Rapid Synthesis

Creating Rapid-learning Health Systems in Canada

Appendix B9: Nova Scotia

10 December 2018

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Rapid Synthesis:
Creating Rapid-learning Health Systems in Canada
Appendix B9: Nova Scotia
90-day response

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Table 1: Assets and gaps at the level of Nova Scotia's health system

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Engaged patients: Systems are anchored on patient needs, perspectives and aspirations (at all levels) and focused on improving their care experiences and health at manageable per capita costs and with positive provider experiences	1) Set and regularly adjust patient-relevant targets for rapid learning and improvement (e.g., improvements to a particular type of patient experience or in a particular health outcome) 2) Engage patients, families and citizens in: a) their own health (e.g., goal setting; self-management and living well with conditions; access to personal health information, including test results) b) their own care (e.g., shared decision-making; use of patient decision aids) c) the organizations that deliver care (e.g., patient-experience surveys; co-design of programs and services; membership of quality-improvement committees and advisory councils) d) the organizations that oversee the professionals and other organizations in the system (e.g., professional regulatory bodies; quality-improvement bodies; ombudsman; and complaint processes) e) policymaking (e.g., committees making decisions about which services and drugs are covered; government advisory councils that set direction for (parts of) the system; patient storytelling to kick off key meetings; citizen panels to elicit citizen values) f) research (e.g., engaging patients as research partners; eliciting patients' input on research priorities) 3) Build patient/citizen capacity to engage in all of the above	• Provincial patient experience survey is run by the Nova Scotia Health Authority across inpatient, primary care and rehabilitation patients with predefined targets across a number of domains • Chronic Pain Self-Management Program and other condition specific self-management programs provide some patients with the opportunity to be engaged in their own care (e.g., Chronic Pain Self-Management Program) • Engage4Health is a discussion board for patients run by the Nova Scotia Health Authority to provide patients with the opportunity to contribute to conversations of interest • Nova Scotia Office of the Ombudsman provides patients the opportunity to register a complaint if they feel they have been treated unfairly by a provincial or municipal government body • Community Health Boards have been established in 37 communities across the province, which provide opportunities for patients to be involved at a local level • 22 professional regulatory bodies all have established formal complaint systems • Patient Family Advisors have been established at hospitals and throughout health regions to support priority setting and decision-making in the health system • Gaps include less attention to engaging patients in their own health and care, and relatively less attention to meaningful engagement of patients in policymaking processes	• Patient Advisors for the Maritime SPOR SUPPORT volunteer to advise research into priority health -system issues (e.g., unnecessarily long hospital stays) o Patient Advisors are also closely involved in the governance of the Maritime SPOR SUPPORT Unit • The Maritime SPOR SUPPORT Unit provides support for researchers looking to engage patients by connecting them with patients, providing resources and tools for patient engagement, and providing training in patient engagement. • Nova Scotia Health Research Foundation grant competition requires patient engagement in the research application
Digital capture, linkage and timely sharing of relevant data: Systems capture, link and share (with individuals at all levels) data (from real-life, not ideal conditions) about patient experiences (with services, transitions and longitudinally) and provider engagement alongside data about other	1) Data infrastructure (e.g., interoperable electronic health records; immunization or condition-specific registries; privacy policies that enable data sharing) 2) Capacity to capture patient-reported experiences (for both services and transitions), clinical encounters, outcomes and costs 3) Capacity to capture longitudinal data across time and settings 4) Capacity to link data about health, healthcare,	• MyHealthNS allows family physicians or nurse practitioners to share personal health information with any Nova Scotian with a valid health card • Condition-specific registries (e.g., diabetes, cancer) as well as a provincial trauma registry have been established and are maintained by individual organizations, except for the trauma registry which is maintained by the provincial government • Patient-reported experience survey data is	• Open Data Portal holds data sets from across government departments (e.g., health, social and social determinants of health), which supports the potential to link data sets, however the extent to which this is occurring is unknown

