its success in Alberta; a report should be available by the end of 2019.

The Fragility and Stability Program was developed to address secondary fracture prevention for patients with osteoporosis via Catch a Break (https://myhealth.alberta.ca/Alberta/Pages/Catch-a-break.aspx) and the Fracture Liaison Service (www.albertahealthservices.ca/scns/Page10781.aspx), and acute care, through a care pathway for hip fracture surgery. These 3 initiatives are being rolled out across Alberta. Development of a care pathway for postacute hip fracture (restorative) is underway, and relevant evidence is being gathered to identify current care gaps to facilitate increased coordination and standardization of care. Findings to date showed that the secondary prevention programs are cost-effective (an estimated $9200 per quality-adjusted life-year compared with usual care)[9] and are acceptable to patients, providing appropriate care and information upon which to make decisions.[10] Results are outlined in the BJH SCN's annual report,[6] and research publications are forthcoming.

The BJH SCN had some challenges and failures in attempts to achieve goals or effectively address priorities. For example, substantial effort has gone into funding-model innovation for public health care programming. Although there is interest, to date these initiatives are not being considered for resource allocation planning in Alberta's health care system. A shift from surgical referrals, which are often inappropriate for conditions such as musculoskeletal shoulder pathology, to evidence-based conservative management approaches for bone and joint problems has been another challenge for the SCN.

Factors that enabled success of BJH SCN initiatives include good leadership, broad stakeholder engagement, establishment of key partnerships and a commitment to being evidence informed. Beyond good leadership, the effectiveness of the BJH SCN team was closely linked to how the team works, with minimal hierarchy, openness and collaboration being key to enabling effective teamwork on the provincial mandate and broad scope of the initiative.

Current success builds on the hard work of the founders of the SCNs and the ongoing work of the senior leaders at Alberta Health Services (AHS). Patients, clinicians, administrators and researchers, across the musculoskeletal disciplines, worked collaboratively on BJH SCN projects and remain engaged on the leadership team, core committee and working groups. Diverse stakeholders, who function in the same musculoskeletal area (e.g., stem cells for osteoarthritis and arthroplasty for patients with obesity), but who otherwise may not interact, are brought together in SCN-facilitated workshops to determine joint actions and priorities at a provincial level.

Partnership with the Alberta Bone and Joint Health Institute has been instrumental to the BJH SCN's success. The institute is an invaluable resource for analytics and project management, and the driver behind the robust performance measures generated on BJH SCN projects.

Quality improvement research, including the measurement of health-system performance, patient-reported outcomes and cost, is embedded in clinical pathways.[9] Reporting back directly to front-line clinical teams in a timely fashion, through mechanisms such as the balanced scorecard, is a key element that leads to effective practice change. Members of the BJH SCN are involved in research aligned with its strategic priorities as co-investigators, collaborators, knowledge users and knowledge brokers.

The BJH SCN is well established in the Alberta health care system and continues to strive to deliver value-based care for Albertans within a culture of shared responsibility. A key focus will be the development of standardized care pathways with embedded measurement processes for community-based assessment and treatment across the province for people with knee, low back and shoulder musculoskeletal problems.

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COMMENTARY

Cancer Strategic Clinical Network: Improving cancer care in Alberta

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Cancer is the leading cause of premature death in Alberta, and cancer care places a substantial burden on its health system. One in 2 citizens of Alberta will be diagnosed with cancer in their lifetime; 20 473 new cancer cases and 6637 cancer-related deaths are expected in 2019.[1] Alberta's population is increasing in size and aging rapidly, contributing to a 62% and 63% increase in cancer cases, respectively.[1] The effect of cancer-related illness on citizens of Alberta, its communities and its health system will be overwhelming unless effective improvements are implemented.

In Alberta, the continuum of cancer services includes prevention, screening, diagnosis, treatment and long-term management following treatment, delivered in multiple settings and by a variety of providers. However, no single entity previously had a mandate to address unwarranted variation, improve linkages between services and programs, or advance innovation.

The Cancer Strategic Clinical Network (CSCN; www.ahs.ca/cancerscn) was launched in 2012,[2] to address this gap and lead health system improvements for Albertans at risk of or with a cancer diagnosis. Strategic priorities are established by its leadership and network and outlined in a strategic plan or Transformational Roadmap. From 2017 to 2020, the network is focused on developing and implementing clinical care pathways to improve health outcomes, strengthening appropriateness of care to eliminate unnecessary tests and treatments, and engaging in health services innovation and research.

The CSCN is now part of CancerControl Alberta (the Alberta Health Services [AHS] program that operates cancer facilities and programs). This alignment enables collaboration on priority setting and a better understanding of operational issues. Although alignment is important, having working relationships within a broader network enables reach beyond the formal cancer centres to address health system issues related to diagnosis, transitions of care, survivorship, palliation and end of life (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190576/-/DC1).

The CSCN's first projects were relatively small in scope (e.g., optimizing rectal cancer care and developing ways to enhance recovery after head and neck surgery for cancer) and were identified by clinical champions.[3–5] These early successes showed the value of having a provincial cancer entity facilitate and coordinate quality improvement across the continuum, and enabled CSCN to develop ways[2,6] to support strategic planning and execution of larger-scale projects for process improvement competently.

KEY POINTS

- Alberta's Cancer Strategic Clinical Network (CSCN) has a mandate to address unwarranted variation and facilitate quality improvement across the continuum of cancer prevention and care in the province.
- Early provincial projects in the areas of rectal and head and neck cancer, although smaller in scope, were fundamental in the CSCN's development and ability to tackle more complex initiatives, like breast health.
- Achieving provincial consensus about best available evidence among patients, clinicians and subject matter experts enables the successful implementation of pathways to improve patient outcomes and efficiencies.
- Accessible and integrated data are essential for sustained practice change.

For example, CSCN brought together disparate clinical teams to design and implement a provincial perioperative high-observation protocol for patients undergoing major head and neck surgery for cancer. By facilitating consensus between clinicians and patients on the pathway, managing implementation, and measuring performance and outcomes, CSCN contributed to reduced length of intensive care unit (ICU) (1.9 v. 1.2 d, $p = 0.021$) and overall hospital stays (20.3 v. 14.1 d, $p = 0.020$), and ICU readmissions (10.4% v. 1.9%, $p = 0.013$) among patients with head and neck cancer in Alberta.[4,5] By releasing ICU bed-days, the protocol generated capacity at 2 major urban hospitals without new resources. The CSCN developed strategies for patient engagement, consensus building, health care project management, and data audit and feedback. Building such strategies and relationships was essential to starting more complex and large-scale initiatives.

In 2016, the CSCN leveraged its experience and expertise to lead a multiyear initiative to improve care across the continuum for women at risk of or with breast cancer in Alberta. A key strategy included convening representatives from the breast health community to facilitate consensus on an end-to-end pathway

(Appendix 2, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190576/-/DC1) that describes the continuum of care and that could be used to identify priorities for quality improvement. The first 2 priorities improved diagnosis and ensured surgical best practices. Three years later, the end-to-end pathway was used to organize consensus on subsequent priorities (e.g., multidisciplinary assessment and genetic testing).

The Breast Cancer Diagnostic Assessment Pathway addressed variation and wait time between discovery of a highly suspicious imaging finding and referral to a breast program. In 2017, the median wait time to surgical referral was 15 days, which was associated with high patient anxiety.[7] The CSCN pathway, implemented in 2018, resulted in a more than 50% reduction in the median wait time to referral to a breast program (from 15 to 6 d) and high patient-reported wait-time satisfaction.[7,8] This pathway improved communication and notifications to primary care physicians and the breast programs, prompted an immediate referral to a surgeon and initiated early patient navigation during the diagnosis period. The CSCN also established relationships required to integrate data from non-AHS providers and develop a provincial measurement system in collaboration with the Alberta Society of Radiologists.

The Same Day Mastectomy Pathway increased the proportion of mastectomies performed as day surgery. In 2014, Alberta was performing few day-case mastectomies compared with other provinces (1.4% v. 38.7% in Ontario, for example).[9] To address this gap and adopt best practices, the CSCN coordinated stakeholders to define which patients can receive same-day mastectomy, and developed audit and feedback mechanisms for operational leaders and clinical teams to benchmark adoption and continuously improve care delivery. The CSCN also collaborated with patients to design a provincial education package that would better meet their needs before and after surgery. Patients were instrumental in guiding its content and format. Between January and March 2019, 54% of mastectomies were day-cases with high patient satisfaction and access to consistent perioperative education. In total 884 bed-days were released in 2018/19 compared with 2011/12.[10]

Over the past 7 years, the CSCN network has grown in size and diversity, broadening its scope of work and learning along the way. Starting with defined projects that were feasible and could be completed in a short time enabled the network to show its value, build credibility and establish methodologies (quality improvement, implementation and measurement expertise) that were applied to more complex projects. That said, SCNs often have to compete amongst themselves for time-limited funding with predetermined scope, which inadvertently results in more quality improvement rather than large-scale transformational work. Sustainability can be challenging, especially in the absence of provincial accountability structures. Given that SCNs have existed for only 7 years, it is unknown whether CSCN projects will be sustained once work transitions to operations.

Improvements to health systems need to involve end users. Patient focus groups, experiences, feedback and codesign of patient resources helped advance solutions that addressed unmet patient needs for rectal, head and neck, and breast cancers. In some instances, patients voiced frustration and disappointment with the length of time it takes to untangle system complexities, especially when solutions span beyond the CSCN mandate or sphere of influence.

By engaging a broad network of passionate people from different parts of the health system and beyond, we fostered strong collaboration among stakeholders and agreement on priorities and strategies for improvement such as the end-to-end breast health pathway (Appendix 1). Despite provincial consensus and targets, site-specific timelines and implementation strategies were needed to address differences in readiness, ability to implement, or competing priorities — one size did not fit all. There was some tension in doing this because SCN funding was time limited. Across SCNs, we need to be more aware of how our collective work affects operations and how to better coordinate projects.

Linking data and information across the continuum of care is challenging. Legal barriers and problems with access to consistent and reliable data persist. The CSCN continues to facilitate an end-to-end measurement system that provides an integrated view of how cancer care is delivered across in Alberta.

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COMMENTARY

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

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Vascular diseases, including heart disease and stroke, affect more than 300 000 people in Alberta.[1] 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.[2] In 2015/16, 6144 inpatient discharges followed admission for myocardial infarction, which carries an annual cost of more than $80 million.[3] 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.[4]

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/cvhsscn) 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).[5]

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.[5] 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 (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.[6] 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.[6] 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.[7] 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.

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.

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.[8] 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.[9] 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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COMMENTARY

Diabetes, Obesity and Nutrition Strategic Clinical Network: Capitalizing on interdisciplinary networked thinking

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The prevalence of diabetes in Alberta is projected to more than double from 2011 to 2035 to about 11%,[1] with rural and First Nations communities having even higher rates. This is driven not only by obesity (about 24% in adults[2]), but also by social determinants of health and limited access to nutritious food and other resources. Canadian data show that about 45% of patients admitted to hospital are malnourished, and the length of stay of these patients is 2 days longer than for those who are well nourished.[3] Better treatment options, ensuring uptake of guidelines and addressing unwarranted clinical variation are things that can be addressed within the health care system. However, prevention of diabetes, obesity and poor nutrition involves a wide range of stakeholders outside of health care. To reduce the societal burden of obesity, poor nutrition and diabetes comprehensively, an interdisciplinary approach such as that provided by a strategic clinical network is required.

The Diabetes, Obesity and Nutrition Strategic Clinical Network (DON SCN; www.ahs.ca/donscn) in Alberta is uniquely charged with providing impetus to improve delivery of health care in its 3 interrelated domains. Recognizing that equitable attention must be paid to public health and health system innovations, prevention and management strategies, care in the community and hospital care, makes finding solutions complex. Thus, putting aside siloed thinking to consider issues as an interdisciplinary network has been key to the DON SCN's approach. The DON SCN community is committed to galvanizing ideas, mining evidence, and engaging with patients and families to provide generalized rather than overspecialized solutions with provincial scope and effect as outlined in our current Transformational Roadmap (www.albertahealthservices.ca/assets/about/scn/ahs-scn-don-roadmap.pdf) (Summary, Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190564/-/DC1). We call this "interdisciplinary networked thinking." We highlight 2 DON SCN signature projects that illustrate how interdisciplinary stakeholder groups have tackled gaps in care identified as priorities in Alberta.

An opportunity to create a partnership with primary health care arose from a conversation with a home care nurse who was frustrated with a lack of standard practices for treatment of diabetic foot ulcers, resulting in unnecessary amputations of the lower limbs and tremendous impact on quality of life. Among people with diabetes, 15%–25% will have a foot ulcer during their life, which may lead to amputation, and postamputation 5-year mortality as high as 75%.[4] Yet, 50%–85% of diabetic foot ulcers can be prevented by screening and aggressive treatment that is started in primary health care with appropriate specialist support.[5] This led to the creation of the Diabetes Foot Care Clinical Pathway project.

Organizationally, primary health care services sit outside of Alberta Health Services (AHS); however, without their agreement to prioritize the initiative and help populate an interdisciplinary steering committee, the foot care project would have failed because screening, the first and most critical step in the pathway, ideally occurs in a family practice setting. The DON SCN was directed by the steering committee to conduct an environmental scan, which found unwarranted variation in practice, lack of access to specialists outside of urban centres and low capacity for screening. Interdisciplinary networked thinking and collaboration among stakeholders (Appendix 2, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190564/-/DC1) enabled a creative, site-adaptable approach under the overarching guidance of the pathway, thereby empowering primary health care clinicians to screen feet, educate patients and refer appropriately to newly established High Risk Foot Teams, resulting in fewer amputations.[6]

KEY POINTS

- Operational changes have been facilitated through project management, clinical support and continuing education provided by the Diabetes, Obesity and Nutrition Strategic Clinical Network.
- Partnerships with organizations and individuals who are willing to put aside traditional siloed thinking, both inside and outside the health care sector, are fundamental for improved prevention and treatment of diabetes, obesity and nutrition-related conditions.
- Strong knowledge translation plans supported by practical tool kits and analytical support are necessary to sustain innovations.

To overcome barriers to implementing the pathway, the DON SCN supported this initiative with a project manager to oversee implementation, a clinical practice lead to provide education on a screening tool and other materials,[7] and continuing education for diabetic foot care. Spread of the pathway — parallel innovations in specialist limb preservation clinics, updating the benefits policy and assessment of new technologies for treatment of at-risk feet — has increased capacity to prevent this severe complication of diabetes.[6] The DON SCN continues to support spread of the pathway across the province, providing data analytics to track health care encounters and amputation rates.

An initiative to improve in-hospital diabetes care in Alberta arose after data from AHS showed that one-third of all results from glucose tests exceeded the recommended targets in patients with diabetes while they were in hospital. An audit of selected hospitals also showed that basal bolus insulin therapy (the current standard of care)[8] was included in only 27% of insulin orders.[9] DON SCN Core Committee members together with experts in patient engagement and in-hospital management of diabetes led several stakeholders in the development of a multifaceted strategy to address these issues (Appendix 2). This in-hospital diabetes care initiative built on lessons learned from an earlier failed pilot implementation in a single hospital that used education and an order set as the primary tools to facilitate change but lacked a comprehensive integrated knowledge translation strategy to support the change process.

The need for an appropriate knowledge translation strategy was reinforced by initial strong uptake of the basal bolus insulin therapy order set followed by recidivism. To facilitate change, knowledge translation specialists from the Alberta Strategy for Patient-Oriented Research platform and AHS were added to the team. Before any further implementation attempts were made, barriers and enablers were identified through focus groups with clinicians, including physicians, nurses, pharmacists and administrators. A tool kit[10] was designed to assist sites in identifying solutions to the barriers identified in their environment; in addition, the training provided for implementation of basal bolus insulin therapy was based on theory-driven behaviour change models. After implementation of the knowledge translation strategy, uptake of basal bolus insulin therapy has been strong and sustained.[9] To maximize the sustainability of knowledge translation efforts in this and other projects, 1 member of the DON SCN leadership team has received formal knowledge translation training.

Building on the relationships developed and projects undertaken since 2013, the DON SCN consulted widely in drafting its 2017/21 Transformational Roadmap, summarized as follows: prevent the onset and progression of diabetes, obesity and malnutrition; empower patients and providers to better manage diabetes, obesity and malnutrition to live well and long; and transform the health care system through research, surveillance and partnerships (Appendix 1).

In 2018, a regional hospital agreed to conduct a pilot project to improve care for patients with bariatric care needs, largely through staff training to reduce weight bias and increase procedural confidence (e.g., lifting and moving these patients). An important new initiative has been funded by a grant from the Canadian Institutes for Health Research to tackle malnutrition (as a component of frailty), particularly after a hospital stay in which malnutrition has been identified through screening. Creation of the Diabetes Infrastructure for Surveillance, Evaluation and Research project will enable the DON SCN and its partners to continue to strive for better health outcomes through ongoing surveillance, identification of research and care gaps, and development of appropriate solutions (Appendix 2). The benefits realized to date by the DON SCN have occurred because of relationships formed and strengthened over time. To measure long-term benefits, we will analyze utilization of health services and cost data to calculate return on investment, and monitor uptake and sustainability, as well as patient-reported outcomes and experiences.

