

Rapid Synthesis

Creating Rapid-learning Health Systems
in Canada

Appendix B4: Saskatchewan

10 December 2018



EVIDENCE >> INSIGHT >> ACTION

**Rapid Synthesis:
Creating Rapid-learning Health Systems in Canada
Appendix B4: Saskatchewan
90-day response**

Lavis JN, Gauvin F-P, Mattison CA, Moat KA, Waddell K, Wilson MG, Reid R. Appendix B4: Saskatchewan. In Rapid synthesis: Creating rapid-learning health systems in Canada. Hamilton, Canada: McMaster Health Forum, 10 December 2018.

Table 1: Assets and gaps at the level of Saskatchewan’s health system

Characteristic	Examples	Health-system receptors and supports	Research-system supports
<p>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</p>	<ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • The <u>Patients First Review (2009)</u> generated recommendations for improving patient experience and the Saskatchewan government released a report in 2015 to detail progress on patient-relevant targets • The Ministry of Health supports the <u>Patient and Family Advisor program</u> for engagement in development and implementation of health-system policies and programs • The Saskatchewan Health Authority (SHA) supports a number of advisory councils comprised of patients and family members <ul style="list-style-type: none"> ○ 20 <u>Patient and Family Advisory Councils</u> to improve patient-centred care and includes a First Nations and Métis council ○ Co-design with patients as key participants in <u>visioning sessions</u> for health-system and service-delivery planning <ul style="list-style-type: none"> ▪ Ceremonies, such as sweats, are used when patient engagement includes Indigenous peoples • SHA supports engaging patients in their own health through: <ul style="list-style-type: none"> ○ self-management (e.g., <u>LiveWell with Chronic Conditions program</u>); ○ access to personal health information (e.g., <u>Citizen Health Information Portal</u> will launch across the province in 2019 and include medical history access to laboratory results, vaccines/immunizations, prescriptions, and hospital and acute care visits); ○ patient decision aids (e.g., <u>Decision Point</u>); ○ services to help First Nations and Métis peoples navigate the system (e.g., <u>First Nations and Métis Health Service</u> provides ‘health navigators’, coordination and liaison, traditional supports, facilitation, interpretation and translation, and advocacy); and ○ establishing a <u>senior administrative role</u> focused on the patient experience of First Nations and Métis patients 	<ul style="list-style-type: none"> • <u>Saskatchewan Centre for Patient-Oriented Research (SCPOR)</u> provides training patients/caregivers, researchers, health professionals, and policymakers who wish to become involved in patient-oriented research • The <u>Institute for Indigenous Peoples’ Health</u> is located at the University of Saskatchewan

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Characteristic	Examples	Health-system receptors and supports	Research-system supports
		<ul style="list-style-type: none"> • Saskatchewan Health Quality Council supports patient engagement in the health system through: <ul style="list-style-type: none"> ○ patient and family advisor development ○ orientation and training ○ coaching and mentorship ○ strategy development and deployment ○ awareness and networking ○ evaluation and reporting ○ coordination of the Care Experience Measurement Working Group (within the Patient-and Family-Centred Guiding Coalition), which supports patient-experience surveys and membership in quality-improvement committees • The organizations that oversee professionals (e.g., College of Physicians and Surgeons of Saskatchewan), quality improvement bodies (e.g., Saskatchewan Health Quality Council) and ombudsman (Ombudsman Saskatchewan) engage patients, families and citizens and provide formal complaint processes • BetterHealthcare.ca shares patient stories of quality improvement (in transition) • Gaps may include less programmatic attention in primary care to supporting patient goal setting, self-management and shared decision-making 	
<p>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)</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • eHealth Saskatchewan supports and coordinates projects about the province's electronic health records <ul style="list-style-type: none"> ○ In December 2018, there will be 84 different data systems ○ The administrative information management system (AIMS) launched in October 2018 creates a single operating system for the province (originally 82 different non-integrated data systems) • Saskatchewan Health Quality Council supports the health system in surveying patients about their healthcare experiences (e.g., acute care unit-level, mental health and addictions, outpatient care, primary healthcare survey, and long-term care) by providing support for measurement design (e.g., analyzer tool) <ul style="list-style-type: none"> ○ Saskatchewan Health Quality Council is working with other ministries to capture health more broadly 	<ul style="list-style-type: none"> • eHealth Saskatchewan's Health Data and Analytics portal facilitates the secondary use of data related to electronic health records • Saskatchewan Health Quality Council has advanced analytic capacity for predictive dynamic modelling