Characteristic	Examples	Health-system receptors and supports	Research-system supports
process indicators (e.g., clinical encounters and costs) and outcome indicators (e.g., health status)	social care, and the social determinants of health 5) Capacity to analyze data (e.g., staff and resources) 6) Capacity to share 'local' data (alone and against relevant comparators) – in both patient- and provider-friendly formats and in a timely way – at the point of care, for providers and practices (e.g., audit and feedback), and through a centralized platform (to support patient decision-making and provider, organization and system-wide rapid learning and improvement)	collected at a provincial level (see engaged patients row) • Nova Scotia Health Authority publicly shares data and reporting about a wide variety of health programs, however this information is not available at the point of care for providers or through a centralized platform to support decision-making • Gaps include slow progress on achieving electronic health records, and limited effort to build system-wide analytic capacity to analyze data and to share it in a meaningful way with patients, providers and decision-makers	
Timely production of research evidence: Systems produce, synthesize, curate and share (with individuals at all levels) research about problems, improvement options and implementation considerations	1) Distributed capacity to produce and share research (including evaluations) in a timely way 2) Distributed research ethics infrastructure that can support rapid-cycle evaluations 3) Capacity to synthesize research evidence in a timely way 4) One-stop shops for local evaluations and pre-appraised syntheses 5) Capacity to access, adapt and apply research evidence 6) Incentives and requirements for research groups to collaborate with one another, with patients, and with decision-makers	• Some organizations have developed in-house capacity to conduct rapid-cycle evaluations • Gaps include a lack of distributed capacity across the health-system to access, adapt and apply research evidence, and less programmatic attention to providing incentives for research groups to collaborate with one another, with patients and with decision-makers	• REAL Evaluation Services Program operated by the Nova Scotia Health Research Foundation designed to provide rapid evaluations to help meet decision-makers' time constraints • Evidence Synthesis Community of Practice is run by the Maritime SPOR Support Unit and Nova Scotia Site of Cochrane Canada for academics and researchers • The REAL Evaluation Fellowship provides education and practical experience to build evaluation capacity among health-system stakeholders • REAL innovation program has been established by the Nova Scotia Health Research Foundation which works to develop new partnerships with potential funders, coordinates new research opportunities, and ensures they match with public and governmental priorities. • Provincial Research Ethics Board provides ethics approval for all research projects conducted within the Nova Scotia Health Authority, however some additional distributed capacity for ethics is associated with Dalhousie University o Board membership includes representation from each zone who meet on a weekly basis • Nova Scotia Health Research Foundation is undergoing a transition to Research Nova Scotia, which will act as a cross-government coordinator for research potentially providing the opportunity to collaborate across research

Characteristic	Examples	Health-system receptors and supports	Research-system supports
			groups, however whether this will continue remains to be seen • Gaps include a lack of distributed capacity across the system to produce and share research in a timely way
Appropriate decision supports: Systems support informed decision-making at all levels with appropriate data, evidence, and decision-making frameworks	1) Decision supports at all levels – self-management, clinical encounter, program, organization, regional health authority and government – such as a) patient-targeted evidence-based resources b) patient decision aids c) patient goal-setting supports d) clinical practice guidelines e) clinical decision support systems (including those embedded in electronic health records) f) quality standards g) care pathways h) health technology assessments i) descriptions of how the health system works	• Many groups provide recommendations to providers about optimal care, including: o Nova Scotia Health Authority issues a number of clinical guidelines for the blood coordination program o professional colleges including the College of Physicians and Surgeons and the College of Registered Nurses of Nova Scotia produce and maintain clinical practice guidelines and clinical standards o Nova Scotia Health Authority has established care pathways for select clinical areas (e.g., Quick Response Program; Home Again Program; and Care by Design) • Nova Scotia Electronic Health Program provides decision-making supports through clinical decision support systems to health professionals through electronic health records, where these have been implemented • Drug Evaluation Alliance of Nova Scotia supports decision-makers, practitioners and consumers to make informed choices about what drugs to fund, to prescribe and how to use them effectively • Gaps include less programmatic attention to the fulsome use of patient decision aids and patient goal-setting supports as well as the use of decision supports for decision-makers	• Weekly Lunch & Learn series run by the Maritime SPOR SUPPORT unit focuses on using information to support research and decision-making • The Discovery and Innovation Branch of the Nova Scotia Health Authority provides health economics consulting services including health technology assessments
Aligned governance, financial and delivery arrangements: Systems adjust who can make what decisions (e.g., about joint learning priorities), how money flows and how the systems are organized and aligned to support rapid learning and improvement at all levels	1) Centralized coordination of efforts to adapt a rapid-learning health system approach, incrementally join up assets and fill gaps, and periodically update the status of assets and gaps 2) Mandates for preparing, sharing and reporting on quality-improvement plans 3) Mandates for accreditation 4) Funding and remuneration models that have the potential to incentivize rapid learning and improvement (e.g., focused on patient-reported outcome measures, some bundled-care funding models)	• Research Nova Scotia Corporation Act was recently passed to support the amalgamation of research entities in the province, including the Nova Scotia Research and Innovation Trust and the Nova Scotia Health Research Foundation • Quality-improvement Information Protection Act supports the Department of Health and Wellness to facilitate system-wide provincial planning and improvements in patient safety • *Improving Patient Safety and Health System Accountability Act* requires Nova Scotia Health	• Nova Scotia Health Research Foundation funds research projects in a comparable way to Canadian Institute of Health Research's four pillars including health policy, health services, and health outcomes research on priority issues • Knowledge Sharing Support Award funds the dissemination of completed research that benefits decision-makers within the health system