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COMMENTARY

Seniors Health Strategic Clinical Network: Age proofing Alberta through innovation

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By 2046, 1 in 5 Albertans will be 65 years of age or older, and those aged 80 years and older are expected to double within the same time frame.[1] Health and social care systems worldwide face considerable challenges to meet the societal and economic demands as more people live longer with multiple comorbidities.[2] Dementia is a leading cause of disability and dependency among seniors: in 2016, about 42 000 Albertans were living with the disease, a number projected to triple by 2046. The cost of dementia is not solely health-related: in 2008, total health and societal (e.g., caregiver-related) costs in Alberta exceeded $1.2 billion.[3]

The Seniors Health Strategic Clinical Network's (SH SCN; www.ahs.ca/seniorshealthscn) mission is "to make improvements to healthcare services and practices that enable Alberta's seniors to optimize their health, well-being and independence" (see figure). The SH SCN is a network of health care providers, researchers, policy-makers and patient and family advisors (lay people with lived experiences). It comprises a core committee supported by a small leadership team. The core committee is made up of about 40 individuals including physicians, directors of operations, analysts and patient and family advisors, among others, who meet quarterly. The SH SCN also engages a provincial community of practice with a membership of almost 400 people representing a broad mix of clinicians working in seniors' health and a research network comprising about 100 academics.

The Scientific Office of the SH SCN builds partnerships with researchers to advance the use of knowledge to improve care and health outcomes for seniors. This office also brings members of the research network together to foster collaborative opportunities and multidisciplinary approaches to improving care for seniors, building research capability in Alberta's future workforce through studentships and seed grants. The James Lind Alliance Priority Setting Partnership project has engaged patients, caregivers, seniors' organizations and clinicians to identify 10 provincial priority research questions for seniors' health.[4]

The SH SCN develops and influences research and innovation under a 3-year strategic framework, known as the Transformational Roadmap[5] (https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-srs-roadmap.pdf). The roadmap is grounded by 3 strategic priorities that were identified by and reaffirmed in updates through collaborative engagement with the core committee, patient and family advisors and the communities of practice and research, taking into consideration the current state, planning assumptions and trends to identify opportunities for innovation in Alberta: Aging Brain Care; Frailty, Resilience, Aging-well: Late-life Transitions Initiative (FRAILTI); and Anticipating an Aging Alberta.

KEY POINTS

- The Seniors Health Strategic Clinical Network's (SH SCN) work is aligned with 3 strategic priorities as outlined in the Transformational Roadmap: Aging Brain Care, Late-life Transitions Initiative (FRAILTI) and Anticipating an Aging Alberta.
- The SH SCN facilitates the flow of information and ideas between research and practice communities to identify and fill knowledge and practice gaps rapidly.
- Work spearheaded by the SH SCN includes provincial initiatives across all care sectors (acute, continuing and community care) including the Appropriate Use of Antipsychotics project and Elder Friendly Care.

Examples of work led by the SH SCN include the Appropriate Use of Antipsychotics project, Elder Friendly Care in Acute Care and the Primary Health Care Integrated Geriatric Services Initiative.

The Appropriate Use of Antipsychotics project involved care teams working collaboratively with residents living in long-term–care facilities and their families to enhance person-centred care by consideration of each resident's life story and recognition of underlying causes of agitation to address their unmet needs. Since this project was implemented in 2014/15, use of antipsychotics in Alberta's long-term–care facilities decreased by more than 30%. At present, 17.1% of residents in long-term care in Alberta (who do not have a chronic mental health condition) are prescribed antipsychotics compared with the national average of 21.2%.[6] Qualitative evaluation provided rich descriptions of individuals "waking up" and becoming more interactive with their families and surroundings again (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190580/-/DC1). The implementation of

Summary of the Seniors Health Strategic Clinical Network (SH SCN) Transformational Roadmap.

this initiative and its associated resources (including the peer-reviewed Choosing Wisely Canada toolkit "When Psychosis Isn't the Diagnosis"[7]) has gained Alberta recognition as a national leader in appropriate antipsychotic prescribing practices.

The Elder Friendly Care project supports restraint as a last resort, delirium prevention, promotion of continence and functional capacity, and timely discharge of medically complex older adults from the hospital setting.[8] A study examining Elder Friendly Care approaches implemented in the surgical setting in Alberta reported a significant decrease in complications and length of stay among seniors after acute abdominal surgery.[9]

The Primary Health Care Integrated Geriatric Services Initiative project is a collaboration between the SH SCN and primary care that is designed to enhance the ability of the primary health care team to diagnose and provide care in the community for people living with various comorbidities, including dementia. As part of this initiative, a series of educational workshops providing practical information on topics ranging from timely recognition of dementia to end-of-life care were created to increase capacity to support people living with dementia and their care partners within primary health care.

The SH SCN is driven by the palpable motivation of its members to improve care for older adults, not only provincially, but for 1 person at a time. An example of this is another SH SCN initiative, The Dementia Advice Line. This is a telephone service that connects family care partners of people with dementia to the compassionate support of skilled nurses as well as to resources in their communities.

The SH SCN is working to ensure that Alberta is prepared for the effect of an older population through change in practice and generation of new knowledge. A strength of the SCN is its ability to facilitate an accelerated pace of change in knowledge translation. In health systems traditional research may take up to 17 years to translate evidence into practice,[10] yet, the SH SCN has influenced meaningful change in seniors' health since its inception in 2012. A key learning is that optimizing the care of an aging population does not always require additional resources: the health care system can stop doing some things because evidence of benefit is lacking, or because they are inappropriate or inefficient. The SH SCN has a role in identifying such practices (e.g., inappropriate prescribing) and working on strategies to transition away from them. Work is currently underway to identify a set of Quality Indicators, which will be used to monitor outcomes of interest to the work of the SCN.

Perhaps one of the largest challenges that has faced the SH SCN has been deciding where best to focus its efforts. Innovation is happening across the province; however, the resources that can be directed into areas of importance to seniors' health

are finite. Furthermore, Alberta is a geographically large and diverse province, which poses an additional challenge for implementing change.

The initiatives in this article illustrate some of the many outputs of the SH SCN to date. In preparation for the unprecedented demographic shift in Canada's population, the SCN continues to align its strategic priorities with Alberta Health Services' pursuit of a patient-centred, quality health system that is both accessible and sustainable for all Albertans.

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COMMENTARY

Critical Care Strategic Clinical Network: Information infrastructure ensures a learning health system

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Critical illness encompasses a range of life-threatening conditions, including sepsis, acute respiratory distress syndrome, trauma and multiorgan failure, among others.[1] These conditions are multifaceted and complex. Patients who are critically ill receive highly specialized and resource-intensive care. In 2018, in Alberta there were 92 473 intensive care unit (ICU) patient-days, with an average stay of 5.2 days and an ICU mortality of 10.3%. A single ICU day costs $3592, which extrapolates to about $377 million annually in expenditures for ICU services in the province.[1,2] As the population ages and medical care advances, demand for ICU care is expected to rise.

Recognizing the importance of this challenge to Alberta's health system, the Critical Care Strategic Clinical Network (CC SCN; www.ahs.ca/ccscn) was established in November 2013 to support the collective SCN mission of ensuring the best care for people with critical illness in Alberta through innovation and collaboration.[3] This is realized through fostering a learning health care system: one that leverages a unique provincial informatics infrastructure to drive innovation, implement evidence-informed practices and evaluate outcomes.

The CC SCN organizational structure includes all 20 provincial ICUs (14 adult medical surgical, 2 cardiothoracic surgical, 1 neuroscience and 3 pediatric) and comprises an interprofessional, multidisciplinary team of front-line professionals, physicians, operations leaders and decision-makers, along with researchers, patients and families, and partner organizations.[3] It is governed by a core committee with diverse representation from this stakeholder team, supported by a small leadership team, which includes the Scientific Office.

The CC SCN established 4 strategic priorities through engagement with stakeholders and that aligned with the priorities of Alberta Health Services (AHS).[4,5] These include appropriateness of care, research and innovation, emerging and partnered initiatives, and supporting decision-making (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190578/-/DC1). To better engage the critical care community and build on the identified needs of patients and families, the CC SCN has hosted 3 public "Café Scientifiques" to facilitate a sharing of experiences aimed at setting further network priorities (https://theconversation.com/how-patient-stories-can-improve-intensive-care-88210).[4] The aim is to cultivate a community with a common purpose to identify priorities, develop and share knowledge, and implement evidence-informed strategies to improve quality, patient outcomes and sustainability of the health system.

KEY POINTS

- The Critical Care Strategic Clinical Network (CC SCN) focuses on ensuring the highest-quality evidence-based care for people with critical illness in Alberta.
- The CC SCN has 3 foundational guiding principles: Patient and Family-Centred Care, Evidence-Informed Decision-Making and Quality Improvement.
- The network leverages a provincial informatics infrastructure (eCritical Alberta) to drive innovation, knowledge translation and implement evidence-informed science.
- Ensuring that diverse interprofessional participation in all network activities drives strategic initiatives for improvement has been key to surmounting the challenge of province-wide engagement.

The CC SCN's 3 foundational guiding principles are Patient and Family-Centred Care, Evidence-Informed Decision-Making and Quality Improvement, as outlined in the Transformational Roadmap (Appendix 1).[3] The ICU Delirium Initiative,[3] the Evidence-Care Gaps Initiative[5] and the Strained ICU Capacity Initiative[4,6] are 3 key projects that aimed to address appropriateness of care.

The ICU Delirium Initiative implemented provincial standards, care pathways and evidence-informed practices for delirium care, and promoted a learning environment and culture of continuous quality improvement.[7] A Patient and Family Advisor Working Group co-designed patient and family resources to increase awareness about delirium. Patient and clinician experiences, including an exploration of barriers and facilitators to implementation, were shared during 5 learning collaborative sessions (www.albertahealthservices.ca/scns/Page13415.aspx). This initiative led to sustained improvements in screening and a measurable reduction in delirium-days,[7] and was honoured with a 2019 Alberta Health Services President's Excellence Award for

Outstanding Achievement in Quality Improvement (https://ahspea2019.tumblr.com/post/184230485797/provincial-intensive-care-unit-icu-delirium).

The Scientific Office of the CC SCN facilitates research and innovation through the promotion, adoption and diffusion of evidence-based initiatives in critical care (https://criticalcareresearchscn.com/detail/posts/strategic-research-plan). Academic stakeholders include researchers from educational institutions throughout Alberta and partner organizations include the Alberta Society of Intensive Care Physicians, Canadian Critical Care Trials Group, Alberta Innovates, Canadian Institutes of Health Research, Canadian Frailty Network, and various charitable foundations and professional associations.

In 2014, the CC SCN was awarded 2 Partnership for Research and Innovation in the Health System grants from Alberta Innovates and Alberta Health Services. The ICU Capacity Strain program explored issues related to strained ICU capacity across Alberta, with the goal of improving access and efficiency in ICUs and ultimately quality of care and outcomes.[2,6] The Evidence-Care Gaps program aimed to improve patient care by closing measurable gaps in evidence-based care.[5,8,9] Researchers gathered patient, family and interprofessional feedback from across Alberta, and reconciled 5 priority areas, including delirium screening, early mobilization, family presence and effective communication, and transitions in care. The first 3 priority areas were bundled into the Provincial ICU Delirium Initiative,[7] and the other 2 priority areas have evolved into a priority initiative focused on Transitions in Care following critical illness.

The CC SCN aims to build capacity and foster partnerships with other SCNs, provincial programs, clinical operations, funding organizations and industry to explore opportunities for improvement in health systems in ICUs across Alberta. For example, the MEDEC Partnership – Sepsis was a 4-way partnership between Alberta Innovates, Alberta Health Services, Institute of Health Economics and bioMérieux to improve diagnosis and management of sepsis.

eCritical Alberta, a provincial ICU clinical information system (MetaVision) and comprehensive data repository and clinical analytics system (TRACER), that captures data on all patients admitted to ICUs in Alberta, is used by the CC SCN to empower front-line clinicians, operations leaders and stakeholders to make evidence-informed decisions for best practice. This informatics infrastructure is a unique system that supports patient care through the creation of customized reports and data extracts for quality improvement, clinical operations, education and research.[10] The network has championed a standardized suite of key performance indicators that align with best-practice recommendations and reflect the priorities of Alberta's critical care community, while also being leveraged to drive improvement in health systems and inform decision-making. Examples of Key Performance Indicators from eCritical TRACER web reports/dashboards include vital statistics, bed utilization, lengths of stay, acuity scoring and adherence to standard care practices (Appendix 2, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190578/-/DC1).

As the critical care community in Alberta is diverse and dispersed across a wide geographic region, there are unique challenges, particularly with engagement, logistics and understanding culture. These challenges have been mitigated by actively embedding broad representation of our community into leadership and all network activities. Because lack of engagement and understanding are barriers to sustainability of the SCN's work, the CC SCN actively works to cultivate a collaborative community, establishing a liaison committee of champions to provide regular dialogue with provincial operations and leadership, and "pushes and pulls" the community to engage in developing and steering strategic initiatives to improve health systems.

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COMMENTARY

Emergency Strategic Clinical Network: Advancing emergency care in Alberta through collaborative evidence-informed approaches

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Alberta's population is aging,[1] and this increases the need for complex emergency care. Since 2005–2006, emergency department spending in Alberta has grown by an average of 7.5% per year, with a lower percentage change of 4% over the last 5 years.[2] Continued growth in spending is not sustainable, but opportunities for continued improvement exist. Greater efficiencies may be gained by aligning clinical practice across the province with best evidence. Alberta Health Services (AHS) established the Emergency Strategic Clinical Network (ESCN; www.ahs.ca/escn) in 2013 to advance health system innovation and improvement in emergency care.

The ECSN identifies gaps, prioritizes areas for improvement, strategically aligns care with the needs of patients and front-line providers, translates evidence into practice and develops new evidence where none exists.[3] To achieve these goals, the network connects with patients, staff and physicians in the 103 emergency departments and 6 urgent care centres across Alberta.

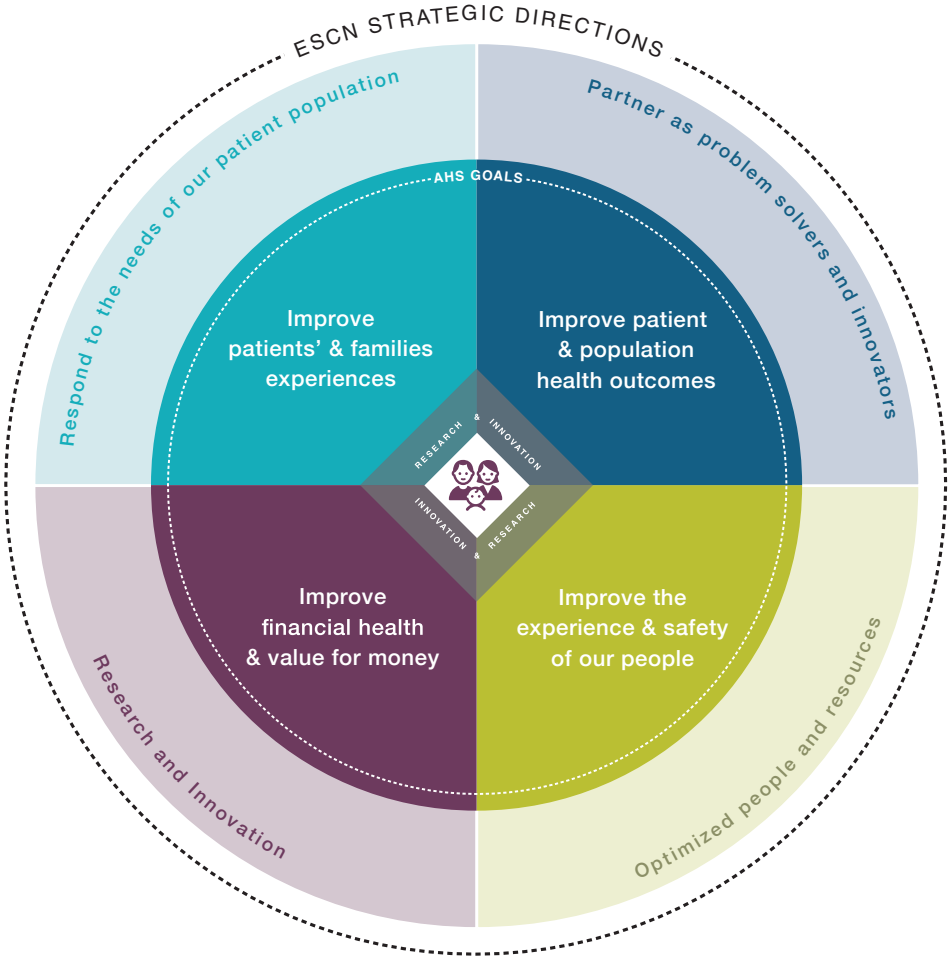
To facilitate collaboration on a provincial scale, the network is guided by a core committee comprising patient and family advisors, government representatives, nurses, pharmacists, physicians, paramedics, administrators, researchers and planners. The network's priorities, projects and products are developed with the input of the committee and working groups that support specific areas of work. For example, the Operations Working Group meets monthly and brings together emergency department clinicians, administrators, managers and educators from diverse parts of the province to address day-to-day issues (e.g., opioid crisis and overcrowding in emergency departments). Other important structures of the network include the Data and Performance Measurement Working Group, Education Working Group and Research Advisory Board. The data group develops standardized reporting of data across Alberta to support emergency department leads with planning and program development. The Education Working Group brings together Clinical Nurse Educators provincially and supports standardized training for nurses working in emergency departments. The Research Advisory Board, comprising academics and clinician scientists, provides advice on enhancing the emergency care research environment in Alberta.

