Rapid Synthesis

Creating Rapid-learning Health Systems in Canada

Appendix B1: Federal government and national or pan-Canadian initiatives

10 December 2018

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Rapid Synthesis:
Creating Rapid-learning Health Systems in Canada
Appendix B1: Federal government and national or pan-Canadian initiatives
90-day response

Lavis JN, Gauvin F-P, Mattison CA, Moat KA, Waddell K, Wilson MG, Reid R. Appendix B1: Federal government and national or pan-Canadian initiatives. 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 the federal government and national or pan-Canadian initiatives

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) 1) Build patient/citizen capacity to engage in all of the above	• Patient Advisors Network supports a membership-based community of independent advisors – both patients and caregivers – who use lived experiences (and build capacity among those with lived experiences) to improve healthcare across Canada • Patients Canada champions healthcare change that matters to patients and the use of patient and caregiver stories in driving change • Patients for Patient Safety Canada – a patient-led program of the Canadian Patient Safety Institute – brings patient safety experiences to efforts to improve patient safety • Many national health charities host patient and family councils, networks and other initiatives • Many advocacy organizations involve patients and families, however, their connections to companies providing the products and services being advocated for are not always disclosed • Gaps may include less programmatic attention to supporting patient-led rapid learning and improvement	• Health Experiences captures patients' first-hand accounts of living with particular conditions • Canadian Foundation for Healthcare Improvement hosts a resource hub to support patient engagement in healthcare • James Lind Alliance supports groups of patients and clinicians in Canada (among other countries) to set research priorities for particular conditions • CIHR's Strategy for Patient-Oriented Research (SPOR), including its national networks and provincial SPOR SUPPORT Units, support patient engagement in all aspects of the research process, as well as build capacity for such engagement • Canadian Aboriginal AIDS Network and its partners builds capacity of Indigenous people with HIV/AIDS to participate in community-based research • Patient and Public Engagement Evaluation Tool (PPEET), and a broader Public Engagement Evaluation Toolkit, can be used to evaluate patient engagement (both in health research and in health-system transformation)
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	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	• Canada Health Infoway supports the development, adoption and effective use of digital health solutions • Canadian Institute for Health Information (CIHI) captures, analyzes and shares data about health systems and health, both through its own site and through 'Your Health System' (and a CIHI project is linking patient satisfaction and utilization data) • Gaps may include limited progress in achieving interoperable electronic health records across the country and less	• A SPOR national data platform will soon be launched to provide a single point of timely access to a broad range of harmonized healthcare data • InterRAI develops measurement instruments to support the collection of data about the characteristics and outcomes of persons served in many health- and social-services settings (outside Quebec) • Many national networks (and international networks with Canadian contributors) have developed platforms (or registries) to provide timely access to harmonized healthcare data about select categories of conditions or

Characteristic	Examples	Health-system receptors and supports	Research-system supports
longitudinally) and provider engagement alongside data about other process indicators (e.g., clinical encounters and costs) and outcome indicators (e.g., health status)	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)	programmatic attention to capturing patient-reported experiences	treatments, as well as benchmarks – select examples include: o neonatal intensive care o prescription drugs (international pharmacosurveillance network) o surgery o cancers (select) o spinal cord injuries • Commonwealth Fund conducts periodic patient (and physician) surveys to enable cross-country comparisons • Statistics Canada supports Research Data Centres to support the use of its rich data resources
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	• Gaps may include uneven capacity – within and across jurisdictions – in decision-makers' capacity to access, adapt and apply research evidence to support rapid learning and improvement	• Canadian Institutes of Health Research (CIHR) Institute of Health Services and Policy Research is in the fourth year of a five-year agenda to provide scientific leadership for rapid-learning health systems, and as part of this effort it has supported 'embedded' clinical researchers (clinician scientists) and health policy and services researchers (Health System Impact Fellows), and will be supporting a new program focused on 'embedded' clinical change leaders • Canadian Health Services and Policy Research Alliance has created a working group to support rapid-learning health systems • CIHR's Strategy for Patient-Oriented Research (SPOR), including its national networks and provincial SPOR SUPPORT Units, support patient-oriented research, and the 'Rewarding Success' program rewards rapid learning and improvement • CIHR-funded researchers (Monica Taljaard & Charles Weijer) are studying the ethical issues in rapid-learning health systems and collaborating with national funding agencies to prepare a guidance document on the topic • CIHR, Natural Sciences and Engineering Research Council (NSERC) and Social Sciences and Humanities Research Council (SSHRC) support the Networks of Centres of Excellence Programs to mobilize research, development and entrepreneurial expertise to address strategic priorities within and beyond health • Three one-stop shops provide free access to pre-appraised research evidence o ACCESSSS for reviews and studies that can inform clinical decisions o Health Evidence for reviews of effects that can inform public-health system decisions