Characteristic	Examples	Health-system receptors and supports	Research-system supports
	5) Value-based innovation-procurement model 6) Funding and active support to spread effective practices across sites 7) Standards for provincial expert groups to involve patients, a methodologist, use existing data and evidence to inform and justify their recommendations 8) Mechanisms to jointly set rapid-learning and improvement priorities 9) Mechanisms to identify and share the 'reproducible building blocks' of a rapid-learning health system	Authority and IWK Health Centre to report publicly on patient safety indicators • Quality Framework for a High Performing Health and Wellness System acts as a guide for all organizations to have consistency in their approaches to quality improvement • Some use of alternative payment mechanisms for physicians to incentivize value is in place, however this is not widespread across the system as a whole • Gaps include little widespread use of innovative funding and remuneration models to incentivize rapid learning and improvement, as well as a lack of mechanisms to support rapid-learning and improvement priorities or to identify reproducible building blocks	
Culture of rapid learning and improvement: Systems are stewarded at all levels by leaders committed to a culture of teamwork, collaboration and adaptability	• Explicit mechanisms to develop a culture of teamwork, collaboration and adaptability in all operations, to develop and maintain trusted relationships with the full range of partners needed to support rapid learning and improvement, and to acknowledge, learn from and move on from 'failure'	• None identified	• None identified
Competencies for rapid learning and improvement: Systems are rapidly improved by teams at all levels who have the competencies needed to identify and characterize problems, design data- and evidence-informed approaches (and learn from other comparable programs, organizations, regions, and sub-regional communities about proven approaches), implement these approaches, monitor their implementation, evaluate their impact, make further adjustments as needed, sustain proven approaches locally, and support their spread widely	1) Public reporting on rapid learning and improvement 2) Distributed competencies for rapid learning and improvement (e.g., data and research literacy, co-design, scaling up, leadership) 3) In-house capacity for supporting rapid learning and improvement 4) Centralized specialized expertise in supporting rapid learning and improvement 5) Rapid-learning infrastructure (e.g., learning collaboratives)	• The Health System Quality Branch of the Nova Scotia Department of Health and Wellness publicly reports results related to wait times, patient-safety indicators and serious reportable events, however this reporting does not include expected changes or lessons learned • Quality-improvement toolkit has been developed by the Nova Scotia Health Authority to provide organizations with the tools needed to establish quality and patient-safety teams • All organizations operating in the acute-care sector have quality-improvement initiatives and staff working to support internal learning • Experts in use of evidence and rapid learning have been brought in to present to the IWK Centre as well as the Regional Health Authorities on an ad hoc basis • Gaps may include less programmatic efforts to establish widespread competencies and a lack of centralized expertise in supporting rapid learning and improvement	• See "timely production of research evidence" for information on community of practice • Gaps include a lack of distributed competencies beyond the Nova Scotia Health Research Foundation and Nova Scotia Health Authority to support rapid learning and improvement