Patient and family advisors serve on network committees and working groups, and broader patient and family engagement is achieved through focus groups and surveys. The Patient Experience project works closely with patients to develop patient-facing materials including a patient journey map and way-finding signage. The ECSN has 4 strategic directions aligned with the organizational goals of AHS (see figure). These goals reflect the need for a balanced approach to addressing health outcomes, costs, patient experiences and working environments for clinicians to ensure health system improvement. The network's strategic directions recognize that research, partnerships, responding to patient needs and ensuring that staff in emergency departments have what they need to do their jobs are important to achieving AHS' goals within emergency care.

The network has made it a priority to develop knowledge translation materials and harmonize provincial policies to standardize care across the province.[3] Seventeen provincial policy documents have been developed, with 20 more in progress (15 new and 5 revisions), as well as 60 clinical order sets. Education efforts for clinicians are also key to harmonizing care. The Emergency Nursing Provincial Education Program offers new nursing staff a standardized orientation to the emergency department.[4] The program provides robust training to small emergency departments with no dedicated educational infrastructure, improves consistency across sites and reduces duplication of training efforts. Between June 2012 and August 2019, 3421 newly hired staff completed the program, and 2349 existing staff registered to receive the training as part of ongoing professional development.

KEY POINTS

- The Emergency Strategic Clinical Network (ESCN) connects patients, staff and physicians at Alberta's 103 emergency departments and 6 urgent care centres.
- The ESCN works to align care with patient needs, translate evidence into practice and develop new evidence where none exists.
- Since 2012, the ESCN has engaged in projects such as standardized training, integrated care pathways and research to improve care for vulnerable populations.
- Challenges encountered so far include time and resource pressures within emergency departments, change fatigue at the front lines and lack of authority to change clinician practice.



Alberta Health Services

Strategic directions of the Emergency Strategic Clinical Network (ESCN).

The ESCN also supports evidence-informed change in practice by providing new channels for clinical practitioners to access and share information. For example, the network organized a Quality Improvement and Innovation Forum in 2019 in which 32 teams from emergency departments across Alberta presented quality-improvement projects. The ESCN also commissioned the Emergency Care Premium Literature Service, an open resource that provides its 485 current registered users with summaries of noteworthy academic articles relevant to emergency medicine practice.[5]

Since launching, the ESCN has worked to develop the evidence base for emergency care, and build capacity for local research in emergency medicine, by funding researchers. To date, the network has funded 36 undergraduate summer students and 13 systematic review projects through peer-reviewed grants. Funding by ESCN has also supported 23 journal publications, which helped to lay the groundwork for larger initiatives (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190591/-/DC1). For example, a funded review on children's mental health[6] enabled a trial of a new model of coordinated mental health and addictions care for children presenting to emergency departments.[7]

Work is also underway to improve care for other underserved populations who frequently access emergency services, including research focusing on quality of care in emergency departments for patients who are First Nations. This work is co-led with First Nations partners, including the Alberta First Nations Information Governance Centre, Tribal Councils and Nations.[8]

Other projects include efforts to coordinate care for residents in long-term care facilities using a centralized transfer pathway and community paramedics,[9] and a province-wide initiative to better serve patients living with opioid use disorder. Support for the opioid response work has been strong across Alberta. As of August 2019, it operates in 39 emergency departments with plans to expand across the province over the next 8 months. The project involves starting evidence-based treatment with buprenorphine/naloxone for eligible patients and providing next-business-day walk-in referrals to addiction clinics in the community. Evaluation of the project uses administrative data to track the number of patients started on the medication, attendance rates at follow-up appointments and prescription filling after initial treatment in the emergency department. Alberta Health Services has reported preliminary results,[10] and the ESCN is ensuring transparent reporting of evaluation methods alongside results through formal publication.

The ESCN's projects depend on the network's members being passionate about emergency care, and also on its strong and respected research network. Some challenges have posed barriers to success. Alberta Health Services is a large organization with many areas of activity and authority. The ESCN must compete for clinicians' and administrators' time and resources. It does not have operational authority within Alberta's emergency departments. Therefore, it is essential that the network provides convincing data and evidence for its projects to gain the support of emergency department clinicians and administrators. Ensuring relevance of the ESCN to local contexts is challenging given Alberta's geography, the mix of rural and urban emergency departments, change fatigue at the front lines, lack of authority for the network to change clinician practice and no research focus at most sites.

With 7 years' experience as part of Alberta's health system, the ESCN is well-positioned to address existing and emerging challenges. Over the next 3 years, the network anticipates substantial involvement in the implementation of Alberta's new provincial clinical information system. Through its projects, the ESCN will continue to work toward greater coordination between emergency care and community-based health services.

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COMMENTARY

Surgery Strategic Clinical Network: Improving quality, safety and access to surgical care in Alberta

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Publicly funded surgical care in Alberta is delivered at 55 hospitals and 42 nonhospital surgical facilities, with more than 293 000 surgeries completed per year at an annual budget of about $2 billion.[1] However, about 1.6% of Alberta's population is on a surgical wait list (70 000 out of 4.3 million Albertans), and about 50% of these patients are waiting longer than clinically recommended.[2,3] The number of Albertans waiting for an initial consultation with a surgical specialist is unknown. In August 2019, the Blue Ribbon Panel on Alberta's Finances reported that per capita health care expenditures in Alberta ($5077) were higher than other provinces (e.g., British Columbia, $4267; Ontario, $4080; and Quebec, $4370), but Alberta lagged behind these provinces on several key performance indicators, such as wait times, lengths of stay and readmission rates.[4] The needs of these patients are diverse, and root causes for untimely access and outcomes are complex and require system-level solutions that address fundamental and recurring challenges such as inefficient referral pathways, increasing disease chronicity, variation in surgical outcomes, antiquated models of care that are provider centric and a mismatch between demand and system capacity.

Recognizing the need to address these challenges at a systems level, Alberta Health Services created the Surgery Strategic Clinical Network (SCN; www.ahs.ca/surgeryscn) in 2013 with the goal of bringing together front-line health care professionals, operational leaders, academic partners and the community to identify priorities and develop novel solutions to transform the surgical landscape in Alberta. At the time, common metrics, processes and approaches to explicate surgical care were lacking. Although there were several quality-improvement initiatives at local sites, they were not centrally coordinated, integrated or widely shared. The creation of the Surgery SCN sparked a paradigm shift toward system innovation and learning, with a focus on using objective data to drive change and improve outcomes.

From the beginning, it was imperative that the Surgery SCN balance local, facility-based needs and priorities for efficient and effective service delivery (the operational business) while also identifying areas for collective action, improvement and innovation (the strategic business). In its first 3 years (2013–2016), the network focused on specific actions, tools and processes that would improve access, safety and quality of surgical care, and enable ongoing measurement and improvement. Three examples of this work include developing a standardized measurement system, the Alberta Coding Access Targets for Surgery tool to elucidate scheduled wait times, customizing and implementing the Safe Surgery Checklist to reduce surgical errors and implementing care pathways on a provincial scale (e.g., Enhanced Recovery After Surgery guidelines) to standardize care and improve patient outcomes and experience.

KEY POINTS

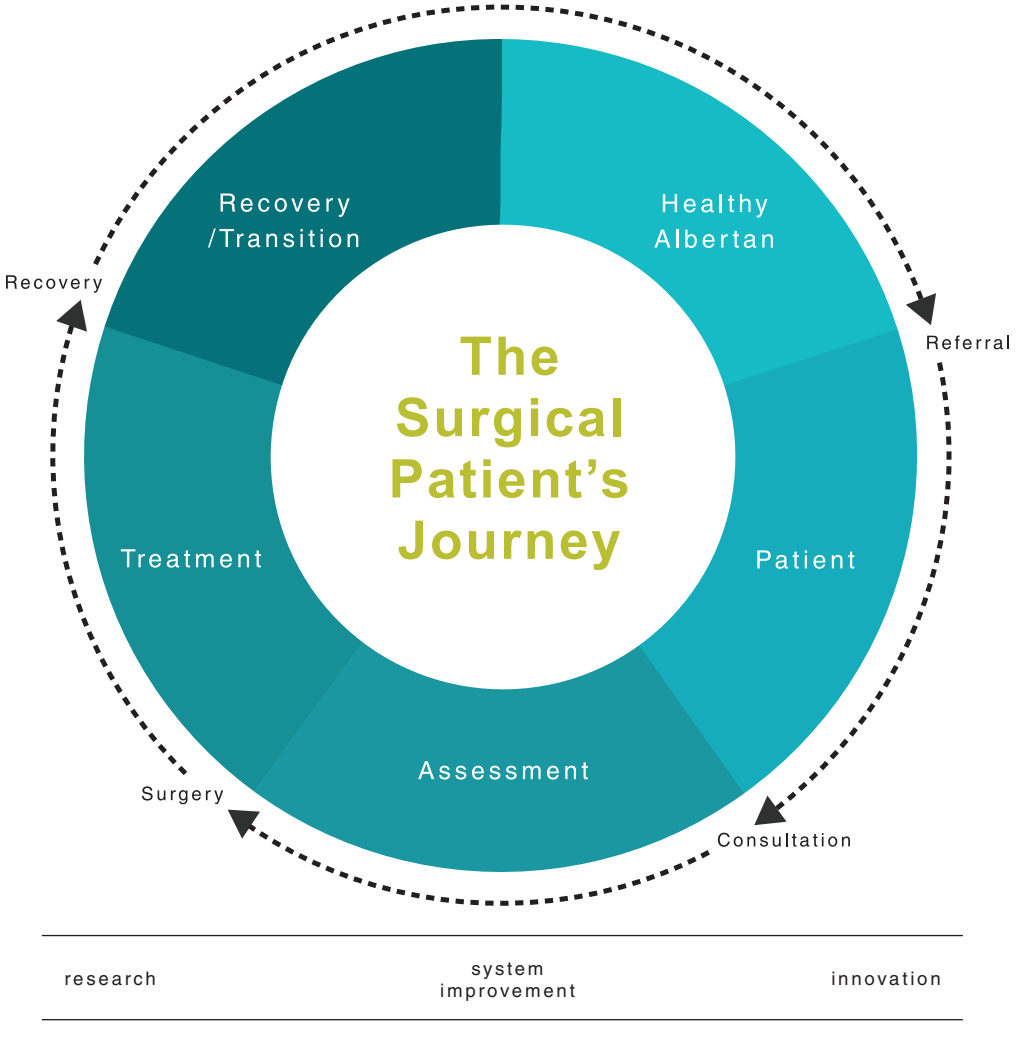
- Timely and equitable access to surgical care continues to feature prominently in public discourse and policy debates across Canada and is currently under scrutiny by Alberta decision-makers.
- The first 4 years of the Surgery Strategic Clinical Network (SCN), which was created in 2013 with a mandate to address gaps in care and unwarranted variation, were a "learning-and-doing" period, after which it shifted to a more strategic focus and approach.
- Comprising operational leaders, clinicians, academic partners and patient advisors, the Surgery SCN has successfully co-designed, tested, validated and implemented major surgical quality-improvement programs with substantial returns on investment.

These initiatives have provided considerable value to the people of Alberta through improved outcomes, patient experience and access to surgical care, system-wide learning and quality improvement on a provincial scale. The network has contributed to the successful implementation of this work and its ongoing evaluation. For example, the Alberta Coding Access Targets for Surgery[5] has improved transparency for surgical wait lists and how they are managed. When a surgery is booked, each patient is assigned 1 of around 2000 diagnostic codes, with a recommended maximum wait time and a "ready-to-treat" date. These data are used to optimize wait lists for surgeons to ensure that urgent cases are prioritized and patients who have been waiting the longest are operated on first. The common measurement system was developed and is adjudicated through consensus by surgeons, bringing together the subspecialties across the province. The implementation was coordinated through a provincial team working directly with surgeons, their medical office assistants, medical and administrative

leadership in the hospitals, and the surgical booking offices. The system has provided a consistent, transparent means to monitor and report surgical wait times — highlighting areas where variation in surgical scheduling continues and a data-driven mechanism to engage surgeons in discussion of utilization of surgery.

The Surgery SCN played a similar role in supporting the implementation of the Safe Surgery Checklist. Alberta was the first province in Canada to implement this checklist in all operating rooms, an outcome enabled through collaboration and effective partnerships. Broad engagement across regions and collaboration among clinicians, operational leads and patient advisors was critical to navigate challenges, create buy-in and ensure solutions reflected site-specific and procedural needs. Through ongoing communication and feedback, compliance and outcome continue to improve. Performance data have shown that the checklist has prevented errors in about 4% of surgeries.[6] All surgical sites in Alberta utilize the checklist, and the overall compliance rate has increased steadily from 48% in 2011 to 97% in 2018–2019, while the number of averted errors has declined over the same period from 314 to 137.[6]

First pioneered in the 1990s, the Enhanced Recovery After Surgery program is a bundle of interventions occurring before, during and after surgery that are intended to accelerate recovery by modifying the patient's response to major interventions. In collaboration with academic partners, the Surgery SCN was successful in securing provincial grant funding to adapt and implement Enhanced Recovery After Surgery guidelines at 8 hospital sites using 9 different care pathways.[7,8] Physician and nurse champions, armed with pathway adherence and surgical complication data, working with unit-level surgical teams to drive quality-improvement efforts, layered with strong leadership and a provincial coordination and learning approach has led to substantial improvements in the system and for patients. For patients undergoing colorectal surgery, implementation of the guideline led to lower lengths of stay and decreased complications, resulting in substantial cost savings for treatment for patients with cancer (range $1096–$2771/patient) and without cancer (range $3388–$7103/patient).[9] Based on the assessment of 1295 patients undergoing colorectal surgery, the net cumulative savings to the health system for the period June 2013 to



The Surgical Patient's Journey serves as a central framework for the Surgical Strategic Clinical Network (SSCN).

March 2015 were estimated at $2 290 000 (range $1 191 000–$3 391 000) or $1768 (range $920–$2619) per patient. Another study involving the same cohort of patients found that the return on investment for every $1 was $3.8.[10]

As the Surgery SCN has matured and looked to build on the success of these initiatives, it has recognized the need to be more strategic in future endeavours. In 2017, the network began a comprehensive consultation process with major stakeholders (i.e., the provincial government, front-line staff, patient and family advisors, operational leaders and academic partners). This informed the network's Transformational Roadmap for 2018–2021 (https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-surg-roadmap.pdf),[11] which provides strategic guidance over the next 3 years. The roadmap identified the Patient's Surgical Journey (see figure) as the central framework, and set out 4 strategic objectives that are critical to the future improvement of surgical care in Alberta. These objectives focus on improving access to surgical care; providing safe, high-quality care; building a strong surgical community; and using analytics and evidence to guide decisions.

Since its inception, the Surgery SCN has galvanized the surgical community to work toward generating and implementing data-driven evidence to enhance patient-centred surgical care for all Albertans. Despite progress over the past 5 years and a deep asset base from which to build, there is a clear need to continue to bring Alberta's surgical community together, leverage the single health system, put citizens of Alberta first, and spread and sustain solutions at a provincial scale to tackle the complex issues related to the delivery of surgical care.

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COMMENTARY

Respiratory Health Strategic Clinical Network: Five years of innovation in respiratory care

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Each year asthma exacerbations lead to 20 000 visits to an emergency department in Alberta.[1] Chronic obstructive pulmonary disease (COPD) accounts for $254 million per annum in direct health care costs to the province, with 51% of these costs attributed to admissions to hospital.[2] Undiagnosed and untreated obstructive sleep apnea increases the risk of cardiovascular disease, stroke, and traffic incidents.[3] The burden of respiratory disease in Alberta continues to impact utilization of health care, contributes to health care costs and affects quality of life. The Respiratory Health Strategic Clinical Network (RHSCN; www.ahs.ca/rhscn) was launched in January 2014 with the mission to "facilitate optimal respiratory health through implementation of innovative, patient-centered, evidence-informed and coordinated services."[4]

Alberta's Strategic Clinical Networks (SCNs) support multidisciplinary teams pursuing innovative strategies with the aim of improving outcomes, patient experience and value for the Alberta health care system.[5] Members of the RHSCN include a team of researchers, clinicians, policy-makers, patients and caregivers, and community partners that comprise the core committee.[4] This committee, in collaboration with the RHSCN leadership team, is responsible for the creation and implementation of the Transformational Roadmap (https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-rh-transformational-roadmap-2018-2021.pdf), which guides the network's focus and priorities (see figure).