Characteristic	Examples	Health-system receptors and supports	Research-system supports
	<p>decision-making and provider, organization and system-wide rapid learning and improvement)</p>	<ul style="list-style-type: none"> • <u>Strategic Health Information and Performance Support</u> within the Saskatchewan Health Authority has the capacity to link data about health and the social determinants of health • Gaps may include limitations to broader application of ‘hot spotting’ abilities (e.g., using data analytics to drill down to neighbourhood levels), which is likely a reflection of restrictions to data-sharing agreements, limitations to data sharing between ministries (e.g., health, education and justice) and limited capacity to analyze data • Gaps may also include limitations to interoperable electronic health records, likely as a result of having two electronic medical record platforms, which create challenges to linking with electronic health records • Gaps may include collection of health data for certain populations (e.g., creating governance and infrastructure to collect Métis health data, which includes Métis ownership of the data) 	
<p>Timely production of research evidence: Systems produce, synthesize, curate and share (with individuals at all levels) research about problems, improvement options and implementation considerations</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • Gaps appear to be a lack of one-stop shops for local evaluations and pre-appraised syntheses <ul style="list-style-type: none"> ○ The production of research evidence is included in the Saskatchewan Health Quality Council’s mandate, however, there are limitations in capacity 	<ul style="list-style-type: none"> • <u>Saskatchewan SCPOR</u> supports patient-oriented research • <u>Saskatchewan Health Research Foundation</u> supports independent health research • <u>The Indigenous Peoples’ Health Research Centre</u> develops capacity for community-based Indigenous health research • <u>University of Saskatchewan Research Ethics Boards</u> provide ethical review and approval including research involving the Saskatchewan Health Authority (Operational Approval)
<p>Appropriate decision supports: Systems support informed decision-making at all levels with appropriate data, evidence, and decision-making frameworks</p>	<ol style="list-style-type: none"> 1) Decision supports at all levels – self-management, clinical encounter, program, organization, regional health authority and government – such as <ol style="list-style-type: none"> a) patient-targeted evidence-based resources b) patient decision aids c) patient goal-setting supports d) clinical practice guidelines 	<ul style="list-style-type: none"> • HealthLine provides health information for patients (e.g., patient-targeted evidence-based resources, health and fitness quiz, decision tools and symptom tracker) • <u>medSask</u> for evidence-based drug information • <u>Online specialist directory</u> (Saskatchewan surgical initiative) provides information on practising surgeons, procedures they perform, wait time for specialists and surgery 	<ul style="list-style-type: none"> • None identified

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Characteristic	Examples	Health-system receptors and supports	Research-system supports
	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • Six evidence-based chronic disease <u>flow sheets</u> are embedded into both electronic medical record systems • 2007 book describing how the health system works (<u>Health Care in Saskatchewan: An Analytical Profile</u>) • Gaps may include lack of oversight for information systems and analysis, however, executive director positions have been created at the Saskatchewan Health Authority for: 1) Informatics; and 2) Clinical Standards 	
<p>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</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • <u>Continuous quality-improvement initiative</u> with a focus on the patient-first health system, using lean methodology and includes 1,500 continuous-improvement projects <ul style="list-style-type: none"> o <u>Lean-Improvement Leader Training program</u> was created by the Saskatchewan Health Quality Council and is now offered throughout organizations in the health system • Government of Saskatchewan’s <u>First Nation and Métis Policy Consultation Policy Framework</u> is a guiding framework for ministries, agencies and Crown corporations for decisions that may have an impact on Treaty or Indigenous rights • Development and <u>existing</u> Memorandums of Understandings with tribal councils • Saskatchewan Health Authority’s accreditation model applies its core values (e.g., people-centred care, service and excellence) and is based on the life cycle, which is divided into four quadrants (maternal/child, community/primary care, acute care and continuing care) to correspond to the four-year accreditation period • There are new opportunities for a value-based innovation-procurement model now that there is a single authority, which increases buying power • The <u>administrative information management system</u> (AIMS) launched in October 2018 and replaces 82 existing, non-integrated systems • <u>Health Quality Council Act (2002)</u> • The <u>Patients First Review (2009)</u> generated recommendations for improving patient experience and the Saskatchewan government released a report in 2015 to detail progress on patient-relevant targets 	<ul style="list-style-type: none"> • None identified

Characteristic	Examples	Health-system receptors and supports	Research-system supports
		<ul style="list-style-type: none"> • <u>Chronic Disease Management - Quality Improvement Program</u> is a partnership between the Ministry of Health, Saskatchewan Medical Association and eHealth Saskatchewan, and provides dedicated <u>funding</u> to support physicians to provide continuity of care to their patients with chronic conditions 	
<p>Culture of rapid learning and improvement: Systems are stewarded at all levels by leaders committed to a culture of teamwork, collaboration and adaptability</p>	<p>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’</p>	<ul style="list-style-type: none"> • <u>Continuous quality-improvement initiative</u> with a focus on the patient-first health system, using lean methodology and includes 1,500 continuous-improvement projects <ul style="list-style-type: none"> ○ Includes a series of <u>quality-improvement modules</u> to build lean tools • <u>Clinical Quality Improvement Program</u> is a 10-month course for health professionals • <u>Indigenous Wellness</u> course was designed using an Indigenous world view and is offered to health professionals as part of <u>Continuing Medical Education</u> 	<ul style="list-style-type: none"> • None identified
<p>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</p>	<ol style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> • <u>Saskatchewan Health Quality Council</u> co-designs training programs with system partners for building quality-improvement competency, including quality-improvement measurement design (i.e., understanding variation) • Daily <u>visual management boards</u> are used to measure outcomes and bring staff together (huddles), and visibility walls are within the public’s view • <u>A3 problem solving</u> is a structured process to identify and understand the problem 	<ul style="list-style-type: none"> • None identified