Table 2: Assets and gaps in the primary-care sector in Nova Scotia

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Engaged patients: Systems are anchored on patient needs, perspectives and aspirations (at all levels) and focused on improving their care experiences and health at manageable per capita costs and with positive provider experiences	1) Set and regularly adjust patient-relevant targets for rapid learning and improvement (e.g., improvements to a particular type of patient experience or in a particular health outcome) 2) Engage patients, families and citizens in: a) their own health (e.g., goal setting; self-management and living well with conditions; access to personal health information, including test results) b) their own care (e.g., shared decision-making; use of patient decision aids) c) the organizations that deliver care (e.g., patient-experience surveys; co-design of programs and services; membership of quality-improvement committees and advisory councils) d) the organizations that oversee the professionals and other organizations in the system (e.g., professional regulatory bodies; quality-improvement bodies; ombudsman; and complaint processes) e) policymaking (e.g., committees making decisions about which services and drugs are covered; government advisory councils that set direction for (parts of) the system; patient storytelling to kick off key meetings; citizen panels to elicit citizen values) f) research (e.g., engaging patients as research partners; eliciting patients' input on research priorities) **3)** Build patient/citizen capacity to engage in all of the above	• MyHealthNS enables patient access to laboratory results and other key health information about primary care • You're in Charge program is a chronic-disease prevention and management program run out of the primary-care sector designed to help teens manage their own conditions • Your Way to Wellness is a community-based program for those living with chronic disease and supports them in managing their own conditions • Some primary-care providers use patient decision aids or more informal approaches to support shared decision-making on an ad hoc basis • Gaps include lack of widespread engagement of patients in the primary-care sector beyond the work occurring at the systems level, and a lack of patient-engagement activities in organizations and policymaking specific to the primary-care sector	• Many of the initiatives identified in the systems table run by the Maritime SPOR SUPPORT Unit touch on primary-care topics though are not specific to the sector

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Digital capture, linkage and timely sharing of relevant data: Systems capture, link and share (with individuals at all levels) data (from real-life, not ideal conditions) about patient experiences (with services, transitions and longitudinally) and provider engagement alongside data about other process indicators (e.g., clinical encounters and costs) and outcome indicators (e.g., health status)	1) Data infrastructure (e.g., interoperable electronic health records; immunization or condition-specific registries; privacy policies that enable data sharing) 2) Capacity to capture patient-reported experiences (for both services and transitions), clinical encounters, outcomes and costs 3) Capacity to capture longitudinal data across time and settings 4) Capacity to link data about health, healthcare, social care, and the social determinants of health 5) Capacity to analyze data (e.g., staff and resources) 6) Capacity to share 'local' data (alone and against relevant comparators) – in both patient- and provider-friendly formats and in a timely way – at the point of care, for providers and practices (e.g., audit and feedback), and through a centralized platform (to support patient decision-making and provider, organization and system-wide rapid learning and improvement)	• Primary Healthcare Information Management Program supports the use of electronic medical records to manage patient information and allows the receipt of relevant information from hospitals including imaging results, lab tests and hospital reports • Privacy policies are in place to support sharing of data between health professionals and also permit patients to see who has viewed their information, however the extent to which primary-care patients find the information provided useful remains in question	• Select projects undertaken by the Building Research for Integrated Primary Healthcare in Nova Scotia network have piloted approaches to link data and research findings about health and social care as well as the social determinants of health (see 'timely production of research evidence' for more information)