Guided by Working Groups, the SCNs offer an opportunity to trial implementation projects with a strong link to the research community.[6] The RHSCN Core Committee identified asthma, COPD, sleep-disordered breathing and oxygen therapy as the priorities of the network. Network members guide development and implementation of initiatives that address the priorities within areas of focus outlined in the Transformational Roadmap. This bottom–up approach is a hallmark of the networks. Important focus areas include providing care across the disease continuum, integrating policy and practice, and strengthening and integrating evidence.[4]

The RHSCN is committed to respiratory health care, from disease prevention through diagnosis and acute management to end-of-life care.[4] Two signature projects of the RHSCN include The Alberta Childhood Asthma Pathway and COPD order set/discharge bundle. The Alberta Childhood Asthma Pathway began as a regional initiative to reduce variance in the management of pediatric asthma in the emergency department and inpatient settings. The pathway has now been implemented in 105 sites across Alberta and is considered the standard of care. Building this work, a Partnership for Research and Innovation in the Health System grant is currently being used to evaluate a primary care pediatric asthma pathway, using electronic medical records and Web-based learning.[7]

Recognizing the burden of admissions to hospital owing to COPD, the RHSCN led the development of standardized COPD hospital admission order sets meant to reduce unwarranted variance and optimize best practice for COPD exacerbations. The standardized order sets were successfully piloted at an acute care site and resulted in an average 1-day reduction in length of stay.[8] Building on this work, discharge bundles were recognized as an important tool to improve patient transition to the community and reduce risk of hospital readmission.[9] In collaboration with clinicians, patients and national leaders from the Canadian Thoracic Society COPD Clinical Assembly, a Canadian discharge care bundle for patients with COPD (funded by the Partnership for Research and Innovation in the Health System) was designed to facilitate the transition from hospital to home.[10] The evidence-based COPD discharge bundle includes the following core components for each patient at discharge: ensure the patient has shown adequate inhaler technique, provide a discharge summary and follow-up with primary care, optimize prescription

KEY POINTS

- The Respiratory Health Strategic Clinical Network (RHSCN) was launched in January 2014 with the mission to facilitate optimal respiratory health through implementation of innovative, patient-centred, evidence-informed and coordinated services.
- The RHSCN Core Committee has identified asthma, chronic obstructive pulmonary disease (COPD), sleep-disordered breathing and oxygen therapy as the priorities of the network.
- Key initiatives of the RHSCN include the Alberta Childhood Asthma Pathway project and the COPD order set/discharge bundle — challenging projects that require the engagement of clinical communities, opinion leaders and partners to change practice.
- The ongoing engagement and investment of the clinical, research, and patient and caregiver communities is a key component to the relevance of the network.

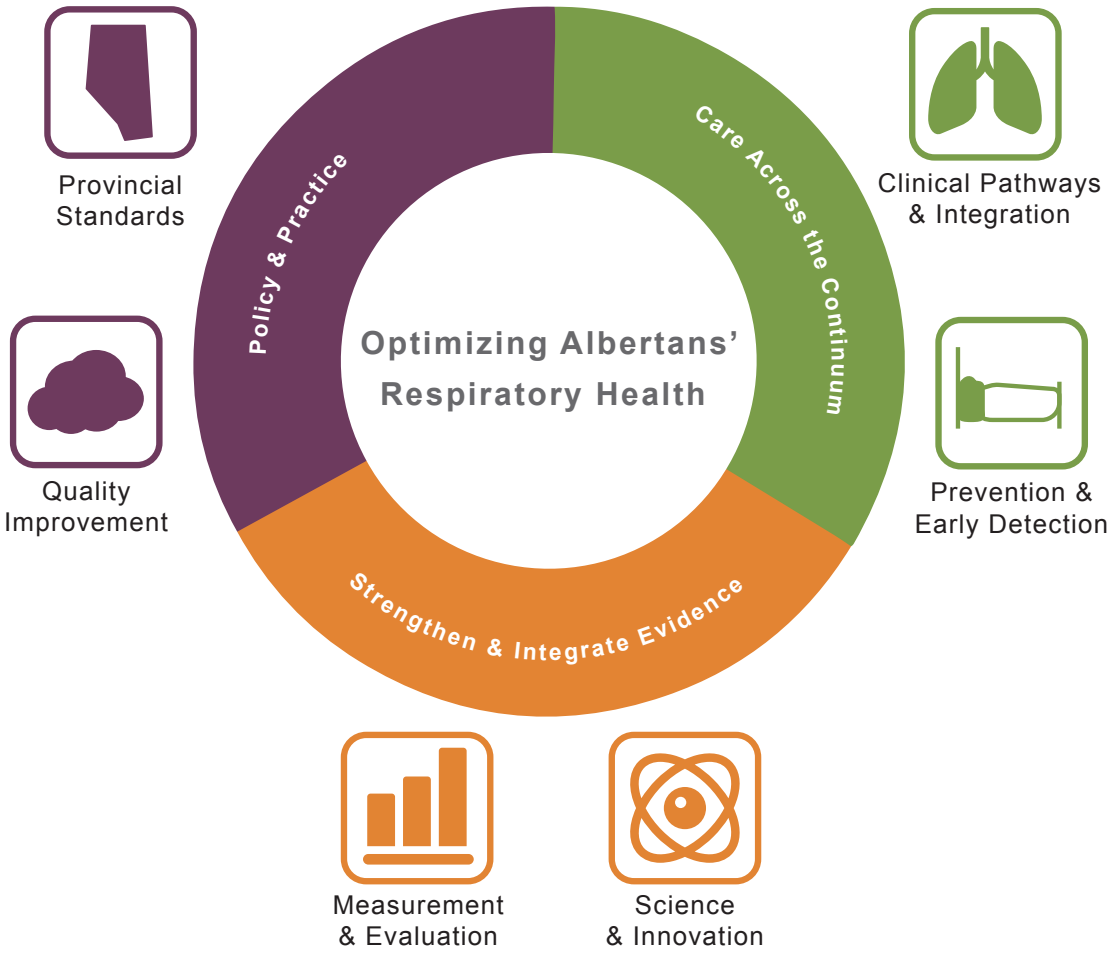
medications, provide a written discharge plan, consider pulmonary rehabilitation referral, screen for frailty and comorbidities, and assess smoking status to assist with a smoking cessation plan.[10] Implementation and effectiveness of the discharge bundle is currently being evaluated in 5 sites across Alberta.

With large-scale provincial research projects such as the Alberta Childhood Asthma Pathway and the COPD order set/discharge bundle work, there are challenges. Both projects were affected by the engagement of stakeholders and by ensuring buy-in from the clinical community. Specifically, both projects needed substantially more time to engage sites, build relationships and create a willingness to change than first anticipated. These projects required a dedicated team member to work closely with the sites, identify site-specific barriers to implementation and work with site leaders to ensure that the implementation plan was feasible. Implementation of both projects faced site-specific limitations such as competing projects, staffing changes and technology challenges, which delayed local implementation and affected uptake.

Based upon our learning from these 2 large-scale projects we have several suggestions to offer teams working outside of Alberta who are engaged in similar work. First, establish site-based teams early and identify site champions to lead the implementation and facilitate communication with the provincial team. Second, bring together site champions to discuss their strengths and challenges, offer opportunities to learn from each other and develop a network to facilitate collaboration. Third, facilitate early access to data and feedback at individual sites. As an example, within the COPD order set/discharge bundle work, the senior analyst provided site-specific data regularly to ensure each site could view their data relative to the larger provincial data and identify where improvements could be made.

Recently, the RHSCN has begun working to promote disease prevention and early detection of respiratory illness. The Tobacco Use Task Force was created to work with clinical practitioners to target prevention and cessation of tobacco use. The task force recently began a pilot project to evaluate the effect of an early smoking cessation intervention with cigarette smokers who are identified in community pharmacies.

The RHSCN Scientific Office focuses on science and innovation through building research capacity, facilitating uptake of evidence and guiding the RHSCN's research priorities. Given this role, the Scientific Office recently completed a research prioritization process



Alberta Health Services

Strategic priorities of the Respiratory Health Strategic Clinical Network (RHSCN).

led by a steering committee of patient and caregiver advisors and clinicians to identify what both communities feel should be the focus of the research agenda. The research questions generated through this process will guide the work of the RHSCN Scientific Office and set direction for funding opportunities such as seed grants and studentships. As a network, the RHSCN continues to evolve to meet the needs of the clinical, research, and patient and caregiver communities more effectively. The Transformational Roadmap was refreshed in 2019 to allow for an exploration of upcoming priorities and initiatives, and to ensure the network remains aligned with stakeholders and continues to forge strong partnerships. Future work should include a stronger focus in prevention and early detection of respiratory disease. The ongoing engagement and investment of all communities is a key component to the success and relevance of the network.

The RHSCN will continue to be driven by engaged stakeholders, holding itself accountable to quality improvements that benefit patients with respiratory conditions. Going forward, the RHSCN will build on lessons learned with the aim to strengthen the relationships between clinical operations and the research community to reduce the time to implement evidence into practice, build new partnerships to further liberate and integrate respiratory data to enhance the respiratory health community's utilization of real-world evidence, and increasingly leverage the expertise of the community to improve respiratory health for all Albertans.

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COMMENTARY

Maternal, Newborn, Child and Youth Strategic Clinical Network: Improving health outcomes and system efficiency through partnerships

Seija Kromm PhD, Deborah McNeil RN PhD, David Johnson MD; for the Maternal, Newborn, Child and Youth Strategic Clinical Network

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Addressing the health needs of mothers, infants, children and youth will improve the health of Alberta's population today and into the future. The most common reason for admission to hospital in Canada is childbirth, and Alberta's birth rate is third highest among Canadian provinces.[1] Alberta also has the highest percentage of preterm births of all provinces (8.4% in 2017).[2] In parts of Alberta up to 18% of women receive fewer than 4 prenatal care visits (Dr. Amy Colquhoun, Ministry of Health, Government of Alberta, Edmonton: personal communication, 2018). Importantly, the infant mortality rate for First Nations people who live in Alberta is more than double that for the non–First Nations population.[2] In the adolescent population, medically complex youth transferring to adult services can experience poor outcomes, leading to increased usage of health care services.[3] These data show that care and outcomes are not optimal or consistent across Alberta and underscore the need for innovation and more equitable outcomes for people in Alberta.

The Maternal, Newborn, Child and Youth Strategic Clinical Network (MNCY SCN; www.ahs.ca/mncyscn) was established in 2015, following the structure of SCNs in Alberta and led by a small team of 6 people. The leadership team works and partners with network members and others to accomplish the SCN's key objective to bring together people, evidence and data to achieve the best possible health outcomes for mothers, infants, children, youth and families within a sustainable, publicly funded health care system.[4] This objective and SCN priorities are a direct result of collaboration with network members: front-line clinicians, operational leaders, government, community providers, researchers, and patients and their parents and families (see figure and Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190584/-/DC1).[4] The MNCY SCN has also partnered with researchers to secure grant funding to support its priorities — amounting to more than $4 million for the 4 projects described here. Each project is an example of how partnerships and collaboration were essential to bringing innovation into Alberta's health care system, leading to improved health outcomes and/or efficient use of health care resources.

KEY POINTS

- The Maternal, Newborn, Child and Youth Strategic Clinical Network's (MNCY SCN) key objective is to bring together people, evidence and data to achieve the best possible health outcomes for mothers, infants, children, youth and families within a sustainable, publicly funded health care system.
- The SCN has partnered with researchers to secure substantial grant funding to support its priority projects, which include a program to stop the routine use of an ineffective test used to predict premature birth, incorporating Family Integrated Care in Alberta's neonatal intensive care units and coordinating research on adolescents transitioning to adult care.
- A patient and family advisory committee is now being created to increase the MNCY SCN's reach.

In 2015, the Institute of Health Economics reported that the rapid fetal fibronectin test used in Alberta to predict preterm labour did not lead to better health outcomes or more appropriate transfers from rural to urban settings, calling into question the value of the test.[5] The MNCY SCN collaborated with a physician network member and the Alberta Research Centre for Health Evidence to conduct a systematic review to increase understanding of the effectiveness of tests for predicting preterm deliveries in rural areas.[6] Using this evidence, the SCN engaged with physicians, medical laboratories and clinical researchers to remove the rapid fetal fibronectin test from the list of available laboratory tests and, importantly, the adoption of a new clinical guideline for front-line clinicians to improve the appropriateness of care provided in Alberta. Even with extensive engagement, the SCN faced strong pushback once the fetal fibronectin test was not available. Additional opportunities for discussion and knowledge translation of the evidence for discontinuing the test were provided by the SCN. Evaluation of health outcomes is underway; maternal outcomes (preterm deliveries) 2.5 years after discontinuation of the test remain unchanged (Alberta Health Services physician billing database,

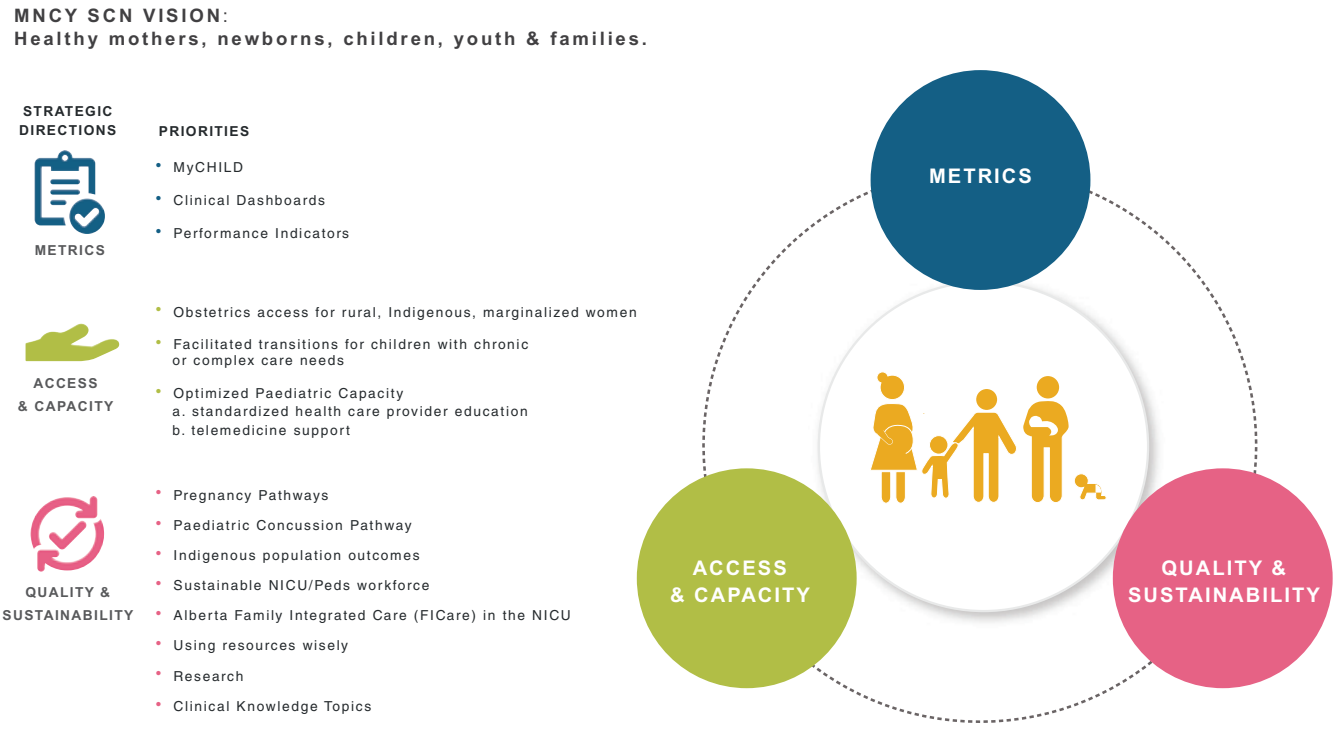
Discharge Abstract Database and National Ambulatory Care Reporting System, 2018), while saving the health system up to $1 million per year.[7]

A research study focused on Family Integrated Care (FICare) in the neonatal intensive care unit (NICU) was being designed as the MNCY SCN was forming.[4,8] This project was endorsed by the SCN and led by researchers from the Universities of Calgary, Alberta and Toronto. Alberta FICare is focused on integrating parents into NICU care earlier using relational communication, enhanced parent support and standardized education strategies. These interventions were found to improve both parent and infant outcomes (Alberta FICare: unpublished data, 2019). The MNCY SCN continues to collaborate with these researchers, enabling this successful project to obtain additional provincial grant funding and health system support to spread and scale this innovation to all NICUs in Alberta.