Characteristic	Examples	Health-system receptors and supports	Research-system supports
			o Health Systems Evidence and Social Systems Evidence for reviews and economic evaluations that can inform health- and social-system decisions • McMaster Health Forum, Cochrane Canada, SPOR Evidence Alliance and other groups prepare rapid syntheses on health-system priorities • National Collaborating Centres for Public Health synthesize and share research on public-health priorities • Canadian Institute for Military and Veteran Health Research acts as a focal point for 43 universities working together to address the health research requirements of the military personnel and veterans • Correctional Service Canada has staff that prepare research reports to address the needs of prisoners in federal correctional facilities • Gaps may include less programmatic attention to build capacity for patient-led research
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	• Patented Medicine Prices Review Board conducts analyses to set manufacturers' prices for patented medicines • Gaps may include the lack of patient-targeted sites that provide resources that rate highly in terms of the evidence base underpinning them (based on assessments by the McMaster Optimal Aging Portal which, as a resource targeting older adults, is described in table 3)	• Canadian Agency for Drugs and Technologies in Health prepares health-technology assessments (for drugs, diagnostic tests, devices and procedures), which complements similar bodies operating in provincial and territorial health systems and in select hospitals • Many national health charities focused on particular categories of health conditions (e.g., arthritis, diabetes and heart and stroke) prepare patient-targeted materials • Public Health Agency of Canada (and its collaborators), Canadian Task Force on Preventive Health Care and many professional bodies (e.g., Registered Nurses' Association of Canada) and research groups prepare guidelines • Canadian groups prepare descriptions of how the health system works, both for Canada as a whole and for each province and territory (e.g., Ontario)
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	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)	• Conferences of Federal/Provincial/Territorial (FPT) ministers and deputy ministers of health, as well as related committees (e.g., Committee on Health Workforce) provide a platform for addressing shared challenges • FPT governments have agreed to improve access in one sector (home and community care) and for one category of conditions (mental health and addictions) and the federal government has committed to 10 years of funding to support these shared health priorities (starting in 2017-18)	• Gaps may include university incentives to publish in the types of high-profile journals that often don't publish 'negative' or very 'local' findings

Characteristic	Examples	Health-system receptors and supports	Research-system supports
organized and aligned to support rapid learning and improvement at all levels	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	• Federal government has agreed to work with provincial and territorial governments to improve access to treatment services, among other approaches, to address the opioid crisis • Federal government has agreed to working with Indigenous leaders to address their priorities (articulated in the First Nations Health Transformation Agenda, an Inuit-Specific Approach to the Canadian Health Accord, and the Métis National Health Shared Agenda) • Federal government has devolved the planning, funding, management and delivery of health programs in B.C. from the Government of Canada's First Nations and Inuit Health branch to the B.C. First Nations Health authority, which is governed by First Nations peoples • Advisory Council on the Implementation of National Pharmacare is exploring options for implementing a national pharmacare program	
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'	• Accreditation Canada uses accreditation and related tools to develop and sustain a culture of improvement in health and social services • Gaps may include the lack of national accreditation standards for rapid-learning health organizations and systems	• 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,	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)	• Five federally funded pan-Canadian health organizations develop competencies and use an array of other approaches to support improvement in select areas o Canadian Foundation for Healthcare Improvement and Canadian Patient Safety Institute support the spread of healthcare innovations and increases in patient safety, respectively (and the former has supported learning collaboratives in a number of areas, including the 'bridge-to-home spread collaborative') o Mental Health Commission of Canada and Canadian Centre on Substance Use and Addiction support the spread of evidence-	• None identified

Characteristic	Examples	Health-system receptors and supports	Research-system supports
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		based programs and tools in the area of mental health and addictions, respectively o Canadian Partnership Against Cancer supports the spread of evidence-based practices and policies in cancer • Many national groups develop competencies and use an array of other approaches to support improvement in select areas o Canadian Home Care Association and HealthcareCAN for select sectors (in this case, home care and specialty care primarily) o Diabetes Canada and Heart & Stroke for select conditions o Canadian Blood Services, Canadian Deprescribing Network and Choosing Wisely Canada for select treatments (in this case, blood and related donations, prescription drugs, and tests and treatments, respectively) o Children's Healthcare Canada for select populations (in this case, children and youth) o Canadian College of Health Leaders, Joule (Canadian Medical Association) for select cadres of health workers • Professional licensing bodies (e.g., College of Family Physicians Canada and Royal College of Physicians and Surgeons of Canada) have begun to include relevant competencies in training, competency assessment, and program accreditation	