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Timely production of research evidence: Systems produce, synthesize, curate and share (with individuals at all levels) research about problems, improvement options and implementation considerations	1) Distributed capacity to produce and share research (including evaluations) in a timely way 2) Distributed research ethics infrastructure that can support rapid-cycle evaluations 3) Capacity to synthesize research evidence in a timely way 4) One-stop shops for local evaluations and pre-appraised syntheses 5) Capacity to access, adapt and apply research evidence 6) Incentives and requirements for research groups to collaborate with one another, with patients, and with decision-makers	• None identified	• Building Research for Integrated Primary Healthcare is a Nova Scotia-based research network that examines ways to improve access to care for those with complex healthcare needs, including through: o the development of specific pilot programs for complex health needs, including trials for case management, screening for poverty and related social determinants, and improving medication use among older adults o the production of knowledge syntheses related to priority issues in primary care and care for those with complex health needs o comparative program and policy reports that examine select frameworks from other jurisdictions and their potential application to the Nova Scotian health system • Collaborative Research in Primary Health Care brings together cross-faculty researchers to create and synthesize existing knowledge on effectiveness of new approaches to primary healthcare • Gaps may include incentives and requirements for research groups to collaborate with one another, with patients and with decision-makers
Appropriate decision supports: Systems support informed decision-making at all levels with appropriate data, evidence, and decision-making frameworks	1) Decision supports at all levels – self-management, clinical encounter, program, organization, regional health authority and government – such as a) patient-targeted evidence-based resources b) patient decision aids c) patient goal-setting supports d) clinical practice guidelines e) clinical decision support systems (including those embedded in electronic health records) f) quality standards g) care pathways h) health technology assessments **i)** descriptions of how the health system works	• Building a Better Tomorrow Together program provides continuing medical education for primary health providers on team development and collaboration, including on understanding primary healthcare, chronic disease self-management support and introductions into culture competence • Some family physicians use patient decision aids to support individuals and their families to make care decisions • Professional colleges (e.g., College of Physicians and Surgeons and College of Registered Nurses of Nova Scotia) produce clinical practice guidelines related to the delivery of primary care	• None identified

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Aligned governance, financial and delivery arrangements: Systems adjust who can make what decisions (e.g., about joint learning priorities), how money flows and how the systems are organized and aligned to support rapid learning and improvement at all levels	1) Centralized coordination of efforts to adapt a rapid-learning health system approach, incrementally join up assets and fill gaps, and periodically update the status of assets and gaps 2) Mandates for preparing, sharing and reporting on quality-improvement plans 3) Mandates for accreditation 4) Funding and remuneration models that have the potential to incentivize rapid learning and improvement (e.g., focused on patient-reported outcome measures, some bundled-care funding models) 5) Value-based innovation-procurement model 6) Funding and active support to spread effective practices across sites 7) Standards for provincial expert groups to involve patients, a methodologist, use existing data and evidence to inform and justify their recommendations 8) Mechanisms to jointly set rapid-learning and improvement priorities 9) Mechanisms to identify and share the 'reproducible building blocks' of a rapid-learning health system	• Approximately 50 collaborative practice teams have been established in the province that include doctors, nurses, social workers, mental health professionals and others • A $12,000 stipend is available for family physicians who enrol their patients in MyHealthNS • Alternative payments have been put in place to incentivize telephone visits in primary care • $2.4 million investment has been earmarked for the creation of 20 new spaces for family-practice residents in the province • Gaps include a lack of centralized mechanism to jointly set rapid-learning and improvement priorities or to identify reproducible building blocks	• Building Research for Integrated Primary Healthcare network funds a wide range of research projects related to primary care and complex patients
Culture of rapid learning and improvement: Systems are stewarded at all levels by leaders committed to a culture of teamwork, collaboration and adaptability	1) Explicit mechanisms to develop a culture of teamwork, collaboration and adaptability in all operations, to develop and maintain trusted relationships with the full range of partners needed to support rapid learning and improvement, and to acknowledge, learn from and move on from 'failure'	• Changes to the models of care and their funding arrangements have supported the emergence of 50 collaborative family-practice teams	• Building Research for Integrated Primary Healthcare network aims to build capacity for research and create partnerships between primary care and other health-system sectors, as well as looking beyond the health system to connections with social services that are critical for those with complex needs such as education, housing and social services • Long-term goals of the Collaborative Research in Primary Health Care is to create interdisciplinary collaborative research by partnering with internal and external groups, however this effort is ongoing

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Competencies for rapid learning and improvement: Systems are rapidly improved by teams at all levels who have the competencies needed to identify and characterize problems, design data- and evidence-informed approaches (and learn from other comparable programs, organizations, regions, and sub-regional communities about proven approaches), implement these approaches, monitor their implementation, evaluate their impact, make further adjustments as needed, sustain proven approaches locally, and support their spread widely	1) Public reporting on rapid learning and improvement 2) Distributed competencies for rapid learning and improvement (e.g., data and research literacy, co-design, scaling up, leadership) 3) In-house capacity for supporting rapid learning and improvement 4) Centralized specialized expertise in supporting rapid learning and improvement 5) Rapid-learning infrastructure (e.g., learning collaboratives)	• None identified	• None identified