Before the creation of the MNCY SCN, separate groups of researchers and clinicians in Edmonton and Calgary were working in isolation, designing similar approaches to address the problem of how to transition adolescents with medically complex health care needs to adult services more effectively. This is a priority for the MNCY SCN; the network has served as a convener for cross-institutional collaborations and planning sessions that included researchers, front-line staff, patients and families.[4] Facilitation by the MNCY SCN led to the design and subsequent funding of a multisite, provincial clinical trial (currently underway) to test the effect of a Patient Navigator on relevant outcomes, and support scale and spread of this initiative across Alberta.[9]

The MNCY SCN quickly recognized the need to partner with and empower communities experiencing disparities in health outcomes and services. Funding from the Merck for Mothers global funding grant and Alberta Innovates was obtained to support the implementation of community-derived strategies to improve maternal health outcomes in 3 communities in Alberta.[4,10,11] Each community's strategy is specific to its needs: 1) the Pregnancy Pathways program provides safe housing for Edmonton's homeless, pregnant and parenting women, and connects mothers to additional services when they move out on their own.[11] 2) One of the Four Nations of Maskwacis Alberta (Montana First Nation) designed a community garden to support maternal health by providing fresh fruit and vegetables; provided learning opportunities for families to harvest, prepare and preserve the produce; and created a safe space to share cultural knowledge.[11] 3) The rural northern Cree community of Little Red River is enhancing maternal health and wellness for women by providing maternal–child health support workers with lived experience, home visits and community programming. They are also promoting their culture and language for the healthy social development of infants, children and families. Evaluation of these 3 projects is underway.

These 4 examples of how the SCN collaborated and partnered with its network also came with challenges and important



Strategic directions of the Maternal, Newborn, Child and Youth Strategic Clinical Network (MNCY SCN) strategic directions.

lessons learned. First, having a single provider of health care services (Alberta Health Services) makes a provincial network possible. However, local structures and supports must be considered as Alberta is geographically large with some sparsely populated areas, and a wide variety of health conditions are faced by maternal, infant, child and youth populations. Partnering with and empowering communities is essential. Second, even with evidence to support an action (e.g., discontinuation of the fetal fibronectin test) and extensive engagement, not everyone was reached. The SCN needed to go beyond its formal network to ensure all stakeholders were included, taking the time to make adjustments to achieve a workable solution, even at late stages of implementation. Finally, the strength of any network is its members. Engagement in broad collaboration to create strong partnerships that can bring innovation and efficiencies to Alberta's health care system is key to improving health outcomes.

The MNCY SCN's next steps are to continue fostering and building upon existing partnerships created through the work highlighted above. As the MNCY SCN develops, so does the need to be flexible and responsive in our partnerships with key stakeholders. At present, a patient and family advisory committee is being created to increase the MNCY SCN's reach and ability to collaborate with the maternal, newborn, child and youth populations and their families and caregivers. Strengthening the network through collaboration and partnerships will ensure that the SCN continues to bring value to Alberta's health care system.

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COMMENTARY

Digestive Health Strategic Clinical Network: **Striving for better care and outcomes in digestive health**

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Digestive diseases are a broad group of disorders that affect Canadians and their health care system. A 2010 report by the Economic Burden of Illness in Canada estimated that health care expenditures for digestive diseases represented 17.2% of the total direct health care expenditures in Canada.[1] The annual cost of digestive diseases in Canada was primarily driven by admission to hospital ($4.4 billion), drugs ($1.9 billion) and physician expenditures ($985 million).[1] Some digestive diseases are highly prevalent but have low morbidity: for example, a 2015 evidence review of MEDLINE and the Cochrane Database of Systematic Reviews found that irritable bowel syndrome (IBS) affects 7%–21% of the general population.[2] Other digestive diseases are less common but are associated with serious morbidity, high utilization of health care resources and mortality. For example, in 2010, in Alberta, the annual incidence, risk of surgery and in-hospital mortality for patients admitted to hospital for upper gastrointestinal bleeding secondary to peptic ulcer disease were 41.2 per 100 000 population, 4.2% and 3.7%, respectively.[3] A substantial portion of care comprises endoscopic procedures that investigate gastrointestinal symptoms, of which screening for colon cancer plays an increasing part.[4]

The burden of digestive diseases is forecasted to rise over time. The prevalence of inflammatory bowel disease (IBD) in Canada in 2018 was 0.7%, which represents 270 000 Canadians living with IBD.[5] By 2030, the prevalence of IBD is forecasted to rise to 1% of the general population, which would represent over 400 000 Canadians with IBD.[5] Over the next decade, the health care system could struggle to provide equitable and affordable health care to patients with digestive diseases.

In November 2016, the Digestive Health Strategic Clinical Network (DH SCN; www.ahs.ca/dhscn) was launched by Alberta Health Services (AHS) to improve the quality of care, analyze and eliminate unwarranted variation in care across the province, and optimize cost efficiencies associated with caring for patients with digestive diseases. The DH SCN is responsible for engendering innovation in the delivery of health care in line with the 6 dimensions of quality of care: acceptability, accessibility, appropriateness, effectiveness, efficiency and safety.[6] The vision of the DH SCN is to achieve the best digestive health for all Albertans by innovating and collaborating to create a person-focused, high-quality digestive health system through prevention, research and best practices (see figure). The foundation of the DH SCN is its core committee: a multidisciplinary team of health care professionals, patients and families, researchers, policy-makers and administrators.

KEY POINTS

- The Digestive Health Strategic Clinical Network (DH SCN) fosters a commitment to quality improvement on a provincial scale among the digestive health community.
- Strategic goals and priorities are derived from best available evidence, subject matter experts, patient advisors and stakeholder engagement with the digestive health community.
- Two major areas of work focus on 1) improving access for patients with digestive health concerns through the spread of primary care supports, including clinical pathways, phone advice and e-advice; and 2) reducing variation and improving the quality of endoscopy services through the province-wide adoption of the Canada-Global Rating Scale.

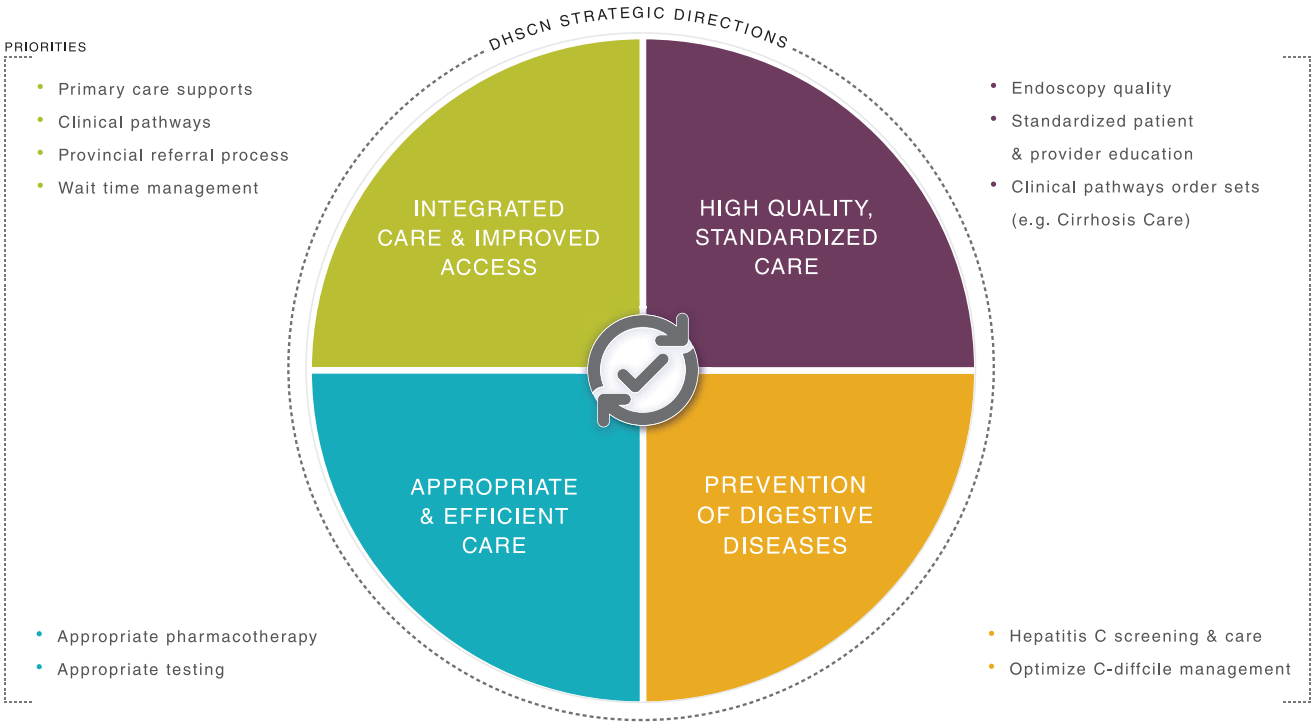
The core committee was responsible for establishing the Transformational Roadmap: a 5-year strategic plan outlining the goals, priorities and principles guiding the activities of the SCN (https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-dh-roadmap.pdf). The committee drew on evidence-based data derived from systematic literature reviews, analyses of administrative health care databases of provincial outcomes of digestive diseases and presentations from teams of local experts. Through several committee meetings, widely distributed surveys and several community events, over 290 stakeholders were engaged to define the direction of the SCN, identify the major gaps, define strategic goals and determine interventions required to address those challenges.

The DH SCN's Transformational Roadmap established 4 overarching strategic goals: integrate primary and specialist care and improve access; deliver high-quality standardized digestive health care; provide clinically appropriate and efficient care; and prevent digestive diseases. These strategic goals serve as the foundation for its key priorities (see figure and Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190599/-/DC1). The SCN has formed several multistakeholder working groups to study variation and disparity of outcomes, and to implement innovations in the delivery of health care. Appendix 2 (available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190599/-/DC1) presents the current initiatives of the DH SCN and their alignment to its strategic priorities and the 6 dimensions of quality of care.

One initiative aims to address the timeliness of access to specialty care for digestive diseases. Referral demands from primary care exceeded the capacity of gastroenterologists practising in Alberta such that nonurgent referrals had wait times of 9–24 months. The University of Calgary's Division of Gastroenterology and Hepatology partnered with primary care networks to co-develop primary care clinical pathways for low-risk, high-demand indications (e.g., IBS). These pathways have decreased wait times while maintaining safety and increasing primary care capacity.[7] The pathways comprise evidence-based algorithms to guide diagnosis and management for primary care providers with links to local resources, references and patient handouts. Communication between primary care and specialists in the use of these clinical care pathways are facilitated by Specialist LINK (same-day phone consultation with a gastroenterologist) and eReferral Advice Request (secure Web-based electronic messaging between family physician and gastroenterologist). A complete list of pathways can be found at www.specialistlink.ca/clinical-pathways/clinical-pathways.cfm. The DH SCN was awarded a Health Innovation Implementation and Spread grant by Alberta Health and AHS to spread the adoption of these primary care supports across Alberta.

A second initiative is the DH SCN partnership with the Alberta Colorectal Cancer Screening Program: implementing the Canada-Global Rating Scale at all 50 endoscopy units in the province. The scale is an evidence-based, patient-centred approach to assessing the quality of endoscopic services and will guide teams to identify opportunities for quality improvement.[8] Readiness assessments have been conducted with all sites, and implementation will be supported by an Innovation Learning Collaborative, modelled on the Institute for Healthcare Improvement Collaborative Model for Achieving Breakthrough Improvement.[9] The collaborative will bring together front-line endoscopy teams from across the province to work toward implementation of the Canada-Global Rating Scale, identification of areas for improvement, development of action plans, and identification and measurement of quality indicators to assess progress.

The DH SCN has encountered several challenges while trying to operationalize strategic priorities into actionable activities with clear benefits and outcomes. First, comprehensive Canadian data on the burden (e.g., prevalence, admission to hospitals and costs) of the number of conditions encompassing digestive diseases was lacking. Overcoming this challenge required



Alberta Health Services

Strategic directions of the Digestive Health Strategic Clinical Network (DH SCN).

partnership with data custodians and academic researchers to develop administrative health care databases on diseases and services (e.g., endoscopy). Second, evaluation of performance metrics was lacking. In response, the network is currently engaged in a process to prioritize quality indicators that measure the overall success of the DH SCN as a whole, as well as evidence-based evaluation metrics for each of the the network's initiatives (Appendix 1). Third, lack of infrastructure to support province-wide implementation has required local tailoring (e.g., adaptations of primary care supports), innovative approaches (e.g., collaborative learning and practice-based supports) and strategic partnerships.

Over the past 3 years, the DH SCN has strived to provide the best digestive health for all Albertans. A multidisciplinary team encompassing patients and their health care providers led a widespread engagement of stakeholders to define the strategic priorities of the network that include primary care–specialist integration, appropriateness, accessibility, quality and standardization of care, prevention and optimization of cost efficiencies. Integrating these activities with research generates a cycle of knowledge that serves as a vehicle for implementation, spread and scale of interventions that improve the health system for patients with digestive diseases.

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COMMENTARY

Kidney Health Strategic Clinical Network: Driving positive change to optimize kidney health in Alberta

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Chronic kidney disease (CKD) affects 12% of adults in Alberta,[1] encompassing a spectrum of disease from mild and asymptomatic to end-stage kidney disease characterized by a dramatic reduction in quality of life, adverse clinical outcomes and substantial strain on patients and their caregivers. Although most patients with CKD are managed in primary care,[2] more advanced disease requires specialized care that may include dialysis, transplantation or conservative symptom management. The annual cost of health care in Alberta is $14 600 per patient with CKD,[3] and dialysis costs per patient vary from $55 000 (peritoneal dialysis) to $100 000 (hemodialysis) annually, with lower costs for a kidney transplant ($22 000 annually after the first year).[4] The direct and indirect financial burden to patients and their caregivers is also considerable.[5] The prevalence of Stage 3 and 4 CKD has increased by 7.1% over the past 2 years,[6] making it a priority to prevent and manage CKD, optimize health outcomes and ensure sustainability of the health care system. The Kidney Health Strategic Clinical Network (KH SCN; www.ahs.ca/khscn) was launched in January of 2016 to provide a unique platform where patients, clinicians, health care administrators, front-line staff, health researchers and policy-makers jointly identify, prioritize and launch new initiatives.

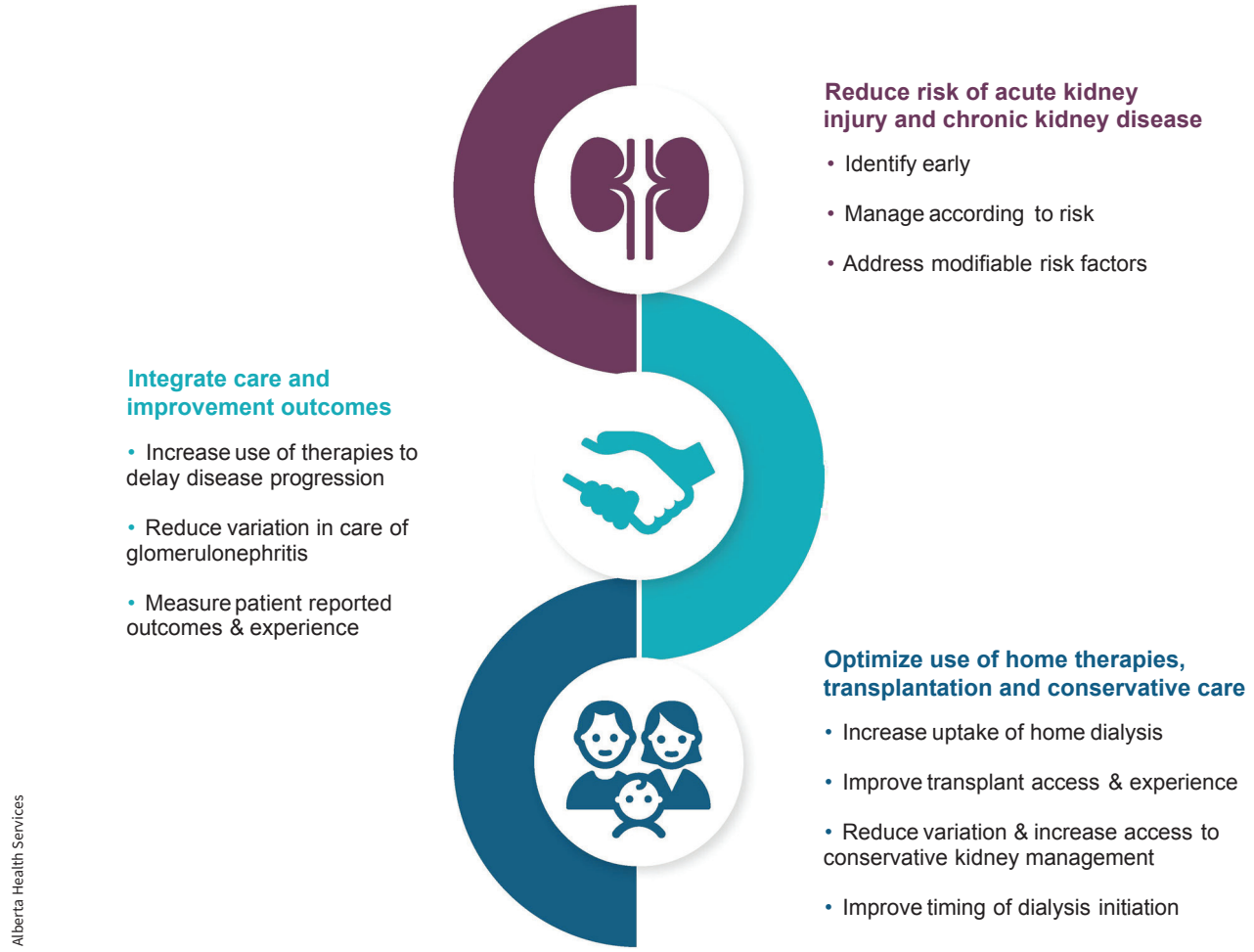
The KH SCN structure builds on lessons learned from SCNs that were established earlier and comprises a Leadership Team, a direction-setting 40-member Core Committee and the Scientific Office that ensures activities are evidence-based, coordinated and appropriately evaluated. The KH SCN incorporates and partners with several well-established entities. Provincial delivery of specialized kidney care is through Alberta Kidney Care, which comprises the northern and southern programs, and the regional transplant programs, each with existing organizational structures. These entities are foundational, and partnerships are facilitated by dual participation because the members of the Leadership Team are members of the KH SCN Core Committee and vice versa.