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

Characteristic	Examples	Health-system receptors and supports	Research-system supports
<p>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</p>	<ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • <u>Saskatchewan Health Quality Council</u> is involved in the co-design of primary healthcare survey for patients in primary-care practices, primary healthcare sites, public-health sites, or chronic-disease management programs • <u>Community developers</u> work with community groups to improve primary care 	<ul style="list-style-type: none"> • <u>Saskatchewan Strategy for Patient Oriented Research (SPOR) in Primary and Integrated Health Care Innovations (PIHCI) network</u> is one of 11 networks in Canada and brings together patients, researchers and policymakers to improve research, accountability and accessibility in primary healthcare
<p>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)</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • Through partnership with Alberta Health Quality Council, <u>BestPractice</u> panel reports have been created to generate knowledge for family physicians about their patient population • <u>Chronic Disease Management - Quality Improvement Program</u> is a partnership between the Ministry of Health, Saskatchewan Medical Association and eHealth Saskatchewan, and provides dedicated <u>funding</u> to support physicians to 	<ul style="list-style-type: none"> • Saskatchewan <u>SPOR PIHCI</u> network is one of 11 networks in Canada, designed to use patient-centred research to improve the delivery of primary and integrated healthcare

Characteristic	Examples	Health-system receptors and supports	Research-system supports
	<ol style="list-style-type: none"> 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) 	<p>provide continuity of care to their patients with chronic conditions</p>	
<p>Timely production of research evidence: Systems produce, synthesize, curate and share (with individuals at all levels) research about problems, improvement options and implementation considerations</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • None identified
<p>Appropriate decision supports: Systems support informed decision-making at all levels with appropriate data, evidence, and decision-making frameworks</p>	<ol style="list-style-type: none"> 1) Decision supports at all levels – self-management, clinical encounter, program, organization, regional health authority and government – such as <ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • None identified
<p>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</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • There is a demonstration project of a <u>new healthcare delivery model</u> in Prince Albert and Shellbrook, which was created by patients and family advisors, physicians, and health system leaders to improve care and the experience for 	<ul style="list-style-type: none"> • None identified

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Characteristic	Examples	Health-system receptors and supports	Research-system supports
support rapid learning and improvement at all levels	<ol style="list-style-type: none"> 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 	<p>Prince Albert and area citizens while improving the work experience of health professionals</p> <ul style="list-style-type: none"> ○ The model will be attentive to governance and relationships, physician leadership, quality-improvement capabilities, and compensation models that align with health-system priorities ○ A multi-year plan to improve quality of care and care experience for citizens and the experience for providers 	
<p>Culture of rapid learning and improvement: Systems are stewarded at all levels by leaders committed to a culture of teamwork, collaboration and adaptability</p>	<ol style="list-style-type: none"> 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' 	<ul style="list-style-type: none"> • There are examples of <u>primary care teams</u> working collaboratively with patients to improve care (e.g., Meadow Lake, Cudworth, Tisdale and Rural West) 	
<p>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</p>	<ol style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • 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 Saskatchewan

Characteristic	Examples	Health-system receptors and supports	Research-system supports
<p>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</p>	<ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • <u>Connected Care</u> focuses on patient flow and is moving towards team-based care for older adults to support community-based care and either prevent or reduce admissions to hospital and long-term care 	<ul style="list-style-type: none"> • None identified
<p>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)</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • <u>Connected Care Strategy</u> is part of the 2018-2019 Health System Plan and uses computer modelling to test possible interventions to improve patient flow and transitions from hospital to community care 	<ul style="list-style-type: none"> • None identified

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Characteristic	Examples	Health-system receptors and supports	Research-system supports
	<ol style="list-style-type: none"> 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) 		
<p>Timely production of research evidence: Systems produce, synthesize, curate and share (with individuals at all levels) research about problems, improvement options and implementation considerations</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • None identified
<p>Appropriate decision supports: Systems support informed decision-making at all levels with appropriate data, evidence, and decision-making frameworks</p>	<ol style="list-style-type: none"> 1) Decision supports at all levels – self-management, clinical encounter, program, organization, regional health authority and government – such as <ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • None identified
<p>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</p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • None identified

Characteristic	Examples	Health-system receptors and supports	Research-system supports
support rapid learning and improvement at all levels	<ol style="list-style-type: none"> 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 		
<p>Culture of rapid learning and improvement: Systems are stewarded at all levels by leaders committed to a culture of teamwork, collaboration and adaptability</p>	<ol style="list-style-type: none"> 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' 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • None identified
<p>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</p>	<ol style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> • None identified 	<ul style="list-style-type: none"> • None identified



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