Table 3: Assets and gaps in the area of aging (or for the elderly population or a relevant 'problem focus,' such as frailty) in Nova Scotia

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Engaged patients: Systems are anchored on patient needs, perspectives and aspirations (at all levels) and focused on improving their care experiences and health at manageable per capita costs and with positive provider experiences	1) Set and regularly adjust patient-relevant targets for rapid learning and improvement (e.g., improvements to a particular type of patient experience or in a particular health outcome) 2) Engage patients, families and citizens in: a) their own health (e.g., goal setting; self-management and living well with conditions; access to personal health information, including test results) b) their own care (e.g., shared decision-making; use of patient decision aids) c) the organizations that deliver care (e.g., patient-experience surveys; co-design of programs and services; membership of quality-improvement committees and advisory councils) d) the organizations that oversee the professionals and other organizations in the system (e.g., professional regulatory bodies; quality-improvement bodies; ombudsman; and complaint processes) e) policymaking (e.g., committees making decisions about which services and drugs are covered; government advisory councils that set direction for (parts of) the system; patient storytelling to kick off key meetings; citizen panels to elicit citizen values) f) research (e.g., engaging patients as research partners; eliciting patients' input on research priorities) **3)** Build patient/citizen capacity to engage in all of the above	• Connect.ca is an online guide for individuals and communities across Nova Scotia, with older adults in mind, that aims to engage older adults in health promotion and disease prevention by providing an inventory of all recreational programs across the province • Seniors Advisory Council of Nova Scotia is made up of nine different organizations that represent 120,000 seniors • Consultations are undertaken by the Nova Scotia Department of Seniors on priority issues, to ensure that their views are considered in the development of policies, programs and services	• None identified

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Digital capture, linkage and timely sharing of relevant data: Systems capture, link and share (with individuals at all levels) data (from real-life, not ideal conditions) about patient experiences (with services, transitions and longitudinally) and provider engagement alongside data about other process indicators (e.g., clinical encounters and costs) and outcome indicators (e.g., health status)	1) Data infrastructure (e.g., interoperable electronic health records; immunization or condition-specific registries; privacy policies that enable data sharing) 2) Capacity to capture patient-reported experiences (for both services and transitions), clinical encounters, outcomes and costs 3) Capacity to capture longitudinal data across time and settings 4) Capacity to link data about health, healthcare, social care, and the social determinants of health 5) Capacity to analyze data (e.g., staff and resources) 6) Capacity to share 'local' data (alone and against relevant comparators) – in both patient- and provider-friendly formats and in a timely way – at the point of care, for providers and practices (e.g., audit and feedback), and through a centralized platform (to support patient decision-making and provider, organization and system-wide rapid learning and improvement)	• None identified	• Maritime Data Centre for Aging Research and Policy Analysis supports the collection of data on the health workforce dedicated to older adults, the access and use of services by older adults, and uses this information to predict future home-care needs o The centre trains graduate and undergraduate students in the analysis of public policies and quantitative analysis related to aging to support the translation of findings to local and provincial decision-makers for continuing care for older adults
Timely production of research evidence: Systems produce, synthesize, curate and share (with individuals at all levels) research about problems, improvement options and implementation considerations	1) Distributed capacity to produce and share research (including evaluations) in a timely way 2) Distributed research ethics infrastructure that can support rapid-cycle evaluations 3) Capacity to synthesize research evidence in a timely way 4) One-stop shops for local evaluations and pre-appraised syntheses 5) Capacity to access, adapt and apply research evidence **6)** Incentives and requirements for research groups to collaborate with one another, with patients, and with decision-makers	• None identified	• Nova Scotia Centre on Aging hosted by Mount Saint Vincent University which conducts applied research on age-related issues o The centre is affiliated with the Department of Family Studies and Gerontology which works in partner with the academic community, government, seniors and the private sector