KEY POINTS

- The Kidney Health Strategic Clinical Network (KH SCN) is dedicated to improving the kidney health of all Albertans.
- This is achieved through innovation facilitated by frequent, purposeful collaboration with patients and families, health care service providers and researchers.
- Priority projects have led to positive change, through extensive consultation following proven change management principles; they require ongoing commitment by all partners.
- Investing sufficient time to ensure full endorsement of the KH SCN's roadmap and projects by the broad kidney community, and providing comprehensive data on the state of the disease and clinical practices across the province, have been keys to success.

The Alberta kidney research community is internationally recognized, and includes Alberta Kidney Disease Network and key participation with the Can-SOLVE CKD Network (www.cansolveckd.ca). Leveraging these existing research resources has allowed integration of best evidence and research practices for all KH SCN activities. The SCN has strong partnerships with patient and caregiver advisors representing the full spectrum of kidney disease and geography, as well as with the Kidney Foundation of Canada. These partners are actively engaged, participating on our Core Committee and numerous projects to respect and integrate their voices. Through the Patient and Community Engagement Research program, the KH SCN is building capacity for patient-directed research as patients become part of the research team.[7]

The strong foundation of collaborative relationships facilitated the development of the Transformational Roadmap (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190573/-/DC1) and rapid project execution by the KH SCN. Specific strengths include research on patient priorities (www.cansolveckd.ca/research/theme-1/kidney-check), robust population-based data on the incidence and prevalence



Strategic priorities of the Kidney Health Strategic Clinical Network (KH SCN).

of CKD,[8,9] uptake of evidence-based treatment, and existing initiatives in research, quality improvement and patient advocacy. The SCN's Core Committee obtained input from more than 350 people to prioritize strategies by importance to patients, opportunity to improve patient outcomes and potential to improve efficiency in the health care system. This 10-month process included examination of available data and evidence, consultations with leaders and front-line staff, surveys to gather stakeholder feedback on proposed priorities and use of priority-setting tools in face-to-face meetings of the committee. The strategic goals and priorities are shown in the figure. The Transformational Roadmap was recently updated (summary, Appendix 2, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190573/-/DC1) to reflect achievements as described below and to reflect new priorities in prevention, integrating pediatric care and better transitions.

The first key achievement was the Starting dialysis on Time, At home, on the Right Therapy (START)[10] project, a partnership with Alberta Kidney Care. Its goals were to achieve a 5% absolute increase in the proportion of patients who received peritoneal dialysis within 180 days of starting dialysis province-wide, and a 5% absolute reduction in the proportion of outpatients who started dialysis with an estimated glomerular filtration rate greater than 9.5 mL/min/1.73 m^2. The process included a structured review embedded into the patient pathway to ensure patients were appropriately identified, assessed, educated and supported when choosing peritoneal dialysis. A custom data system was implemented provincially that captured reliable and timely data, and a quality improvement process addressed areas of variability. The proportion of patients who received peritoneal dialysis within the first 180 days increased from 25% to 32% ($p < 0.001$) with 6 of 7 participating sites showing growth. The proportion of outpatients starting dialysis earlier than the guideline decreased from 16% to 13%, with 3 sites exceeding their goals. Continuing efforts include a recent Physician Indicator report that provided customized audit and feedback data to each physician, and an opportunity for further physician discussion is planned. One difficulty encountered throughout this project has been finding and sustaining the resources required for detailed data collection.

A second key achievement has been the Living Donor Kidney Transplant initiative. The KH SCN launched a multifaceted initiative to optimize rates of living donor kidney transplants.

Education for patients and providers has been standardized across programs to ensure consistency. The 2 provincial transplant programs in northern and southern Alberta are structured differently, which has presented a challenge to standardization of services. However, there have been successes. Criteria for reimbursement of costs for donors have been revised to be more comprehensive, and a policy for donor wage replacement has been implemented for eligible employees of Alberta Health Services. The donor workup process continues to be optimized. Other KH SCN projects are outlined in Appendix 3 (available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190573/-/DC1).

A core supporting activity for all priorities is the development of Key Performance Indicators. In partnership with Alberta Kidney Care, the KH SCN has identified indicators to assess system performance and quality of delivery of clinical care. High-quality data are collected and used to monitor quality of care, determine the impact of new strategies, and identify opportunities for future improvement and intervention. Indicators are reviewed and updated by a Key Performance Indicators Committee to ensure alignment with the new priorities in the Transformational Roadmap.

A key lesson throughout has been recognition of the importance of a full and rigorous consultation process to develop a Transformational Roadmap that is fully endorsed by the kidney community and the time required for participants to understand the role of an SCN. Ensuring broad, meaningful physician engagement is critical to overcome potential barriers to deployment of changes to clinical care. Ensuring that priorities and initiatives are co-designed, actionable, acceptable and align with the interests of the operational groups that provide specialized kidney care is fundamental. As in many health care settings, the ongoing dynamic tension between the SCN and clinical operations requires close consultation and collaboration to ensure projects are implementable. Key facilitators include engagement and partnerships with health services researchers, facilitating provision of evidence to inform priority setting, and embedding research principles into evaluation and Key Performance Indicators. Committed, engaged patient advisors and patient advocacy groups were instrumental in identifying priority areas and projects. Finally, leveraging existing regional and provincial organization structures committed to optimizing care and outcomes, including transplant programs and Alberta Kidney Care, provided a foundational element on which to build feasible projects in the KH SCN.

The revised Transformational Roadmap will guide us to further transform kidney care in Alberta, and our first step will be to work with our various partners and committees to operationalize new priorities with updated goals and plans for achievement.

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COMMENTARY

Population and Public Health: Creating conditions for health and advancing health equity in Alberta

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Despite universal access to publicly funded physician and hospital care, wide disparities in health outcomes exist among communities across Alberta.[1] For instance, the age-standardized prevalence rate of diabetes is roughly 4.5 to 16.1 per 100 000 people across Alberta communities.[2] Variation in age-standardized rates of visits to the emergency department for mental and behavioural disorders ranges from 425.3 to 11 459.3 per 100 000 people among communities.[2] Furthermore, most conditions follow a social gradient: in general, people who are less advantaged have worse health.[3] The circumstances in which we live, the places where we spend our time and the social networks to which we belong have much greater effect on health than the medical care we receive.[4]

Improving population health is crucial to reducing the demands on curative health care and ensuring sustainability of the health system.[5] Before 2016, the Strategic Clinical Networks (SCNs) each had a specialized clinical focus (e.g., Critical Care and Surgery) and, therefore, did not have the mandate or expertise to focus on population health. Knowing this, the senior leadership of the Population, Public and Indigenous Health provincial program of Alberta Health Services (AHS) identified the need and funded the creation of the Population, Public and Indigenous Health Strategic Clinical Network (PPIH SCN; www.ahs.ca/ppihscn) in May 2016 with 2 distinct core committees, one focusing on population and public health and the other on Indigenous health,[6] functioning as 2 separate networks.[7]

The population health approach aims to improve the health of an entire population by measuring and addressing the overarching health needs of the population, and identifying and reducing health inequities among population groups.[8] The mission of the Population and Public Health arm of the PPIH SCN is to drive innovation that creates opportunities and conditions for all people in Alberta to reach their full health potential. The committee is a network of representatives from universities, provincial nonprofit organizations, professional associations, primary care providers, medical officers of health, provincial and federal government departments, AHS patient advisors, and public health and primary care programs. The committee meets quarterly, and members actively participate as collaborators, champion population and public health initiatives, and communicate with colleagues about the initiatives of the Population and Public Health arm of the PPIH SCN.

KEY POINTS

- Increasing pressures from public health threats, such as falling immunization and rates of cancer screening, the opioid crisis and widening health inequities, have refocused attention on improving population health.
- The mission of the Population and Public Health arm of the Population, Public and Indigenous Health Strategic Clinical Network (PPIH SCN) is to drive innovation that creates opportunities and conditions for all people in Alberta to reach their full health potential.
- Breaking down silos and finding new ways of working together to move forward in a coordinated and integrated way is required to truly improve population health outcomes and reduce health inequities in Alberta.
- By upholding population and public health as a strategic priority, the Population and Public Health arm of the PPIH SCN ensures that efforts to focus on promoting health across Alberta Health Services (including across all SCNs) and within communities themselves, are strengthened.

Using a participatory consensus-based approach,[9] the Core committee endorsed a Transformational Roadmap that identified 2 strategic directions, based on the World Health Organization's Ottawa Charter for Health Promotion,[10] as the focus on which to build priorities and actions: Strengthen Community Action and Reorient Health Services (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190601/-/DC1). Strengthen Community Action reflects the committee's recognition of the importance that social conditions outside the health system have in shaping immediate and long-term health, and the need to partner with communities to create sustainable change. Reorient Health Services envisions a future where health care facilities play a key role with community partners in addressing local population health needs, as well as immediate medical needs.

Since its inception, the Population and Public Health arm of the PPIH SCN has launched several initiatives to move forward on its strategic directions. The network collaborated with other partners of AHS to launch the new health equity page on the Alberta Community Health Dashboard: an interactive online interface that empowers Alberta communities to understand and take action on factors that determine how healthy people are in their communities.[1] The new page aims to advance health equity by providing some of the data required to understand risk factors for cancer and related chronic diseases in the context of associated social and economic conditions. The network has also been actively working in partnership with Alberta's new provincial electronic medical record system (Connect Care) to embed standardized screening and referral for social and preventive factors into the patient health record.

Another initiative focusing on social and preventative factors, Reducing the Impact of Financial Strain,[11] recognizes that income is one of the most powerful determinants of health and that intervening can have a profound effect on health outcomes.[5] This initiative is a scalable collaboration requiring partnerships between AHS, the Alberta Medical Association, Primary Care Networks and various community organizations that aims to reduce financial strain as a barrier to health. It is supporting primary care providers to screen for and respond to financial concerns among their patients, strengthening linkages to existing community services that provide supports to individuals experiencing financial strain, and assessing and building capacity among community members and organizations to address gaps. A fundamental component of the project evaluation will be assessing the process and effect of the collaborative work among partners and understanding the effect on providers, patients and their communities.

The journey to date for the network has not been without its challenges. At the time of its launch, the vision was to create an SCN that spanned population, public and Indigenous health. Shortly after its inauguration, all members of the network recognized that to address the broad and diverse areas of scope appropriately it was necessary to create 2 "arms" within the broader PPIH SCN. The 2 core committees (Population and Public Health and Indigenous Health) were thus created with a specialized focus and membership for each arm of the network while maintaining strong alignment between both arms (e.g., cross-appointed leadership roles). In addition, given that the role of each arm is to test and implement innovative solutions, this network was embedded within the already existing provincial program, which strengthens AHS' ability to identify pressing population and public health issues, collaborate with operational partners on workable solutions, sustain successful initiatives and test innovative approaches that span beyond the walls of the health system.

Another challenge has been breaking down silos to create shared understanding of the importance of population health and the role that the entire health care system has in improving population health outcomes and decreasing inequities. To begin to address this challenge, the network is launching a pan-SCN prevention initiative through which the Population and Public Health arm of the PPIH SCN can support AHS' 16 SCNs in new ways of working together to address population health improvements, including reducing commercial tobacco use and alcohol consumption.

Future directions include the development of quality indicators for the Population and Public Health arm of the PPIH SCN. The members of its core committee are participating in a robust consensus-building process to develop and refine candidate quality indicators across the broad scope of population and public health to select key indicators that will measure and track the ongoing progress in achieving the network's strategic directions. The Population and Public Health arm of the PPIH SCN provides the foundation for transformative innovations that can enhance conditions and opportunities for all people in Alberta that will lead to improved health outcomes for the entire population.

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COMMENTARY

Indigenous Health: Applying Truth and Reconciliation in Alberta Health Services

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Health inequities for Indigenous peoples arise from the multigenerational effects of colonization and need to be contextualized within the historical, political, social and economic conditions that have influenced Indigenous health.[1–3] Calls for action to address Indigenous inequities have been enshrined in the final report from the Truth and Reconciliation Commission of Canada, the *United Nations Declaration on the Rights of Indigenous Peoples* and the report from the Royal Commission on Aboriginal Peoples.[4–6] Alberta Health Services (AHS) has fully committed to partnering with Indigenous peoples to address the their unique health needs as part of the reconciliation approach.

A goal of the Indigenous health arm of the Population, Public & Indigenous Health Strategic Clinical Network (PPIH SCN; www.ahs.ca/ppihscn), launched in 2016, is to support AHS' commitment to closing the gap in health outcomes for First Nations, Métis and Inuit in Alberta. One of the missions of the network is to improve the health and wellness of Indigenous peoples by engaging them as equal partners in their own health, wellness and care at the individual, family and community level; exploring, identifying and embedding equitable, holistic and culturally safe health practices; and acknowledging and addressing health inequities rooted in the determinants of health.[7]

To deliver on this mission, an Indigenous Health Core Committee was established to guide the work of the Indigenous health arm of the PPIH SCN and to foster relationships and interconnections among stakeholders. First Nation, Métis, Inuit peoples and organizations responded to a provincial expression of interest to establish a 55-member network who created the mission, guiding principles and strategic directions for this arm of the PPIH SCN. The committee includes Indigenous health allies representing Indigenous communities, provincial nonprofit organizations, universities, provincial and federal government departments, AHS Zones, provincial programs of Population, Public and Indigenous Health, and is grounded by Indigenous Knowledge Keepers. Indigenous Services Canada is a member and provides a federal perspective to help navigate existing jurisdictional complexities.

KEY POINTS

- Addressing health inequities experienced by Indigenous peoples requires meaningful relationship-building, investment of resources and empowering self-determination through innovation.
- Alberta Health Services recognizes the importance of acting upon the United Nations Declaration on the Rights of Indigenous Peoples and the Truth and Reconciliation Commission's Calls to Action, and the Indigenous health arm of the Population, Public & Indigenous Health Strategic Clinical Network is a key vehicle to deliver the required innovation.
- Changes to the Alberta health system must occur in partnership with Indigenous peoples.
- Trusting relationships are developed over time with combinations of meaningful engagement and showing accountability by undertaking agreed upon actions.