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Appropriate decision supports: Systems support informed decision-making at all levels with appropriate data, evidence, and decision-making frameworks	1) Decision supports at all levels – self-management, clinical encounter, program, organization, regional health authority and government – such as a) patient-targeted evidence-based resources b) patient decision aids c) patient goal-setting supports d) clinical practice guidelines e) clinical decision support systems (including those embedded in electronic health records) f) quality standards g) care pathways h) health technology assessments i) descriptions of how the health system works	• The Positive Aging Directory is an annually updated comprehensive information directory produced by the Department of Seniors to give Nova Scotians easy information about the programs and services for older adults • Clinical practice guidelines for care of older adults are developed and disseminated by professional colleges • Group of IX Senior's Advisory Council provides information to government to support system decisions related to aging; members of the Group of IX Council must be affiliated with national bodies that meet with the Government of Canada through the Congress of National Senior's Organizations • Data from Inter-RAI home care assessments are collected and currently being used to construct client pathways	• None identified
Aligned governance, financial and delivery arrangements: Systems adjust who can make what decisions (e.g., about joint learning priorities), how money flows and how the systems are organized and aligned to support rapid learning and improvement at all levels	1) Centralized coordination of efforts to adapt a rapid-learning health system approach, incrementally join up assets and fill gaps, and periodically update the status of assets and gaps 2) Mandates for preparing, sharing and reporting on quality-improvement plans 3) Mandates for accreditation 4) Funding and remuneration models that have the potential to incentivize rapid learning and improvement (e.g., focused on patient-reported outcome measures, some bundled-care funding models) 5) Value-based innovation-procurement model 6) Funding and active support to spread effective practices across sites 7) Standards for provincial expert groups to involve patients, a methodologist, use existing data and evidence to inform and justify their recommendations 8) Mechanisms to jointly set rapid-learning and improvement priorities **9)** Mechanisms to identify and share the 'reproducible building blocks' of a rapid-learning health system	• Increase the geriatric office visit fee to $44.54, recognizing the time and effort involved in ensuring comprehensive and continuous care for the senior population • Expert advisory panel has been appointed to recommend improvements in quality of long-term care in Nova Scotia • Caregiver Benefit Program supports older adults to remain at home by providing a $400 a month stipend to qualifying caregivers for those with high levels of disability or impairment • Development of Action Plan for an Aging Population brings together funding and efforts from across government departments and both the health and social service sectors	• Age-Friendly Communities grant program supports the development of pilot research projects that focus on ensuring older adults are getting resources and supports to improve their lives

Characteristic	Examples	Health-system receptors and supports	Research-system supports
Culture of rapid learning and improvement: Systems are stewarded at all levels by leaders committed to a culture of teamwork, collaboration and adaptability	• Explicit mechanisms to develop a culture of teamwork, collaboration and adaptability in all operations, to develop and maintain trusted relationships with the full range of partners needed to support rapid learning and improvement, and to acknowledge, learn from and move on from 'failure'	• History of working in partnership and maintaining strong relationships across departments to address aging-related issues such as the development of the province's Dementia Strategy, housing and financial supports, as well as other integrated health and social services • Nova Scotia Department of Seniors hosted capacity-building workshops across departments to determine how they can effectively integrate efforts, strengthen partnerships and take a shared leadership approach to aging issues	• NS GovLab is a provincial social innovation lab in the process of being developed to test prototypes and policies to support the aging population and to create connections among researchers and decision-makers within the space, that will include: o capacity building amongst NS GovLab fellows on systems and design-thinking o CoCreation Team to design, facilitate and evaluate the lab's activities o self-directed community of practice among NS GovLab fellows
Competencies for rapid learning and improvement: Systems are rapidly improved by teams at all levels who have the competencies needed to identify and characterize problems, design data- and evidence-informed approaches (and learn from other comparable programs, organizations, regions, and sub-regional communities about proven approaches), implement these approaches, monitor their implementation, evaluate their impact, make further adjustments as needed, sustain proven approaches locally, and support their spread widely	1) Public reporting on rapid learning and improvement 2) Distributed competencies for rapid learning and improvement (e.g., data and research literacy, co-design, scaling up, leadership) 3) In-house capacity for supporting rapid learning and improvement 4) Centralized specialized expertise in supporting rapid learning and improvement 5) Rapid-learning infrastructure (e.g., learning collaboratives)	• Department of Seniors is responsible for publishing an accountability report each year which reports on the progress of any ongoing projects as well as evaluations of existing programs and services	• None identified

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