Indigenous voices are critical to decision-making, which is reflected in the PPIH SCN's governance structure and approach. The work of the Indigenous health arm of the PPIH SCN is grounded in collaboration with individual Indigenous communities in a strengths-based approach. Initiatives are selected and led by Indigenous peoples in support of meaningful, sustainable change, while also entrenching guiding principles into AHS' organizational memory.[7] Prioritizing opportunities, empowering discussions and ensuring that solutions are inclusive of Indigenous people's knowledge ultimately supports Indigenous sovereignty through self-efficacy, self-determination, autonomy and wholism.[8,9]

The PPIH SCN is positioned within the provincial Population, Public and Indigenous Health portfolio of AHS to leverage the wisdom and resources of the provincial health system's existing organizational structure. One department is the Indigenous Health Program whose partnership enables systematic scaling and spreading of proven innovations. Positioned in this manner

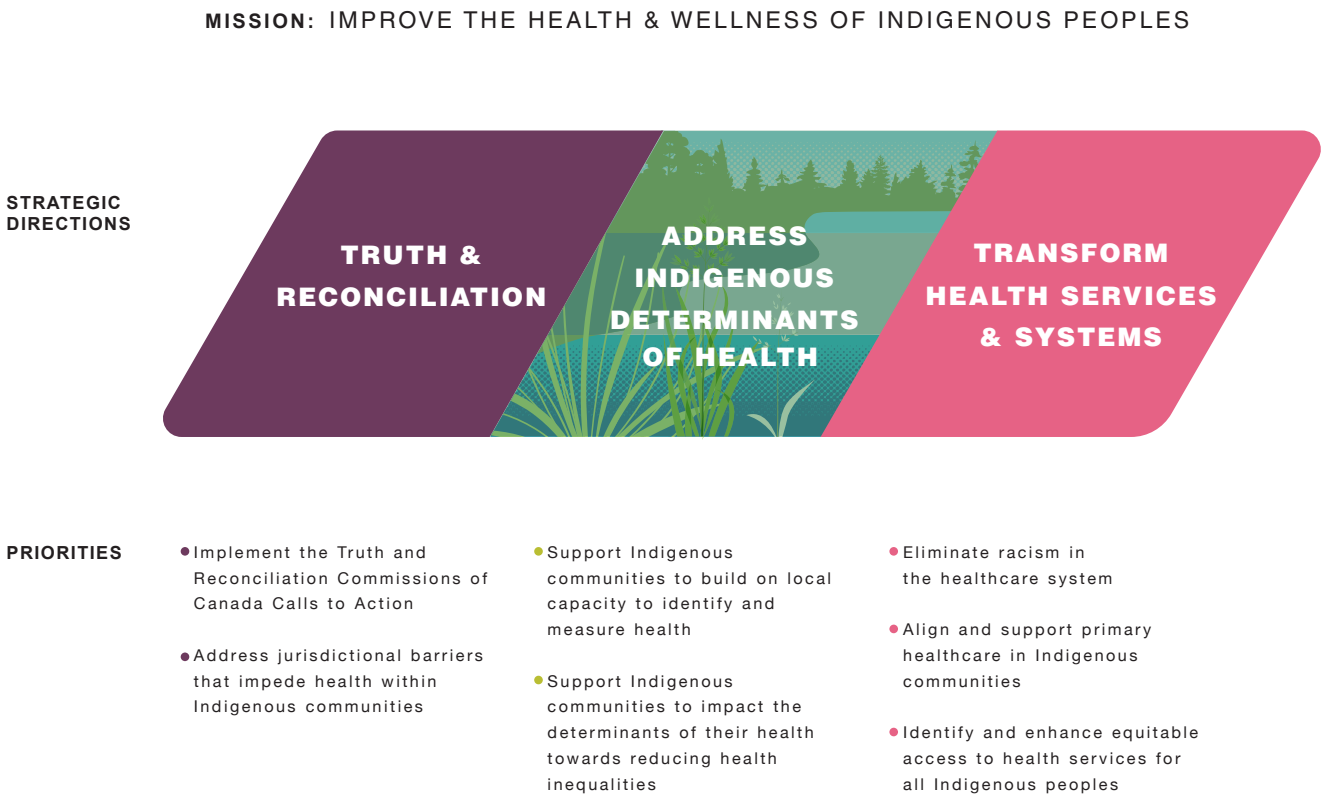
and within the broader SCN family, the Indigenous health arm of the PPIH SCN creates knowledge and capacity to develop and implement transformative initiatives to reduce inequities in Indigenous health. Linkages with the Wisdom Council, a 19-member council made up of public members from across treaty areas and AHS Zones, ensures alignment and provides guidance on the network's activities.

The Indigenous health arm of the PPIH SCN used experiential approaches (e.g., sociometry, graphic recordings and talking circles) to establish the necessary platform for raw, honest and heartfelt sharing among members of the Core Committee. Respecting the diversity among Indigenous groups in Alberta was a key directive from these discussions because the historical and contemporary experiences of First Nation, Métis and Inuit people varies across Alberta. A critical lesson for a large health system to learn is the potential harm of taking a pan-Indigenous approach to health without respecting these differences.

The PPIH SCN's Indigenous Health Transformational Roadmap[7] envisions a path of partnership to take collective action in 3 strategic directions (see figure): Truth and Reconciliation Calls to Action, Transform Health Services & Systems, and Address Indigenous Determinants of Health. Guiding principles include recognizing the need to build sustainable actions to improve health while simultaneously embracing traditional knowledge and practices, and realizing Indigenous peoples' health care rights and knowing the distinct health care needs of all Indigenous peoples in the province.

The Transformational Roadmap (https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-ppih-ih-roadmap.pdf) has guided the Indigenous health arm of the PPIH SCN in implementing a diversity of projects to meet the identified strategic directions. The Prevention of Cancer among Indigenous Peoples and Vulnerable Populations grant aims to engage in projects for health innovation and cancer prevention that facilitate positive outcomes toward reducing the incidence of cancer and related modifiable risk factors. The multiprong approach includes projects to build Indigenous community-level researcher capabilities through the Patient and Community Engagement Research internship program, increase rates of cancer screening and practices at primary care clinics with the Alberta Screening and Prevention program and facilitate sustainable Indigenous community-led projects via the Health Innovation and Cancer Prevention grant program. Success of the Patient and Community Engagement Research internship program to date includes 12 Indigenous graduates who produced 4 community-based research projects.

Additional initiatives include co-leading efforts with the AHS South Zone operations team to innovate an Indigenous Patient Navigation Model by learning from and adapting models, policies and partnerships from other jurisdictions, as a means of advancing transformation in the Alberta health care system. The project



Alberta Health Services

Strategic directions and priorities identified in the Indigenous Health Transformational Roadmap.

utilizes a co-design methodology to harness collective wisdom of Indigenous stakeholders and communities to ensure seamless integration of health services that improve patient experiences and health outcomes within Alberta. In addition, the PPIH SCN supports evidence-based initiatives to improve culturally safe service delivery across the province through scaling and spreading proven innovations. For example, the Extended Community Health Outcomes model implements a hub-and-spoke telehealth model for the assessment and treatment of infection with hepatitis C virus. The network is working with partners to spread the initiative to more Indigenous communities in Alberta and scale the model to include prevention, screening and treatment of other sexually transmitted and blood-borne infections.

The development of the Indigenous health arm of the PPIH SCN has had several challenges. One major challenge is accessing and sustaining the attention of colleagues in health care delivery to learn and understand the historical foundations that underpin the current state of Indigenous people's health. Truth and Reconciliation require a substantial investment in developing new relationships based on deep listening, compassionate understanding and transformative action. Action emerges through humility and the building of trusting relationships. This requires a commitment to take the time needed and to follow a pace that is not under the control of the system, while simultaneously under pressure to act.

Future directions include the development of performance indicators inclusive of both Indigenous and Western ways of knowing to measure and track the ongoing progress of the network. The Indigenous Health Core Committee is currently engaged in an extensive consensus approach to ensure the success of the network is defined by both world views (e.g., increased cancer screening rates among Indigenous peoples and increased reporting that cultural or traditional activities contribute to their overall health). The PPIH SCN envisions performance indicators that are mapped to the reach, effectiveness, adoption, implementation and maintenance[10] of projects and the overall impact of the network. The network is also committed to reporting on changes in health outcomes (e.g., Indigenous life expectancy) and health care utilization (e.g., rates of visits to the emergency department) to monitor ongoing progress in closing unjust and avoidable health inequities. Although the Indigenous health arm of the PPIH SCN is in its early days of trail blazing, it provides the foundation for transformative innovations in Indigenous health in Alberta.

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COMMENTARY

Primary Health Care Integration Network: Building bridges in Alberta's health system

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Canadian health care needs reform,[1] as evidenced by its poorer rankings than other nations with respect to access, safety, quality and health outcomes, as well as particularly poor performance on timely communication between hospitals and family physicians.[2] Furthermore, aging populations and increasing patient complexity threaten to overwhelm services and increase the costs of providing care.[2] Primary health care, which covers a spectrum of activities from first-contact episodic care to person-centred and comprehensive care sustained over time, is a critical piece of the overall health system.[3] Accumulating evidence suggests good primary health care can lower health care costs overall, improve population health through access to more appropriate services and reduce inequities.[4] Mechanisms that may account for the beneficial effects of primary health care on population health include greater access to needed services, greater focus on prevention and early management of health problems, and reduced unnecessary specialist care.[4]

In 2005, the first Primary Care Network was established in Alberta. Family physicians set out to provide a comprehensive range of services targeted to the local needs of a defined population. This fostered networked practices, facilitated change and served as a vehicle for the spread and scale of innovation across the health system.[5] As of September 2019 in Alberta, there are 3700 physicians working in 41 Primary Care Networks to provide primary care to most Albertans (about 3.7 million people).[6] The perspective of this field has changed, with the increasing prominence of the Patient's Medical Home model.[6] The model is defined by patients as the place they feel most comfortable seeking care (i.e., a family doctor or clinic they have a long-standing relationship with) and focuses on chronic disease management, health maintenance and prevention.[5,6] Under this model, many provinces are shifting toward integration of health services, offering care to Canadians in homes or community venues to improve the quality of care[6] and efficiency across the health system.[6]

In 2017, the Primary Health Care Integration Network (PHCIN; www.ahs.ca/phcin), was launched as a member of the Strategic Clinical Network (SCN) family with a goal to improve health outcomes and patient experience in Alberta by fostering innovative integration solutions for primary health care. Enhanced access to multidisciplinary health care teams and working collaboratively across care settings has increased Alberta's capacity to deliver care for patients' outside of hospitals.[5] The PHCIN works to link disconnected health care services to ensure patients and families have a safe and seamless journey as they transition across the system. A key understanding of the network is that every Albertan deserves care that helps them thrive in their own community, on their terms. Therefore, the PHCIN focusses on 3 clinical priority areas: Keeping Care in the Community, Linking to Specialists and Back and Home to Hospital to Home Transitions (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190595/-/DC1). To foster improvement in these clinical areas, it is necessary to create ideal conditions for an effective health system to function, which led to an additional area of focus — System Foundations for Integration.

Priority areas were chosen following an environmental scan, in-depth interviews, multiple focus groups and various learning collaboratives with key stakeholder partners to identify where gaps existed and where the network could best position supports for change. Detailed impact assessments, logic models for evaluating each priority area, and key performance indicators to measure whether the network is achieving its intended outcomes, are currently in development. Within each SCN, a Scientific Office embeds scientific rigor into each of the networks' areas of focus and facilitates research connections with academic communities. The Scientific Office drives innovation, embeds evidence and integrates findings into clinical operations and front-line practice.

KEY POINTS

- In Canada and Alberta, there is a long-standing history of tension between primary health care and the acute care system.
- The Primary Health Care Integration Network is a shared space for traditionally divergent groups, such as specialists and family physicians, to integrate shared-care models and collaboratively work toward more feasible and efficient approaches to care for Albertans.
- Overcoming the pull toward keeping to the status quo of health care delivery is critical to foster integration of services across primary and other health care settings.
- Strong leadership and creating shared visions of a desired future state, to help partners understand the price of not engaging with one another, can help overcome barriers to changing the existing state of health-system delivery of care.

The PHCIN is a common platform for other specialty-driven networks to integrate priority initiatives and innovative health solutions into primary health care. It is a shared space for traditionally divergent groups, such as specialists and family physicians, to integrate shared-care models and work collaboratively toward more feasible and efficient approaches to patient care, especially for those with chronic, comorbid conditions. Unfortunately, a long-standing history, both nationally and provincially, of tension between primary health care and the acute care system has challenged health care reform in Alberta.[3] Cutbacks in primary health care, lack of diversity in funding arrangements for providers, and separation of hospital and primary health care services in the early 1970s all contributed to this problem.[3] Overcoming these tensions among divided groups and systems is not an easy or comfortable process.

In Alberta, Primary Care Networks and other key partners are developing their own core structures and functions. Each have differing needs, and clear goals and objectives for each organization need to be solidified before any alignment between them can be realized. Bold leadership from both primary health care and the broader health system have been essential to bridge the gaps and break down the barriers that have entrenched the status quo. However, it has taken time to learn how to realize common pressure points, co-design shared solutions and identify collective areas of focus. The journey has been filled with ups and downs and many lessons learned. To navigate these challenges, the PHCIN is embedded both within AHS and broader provincial primary health care. Building relationships and trust to bridge the divide between clinical operations in the acute care system and primary health care partners is a key activity for the network. Acknowledging the differences in partnering clinical communities and recognizing the uniqueness of their approaches are integral to maintaining the overall foundation of trust that the network has built over the past several years. Engagement strategies (i.e., creating a shared vision) that help network partners understand the price of not engaging with each other, and creating a picture of a desired future state that is attractive enough to overcome the pull toward the status quo, are key.

Alberta has the advantage of a single health authority collaborating with partners on delivery of both primary and acute health care. However, integration is difficult to tackle.[7,8] Provincial efforts targeted at integration do not go far enough to address or rationalize systemic resources or align provincial work to address key barriers such as strategies for delivering primary health care to vulnerable populations such as First Nation communities.[9] These are gaps that the network aims to address. With the network officially launched and driving forward, all partners are moving toward a shared understanding of what integration truly means, and the need to shift behaviour and practice patterns to achieve effective and meaningful integration.

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COMMENTARY

Neurosciences, Rehabilitation and Vision Strategic Clinical Network: **Improving how Albertans see, think and live**

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In Canada, neurologic conditions are a leading cause of disability and result in substantial burden to patients and the health care system.[1] The 2017 Canadian Survey on Disability[2] showed that 20% of Canadians aged 15 years or older had 1 or more disabilities that limited their daily activities. A joint study by the Canadian National Institute for the Blind and the Canadian Ophthalmological Society reported that vision loss was associated with disability and loss of productivity costing about $15.8 billion in 2007 (about 1.19% of Canada's gross domestic product).[3] Rehabilitation can reduce disabilities by enhancing functional independence and quality of life. Many health conditions related to neurosciences, rehabilitation and vision are chronic and multifaceted, require complex care across the lifespan and multiple transitions between health care settings. There are regional variations and a lack of provincial structure for these services in Alberta. Alberta Health Services' (AHS) 16th Strategic Clinical Network (SCN) recognizes the synergy between the 3 streams that form its focus. We highlight the care gaps in Alberta that supported the creation of the Neurosciences, Rehabilitation and Vision Strategic Clinical Network (NRV SCN; www.ahs.ca/nrvscn) and describe the network's composition, challenges, engagement strategies and next steps.

Most neuroscience services in Alberta are provided in major tertiary care centres in Calgary and Edmonton. Rehabilitative care is offered in tertiary centres, regional health care facilities and in the community, whereas vision care is offered through some health care facilities but mostly in the community. Lack of an integrated systematic provincial approach can lead to poor patient outcomes, unsatisfactory patient and provider experiences, and increased costs to the health system, patients, families and caregivers.[4,5] Many current clinical care pathways do not recognize the potential value or benefit of rehabilitation in health and quality of life outcomes or potential prevention of surgical procedures.

Alberta Health Services approved the creation of the NRV SCN in November 2018 to build new and strengthen existing relationships and partnerships across the health care system to address a growing need for innovative and coordinated approaches in these particular health care areas. It is expected that the NRV SCN will catalyze improvements in equity of health care delivery, health system performance, patient outcomes, and the provincial implementation of innovations and research into practice. Opportunities to improve access to NRV services for Albertans may include telehealth technologies for diagnosis, assessment and follow-up; e-health specialist linkage; home health monitoring; and increasing availability of access to rehabilitation in community settings.

KEY POINTS

- A patient-centred approach guides and informs all Neurosciences, Rehabilitation and Vision Strategic Clinical Network (NRV SCN) activities.
- The NRV SCN aims to address the current gaps in care for the patient populations with key disabilities and enhance patients' functional independence.
- Network activities will be evidence based and focused on outcomes.
- Next steps include finalizing the Transformational Roadmap that will guide network activities for the next 3–5 years.

The NRV SCN will benefit from the learnings and experiences of the other 15 more established SCNs to guide its composition, processes, strategies and collaborative activities. The network's launch meeting confirmed its alignment with the AHS vision of "Healthy Albertans. Healthy Communities. Together.", and patients and clinical leaders highlighted potential opportunities to implement standardized, evidence-based and patient-centred care pathways and performance indicators across the province.

Composition of the NRV SCN leadership team and Scientific Office follow the standard structure for all SCNs. Engagement with medical, research, administrative and community leaders from each of the NRV streams ensures comprehensive representation on the network's governing core committee. An Expression of Interest was broadly disseminated to recruit individuals for the core committee from across Alberta. About

50 members were selected, representing all 3 streams, frontline clinicians from multiple disciplines, health care service leaders from urban and regional jurisdictions, researchers, community groups and the provincial health ministry (Alberta Health).

Consistent with the guiding principles of all SCNs, a top priority of the NRV SCN is to ensure that patient and family advisors are central to all network activities. Patient and family advisors broadly represent geographical location, gender, age and the 3 streams. They are members of the core committee and participate in the co-design of all the network's opportunities including development of the Transformational Roadmap. Each core committee meeting begins with a patient or family advisor sharing their story about their journey through the health system. This provides the context for patient-centred discussions, which have been described as "inspiring, grounding, encouraging, humbling and meaningful."

An advisory council composed of senior health care operations and research leaders from all 3 streams was formed to guide the initial development phase of the SCN. The council, unique to the NRV SCN, provides valuable historical context and insights to guide and direct the NRV leadership team to ensure a quality, integrated, system-wide approach in the planning and evaluation of provincial initiatives and innovations. The leadership team, core committee and advisory council work together to identify the current state, relevant opportunities and plans for the successful implementation of the Transformational Roadmap.

The primary output in the NRV SCN's first year is its strategic plan (the roadmap) that describes network priorities, key activities and indicators of success over the next 4 years. Achieving consensus on priorities by such a diverse group is predictably challenging. Broad and transparent engagement of network stakeholders, including patients, through numerous collaborative meetings and surveys resulted in a common understanding of the current state of health care in Alberta in terms of gaps and potential opportunities. These efforts were used to produce the network's foundational vision and mission statements and key strategic directions (see figure and Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190597/-/DC1). Next, the SCN will identify priorities and specific activities that will improve clinical practice through research and innovation, ensure integrated care across the patient journey, support evidence-informed decision-making and ensure timely and equitable access to care across the continuum.

Patient engagement will continue to be key in all decision-making regarding health service delivery, outcomes measurement, patient education and communication as the NRV SCN develops. The success of the Transformational Roadmap will be measured by comprehensive outcomes using the Quadruple Aim framework.[6] Progress will be broadly communicated through the NRV SCN website, newsletters, emails and peer-reviewed publications.

Alberta Health Services

Strategic directions of the Neurosciences, Rehabilitation and Vision Strategic Clinical Network (NRV SCN).

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COMMENTARY

Innovating to achieve service excellence in Alberta Health Services

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Innovation is essential for any learning, high-performing health system. It can enhance patient outcomes, improve patient and provider experiences, fulfil unmet care and service needs, eliminate redundant processes and technologies, and promote financial sustainability.[1] Innovation can also be difficult,[2] particularly when adopting initiatives at scale, which is necessary to realize the value of specific innovations. Rigorously evaluating, implementing and sustaining innovation necessitates fast-paced, failure-prone iteration while coordinating across organizational silos and overcoming change fatigue. In health care, challenges can be seen as innovation-related opportunity costs and investment needs compete for scarce resources. In response, Alberta Health Services (AHS) has established teams, resources and a clear process to ensure that Albertans benefit from health innovation. This strategy aims to leverage innovation to achieve service excellence and ensure a patient-focused, quality health system that is accessible and sustainable for all.

In 2012, the launch of the Strategic Clinical Networks (SCNs)[3] created a new platform for innovation in Alberta. The networks bring together diverse stakeholders to identify pressing problems, design and test solutions within clinical environments, and spread proven innovations across the province. In 2017, the Innovation, Evidence and Impact Team was retooled to be a coordinating hub that facilitates health innovation (new and improved way of doing valued things[4] in the fields of medical devices, diagnostics, information technology, methods of treatment and models of care). The team provides education and system navigation for both internal and external clients. Expertise is also offered to AHS staff and clinicians to support definition of value propositions; generation, synthesis and assessment of evidence; health economic and program evaluation; benefit and cash flow forecasting and measurement; and feasibility analyses. The team also monitors and responds to emerging innovations in areas such as artificial intelligence, virtual care and personalized health, and works with the SCNs to leverage organizational assets (e.g., a provincial Contracting Procurement and Supply Management Department and a single clinical information system). The collaborative efforts of the SCNs and the team create a synergy that capitalizes on their unique structures and talent and catalyzes innovation across the health system.

KEY POINTS

- Innovation, when aligned with health system priorities and implemented at scale, can improve outcomes, patient and provider experience, and financial sustainability of the health system.
- The Strategic Clinical Networks and Alberta Health Services' Innovation, Evidence and Impact Team prioritize, evaluate and advance health innovations that respond to the needs of Albertans. Together, they build capacity and competency within the organization to realize the value of innovation through adoption at scale.
- The Innovation-to-Action Lifecycle is an evidence-informed process that helps staff, clinicians and innovators move innovations from an idea, through testing, to adoption at scale (if appropriate) and evaluation to ensure adequate return on investment.
- System-level supports are necessary to innovate successfully. These include committed executive sponsor(s), engaged stakeholders representing all relevant perspectives, dedicated resources and a culture supportive of innovation.

Once established, the SCNs and the team worked to bolster capacity and capability for innovation across the system. Recognizing that the skills of members of the SCNs and mindsets around innovation are different, the Innovation, Evidence and Impact Team hosted workshops to clarify roles and expectations, build knowledge and expertise, and foster a culture of innovation. Education sessions were provided on topics such as economic analysis and criteria for effective decision-making. Linkages between the SCNs, the team and partners outside of AHS were strengthened.

At an organizational level, key issues, such as better hand-offs across the system, senior leader champions and dedicated resources, needed strengthening. A communication strategy was developed, and the team engaged with operational, clinical support and corporate divisions of AHS to address these issues. Furthermore, AHS and its partners created competitive funding programs to enable the SCNs to develop, evaluate and implement innovations of value. In 2020, experts from the Northern and Southern Alberta Institutes of Technology will assess the effect these efforts have had on innovation capacity, competencies and culture within SCNs, the organization and the broader provincial health innovation ecosystem.

A standard process was also required to give innovators and their sponsors more clarity on how to produce evidence of value, anticipate the needs of future decision-makers when seeking to scale ideas, and to mitigate common business and clinical risks that innovators face in health care.[5] Input from the SCNs helped the team to design and deploy the Innovation-to-Action Lifecycle (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190598/-/DC1). Incorporating concepts and suggestions[6] from Canadian leaders, such as MaRS EXCITE, Ontario's Office of the Chief Health Innovation Strategist and Innovation Boulevard, the lifecycle provides a consistent and transparent means to assess innovations that are proposed to AHS ("pushed innovation") and to enable AHS to seek innovative solutions ("innovation pull"). This ensures that factors critical for success[7,8] are addressed in a stepwise fashion. A match is made between priority problems in the health system and innovative solutions, committed sponsors who accept accountability are engaged, and then evidence generation and assessment proceeds to inform decisions and set the stage to facilitate adoption as appropriate.

The Innovation-to-Action Lifecycle enables both reactive and proactive tactics to innovation procurement.[9] In the most passive approach, pushed innovations submitted to the Innovation, Evidence and Impact Team are forwarded to internal stakeholders for vetting. Since its launch in early 2018, 81 innovations have been processed through the lifecycle. Interest was expressed in about 4% of submissions. In most cases, stakeholders found that proposed innovations did not address a problem in the health system, or the problem did not have sufficient priority to merit the work required to explore the possibility of uptake. Overall, however, the lifecycle has provided a standardized, high-capacity means for AHS to consider pushed innovation, while increasing the speed and consistency of decision-making and providing important feedback to innovators about the rationale behind decisions.

To pull innovation into the health system, the Innovation, Evidence and Impact Team has developed targeted methods to apply the lifecycle. Events such as reverse trade shows,[10] discovery days and early market-engagement sessions provide an opportunity to convene industry and health system stakeholders, communicate narrowly scoped priorities and showcase related innovations. These catalytic activities have proven fruitful, leading to follow-on work such as real-world evidence trials, data-access agreements and, in 1 instance, adoption of an innovation by the Alberta Aids to Daily Living program. Although resource intensive, these directed approaches offer the most promise for finding or co-designing innovative solutions, because they are characterized by a high degree of commitment from all vested executive sponsors and stakeholders, alignment with the SCNs' Transformational Roadmaps and current activities, engagement from innovators and industry partners, and eligibility for innovation-specific funding opportunities.

Realizing the value of innovation requires a way to find and test emerging solutions efficiently and effectively and add to or replace current practices with the best of these solutions. Although the strategic investments, changes and infrastructure put in place through the SCNs and the Innovation, Evidence and Impact Team have increased organizational competency and capacity, there is still work to do to. Future efforts will focus on increasing throughput of the Innovation-to-Action Lifecycle, enhancing the nimbleness and agility with which innovations are processed, and advancing the adoption rate of pushed and pulled innovation. As a learning health care organization, AHS is committed to building its capabilities to discover, adopt and scale innovative solutions to achieve its vision of "Healthy Albertans. Healthy Communities. Together."

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Strategic Clinical Networks:

From pilot to practice change to planning for the future

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Alberta first piloted Strategic Clinical Networks (SCNs) in 2012 and has leveraged them as a way to get evidence into care, rapidly test and scale proven health innovations, and bring stakeholders and health partners together to achieve common goals. For 7 years, SCNs have catalyzed health system improvement and innovation in Alberta, along the continuum of health care.[1,2] As noted in the introductory article, a recent analysis of cumulative costs, benefits and value of the SCNs showed substantial return on investment and cost savings.[3] The SCNs have also delivered substantial value by improving patient outcomes, safety, satisfaction and quality of life, and supporting clinical pathway development and health research that has brought more than $65 million in grants from outside the province.[3] Equally important returns include network contributions to system learning, change management experience, and enhanced physician, staff and public engagement.

As outlined in the articles in this supplement, the SCNs are working together with operational leaders and front-line clinicians to get evidence into practice, address pressing challenges that cross multiple health disciplines (e.g., transitions in care, surgical access and chronic disease), and operationalize system-wide improvements. The articles highlight the many successes of the SCNs, reflect on challenges the networks have encountered, and discuss strategies they used to overcome barriers, advance projects and implement changes in clinical practice on a provincial scale. Not all projects lead to measurable improvements in the health system, and several articles discuss the importance of rigorous evaluation and processes that enable teams to fail fast and adapt rather than sustain activities that do not provide value for patients or the health system.

Qualitative reviews of clinical networks in Scotland, the United Kingdom and Australia have shown that they evolved substantially over time in terms of network structure, processes and capabilities.[4] Alberta's experience reflects a similar evolution and strengthening of network capabilities.[4,5] This process of maturation is important because networks do not typically deliver improvements in health outcomes or savings to the health system in their first 2 to 3 years. However, as the networks build partnerships, identify strategic priorities and implement strategies, their ability to get evidence into care increases. Tools and processes that support idea generation, collaboration and co-design, and rapid, rigorous evaluation help advance improvements and innovations in the health system that provide high value.[6]

KEY POINTS

- Since 2012, Alberta's Strategic Clinical Networks (SCNs) have catalyzed health system improvement across the province, through effective partnerships, leadership and careful priority setting.
- The experience of the clinical networks offers valuable lessons for other health systems.
- Strategic Clinical Networks create capacity within health systems to rapidly and rigorously test health innovations, implement those that benefit patients, improve utilization of health services or contribute cost savings, and scale and sustain them.
- Alberta's networks have developed a 5-year plan that identifies areas of focus and actions to accelerate progress on priority health issues (e.g., integrated care, prevention, surgical access and sustainability of the provincial health system).
- The 5-year plan reflects stakeholder feedback and highlights the importance of leadership support, multilevel engagement, alignment and coordination with clinical, research and community partners, and robust measurement and reporting as key enablers for improvement in the health system.

Since 2015, about 20 projects that showed a positive and substantial effect for patients and the health system have been implemented on a provincial scale.[7] Ten of these are profiled in a 2019 report that described the effect of SCNs on health outcomes,[2] and all involved evidence-informed changes in clinical practice. The SCNs have helped to improve the use of appropriate antipsychotics in patients with dementia, supported the implementation of enhanced recovery after surgery protocols and the safe surgery checklist, improved access to diagnosis for patients with breast cancer and supported the implementation of a provincial stroke action plan (Stroke Care Alberta).[2] Developing integrated care pathways, improving access and patient experiences, and reducing unwarranted variation continue to be priorities for the networks.

In 2018, Alberta Health Services (Alberta's provincial health authority; AHS) asked the SCNs to develop a 5-year plan that would enable them to align their efforts, address key health challenges and maximize their collective impact. The intent was to

identify strategic areas of focus that would build on the work SCNs had done to date, advance progress on system-wide priorities and continue to drive performance and innovation in the health system.[8] To ensure the plan reflected the needs and perspectives of all network stakeholders, the SCNs began a comprehensive consultation and engagement process involving focus groups, meetings with SCN leaders and health administrators, input from core committees and patient and family advisors, and interviews with a range of stakeholders in administrative and clinical roles.[8]

Feedback shared during the consultation process reinforced known success factors for clinical networks (e.g., effective leadership, partnerships and communication, adequate resources and strategic alignment with partners[7]). The SCNs' commitment to patient engagement was identified as an area of strength as was their ability to connect stakeholders and work together to address health challenges that are difficult to resolve independently. Participants expressed confidence in the networks as a valued resource to get evidence into practice. Leadership support at an organizational level was identified as a critical enabler to support a change culture and evidence-informed decision-making. The SCNs' relationships with provincial and national organizations, operational units across all health zones and clinical champions at local sites were also recognized as important enablers for effective collaboration, project execution and implementation.

The consultation also revealed opportunities for improvement. Participants acknowledged the need for greater coordination across networks and multilevel engagement strategies that reach leadership in Alberta's health zones, local sites, front-line providers, and patients and their families. They emphasized the importance of communication and coordination across networks, and the need to expand relationships with primary health care and community partners, research institutes and other health organizations.[7] Stakeholders acknowledged the inherent tension that exists between SCNs and local operational priorities. Participants also suggested that shared planning and participation in quality, safety and operational committees would provide opportunities to align resources, clinical objectives and efforts for quality improvement. Finally, participants stressed the importance of robust measurement for all SCN initiatives, including quality indicators and reporting of clinical outcomes, savings to the health system and return on investment. Rigorous evaluation and robust data were considered essential to secure buy-in from health system administrators, successfully implement and

Areas of focus in the 2019–2024 Strategic Clinical Network Roadmap[8]

Area of focus	Description	Success factors, enablers and priorities*
Engage the people of Alberta	The SCNs commit to strengthening relationships with Patient and Family Advisors, engaging them as equal partners in decision-making and prioritizing work that improves health outcomes and patient and family experiences.	• Patient engagement • Collaboration • Patient- and family-centred care
Strengthen our connections	The Roadmap identifies opportunities to expand and strengthen partnerships (across the province and with national and international organizations), improve communication, align planning processes and reduce fragmentation across the system.	• Multilevel engagement • Collaboration • Communication • Leadership support • Alignment
Support integrated care across the patient journey	The SCNs will support integrated care models, development of clinical pathways and practice change that focus on patients, not diseases, and improves continuity of care, patient transitions, communication among providers and access to specialty care.	• Patient- and family-centred care • Multilevel engagement • Collaboration
Promote wellness, prevention and population health	The SCNs will work together to support health promotion and prevention, track population health indicators, and partner with provincial agencies and First Nation, Métis and Inuit communities to improve population health and health equity.	• Prevention • Equity • Quality indicators • Collaboration
Improve value and sustainability	The SCNs commit to identifying and eliminating low-value practices, supporting clinical appropriateness and developing indicators, accountability structures and incentives that support high-value care.	• Physician audit and feedback • Robust evaluation, measurement and reporting • Quality indicators
Advance health research and innovation	The SCNs will work to embed research into daily clinical practice and build capacity to rapidly identify, evaluate and implement proven health innovations (i.e., programs, care pathways and guidelines) that improve health outcomes and value.	• Multilevel engagement • Collaboration • Robust evaluation, measurement and reporting
Support of our people and processes	The SCNs will embed ongoing evaluation into our work, share best practices and continue to refine and strengthen our tools, structures and processes (e.g., quality indicators and reporting).	• Sharing best practices • Robust evaluation, measurement and reporting • Quality indicators • Communication

Note: SCN = Strategic Clinical Network.
*Based on stakeholder feedback, recommendations and lessons learned.

spread changes in clinical practice and build momentum for future innovation in the health system.

The 2019–2024 SCN Roadmap identifies 7 areas of focus that will inform the actions of Alberta's SCNs over the next 5 years (see table). These areas of focus build on the strengths and existing work of the networks and reflect the input, priorities and recommendations of network stakeholders. Within each area of focus, the SCN Roadmap identifies specific objectives and actions.[8] The SCN leadership is currently working with each network to develop an implementation plan that will define accountabilities, milestones and deliverables to ensure that the SCNs are able to track their progress. It is important to recognize that the SCN Roadmap reflects collective areas of focus that complement, but do not replace, the work each SCN is doing to support its Transformational Roadmap, which identifies priorities specific to each network.

Funding partnerships provide critical resources that support the work of the SCNs as they move from idea to pilot to full-scale practice change. In Alberta, the Partnership for Research and Innovation in the Health System with Alberta Innovates funds high-impact, evidence-informed projects that test the effect of interventions or strategies to close gaps in health or health care. Likewise, the Health Innovation Implementation and Spread Fund, a partnership with Alberta Health, supports provincial implementation of projects that have been shown to improve health outcomes and provide high value. This pipeline of funding and health research provides the critical support that is needed to advance health innovations beyond the pilot stage and achieve full-scale implementation.[2]

The SCNs' impact on clinical care and patient outcomes is evident across the health spectrum and is documented in recent evaluations,[2,3] which show a positive return on investment for Alberta's health system. However, other health care systems considering networks should be aware that these benefits are not realized immediately, as networks typically require 2 to 3 years to deliver a positive return.

The work of Alberta's SCNs is enabled by a single province-wide health system. However, the tools and approaches they use are applicable to other provinces and health jurisdictions. Patient and stakeholder engagement, leadership support, strategic alignment, funding partnerships and rigorous evaluation are important enablers, and provinces should evaluate the unique opportunities and barriers that exist within their local context.[4]

The SCNs will continue to build and strengthen relationships with patients and community, academic, health and industry partners, locally and outside the province, having identified areas of focus for the next 5 years that reflect lessons learned, stakeholder feedback, shared priorities and current opportunities to advance improvement and transformation in the health system.[8] Improving coordination and alignment across SCNs and among network stakeholders, sharing best practices, and ensuring rigorous measurement and reporting are expected to be pivotal in further increasing the networks' effect and progress in supporting a learning, high-performing health system.

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