Table 2: Assets and gaps in the primary-care sector at the level of the federal government and national or pan-Canadian initiatives

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	• None identified	• None identified
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	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	• None identified	• Canadian Primary Care Sentinel Surveillance Network collects and reports health information drawn from the electronic medical records of participating primary-care providers

Characteristic	Examples	Health-system receptors and supports	Research-system supports
encounters and costs) and outcome indicators (e.g., health status)	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)		
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	• Pan-Canadian SPOR Network in Primary and Integrated Health Care Innovations supports the development, evaluation and scale-up of new approaches to the delivery of integrated services • 12 CIHR-funded innovation teams study ways to access community-based primary care for vulnerable populations and chronic-disease prevention and management – for example, FORGE AHEAD is developing and evaluating community-driven primary healthcare delivery models that enhance chronic-disease management in First Nations communities in nine provinces • Pathways Implementation Research Teams study how to implement and scale up interventions that address Indigenous health inequities in suicide, diabetes/obesity, oral health, suicide and tuberculosis
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	• College of Family Physicians of Canada maintains 'The Patient's Medical Home' website to support family physicians in self-assessing and improving their patients' medical home, and it is developing a Canada-wide 'Research Ready' certification to encourage primary-care practices to participate in and support research	• 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	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	• Canadian Foundation for Healthcare Improvement has supported two learning collaboratives involving primary care, with one focused on elder-friendly models of care and another focused on access to specialist consultation • Gaps may include the lack of aligned arrangements to support five digital building blocks for primary care	• None identified

Characteristic	Examples	Health-system receptors and supports	Research-system supports
learning and improvement at all levels	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	o Care-coordination platforms o Decision-support tools o Point-of-care diagnostics o Remote monitoring o Virtual visits	
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'	• 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)	• Canadian Foundation for Healthcare Improvement supports learning, spread and scale collaboratives, including the INSPIRED spread collaborative (19 sites), and then INSPIRED scale collaborative to support hospital-to-home care for patients with late-stage chronic obstructive pulmonary disease	• 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) at the level of the federal government and national or pan-Canadian initiatives

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	• None identified	• Health TAPESTRY supports goal setting and achievement in select communities in Ontario and (with the support of local partners) in select other Canadian provinces
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	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	• None identified	• Canadian Longitudinal Study on Aging collects and shares data on a large cohort of older Canadians to improve our understanding of why some people age in a healthy way while others do not • interRAI develops measurement instruments to support the collection of data about the characteristics and outcomes of persons served in many health- and social-services settings serving older adults (e.g., most long-term care homes) • Canadian Primary Care Sentinel Surveillance Network is testing the use of a frailty index in

Characteristic	Examples	Health-system receptors and supports	Research-system supports
outcome indicators (e.g., health status)	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)		1,200 sentinel primary-care practices across Canada
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	• Networks of Centres of Excellence (NCE) program funds two NCEs focused on aging o AGE-WELL, which focuses on technologies that can optimize the well-being of older adults o Canadian Frailty Network, which focuses on improving care for frail older adults • Federal and New Brunswick governments have agreed to support applied research initiatives to improve the aging experience for seniors, and the federal government has committed to three years of funding to support this shared priority (starting in 2018) • Canadian Consortium on Neurodegeneration in Aging supports collaboration among dementia researchers • Baycrest's Centre for Aging and Brain Health Innovation supports the development, testing and dissemination of new technologies in 'aging and brain' health • Translating Research in Elder Care conducts research focused on improving the quality of life of residents in long-term care homes and the quality of work-life for their caregivers
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	• None identified	• McMaster Optimal Aging Portal provides patient-targeted, evidence-based resources to support self-management and shared decision-making
Aligned governance, financial and delivery arrangements: Systems adjust who can make what decisions	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	• Government of Canada has a National Seniors Council that provides advice on seniors' health and well-being, five national organizations have called for a	• None identified

Characteristic	Examples	Health-system receptors and supports	Research-system supports
(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	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	national seniors strategy, and many provinces and territories have developed seniors strategies or action plans • Government of Canada has a ministerial advisory board on dementia and is developing a national dementia strategy	
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'	• 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)	• Canadian Foundation for Healthcare Improvement has supported two learning collaboratives targeting older adults, with one focused on elder-friendly acute models of care and another focused on reducing antipsychotic medication use in long-term care homes	• National Initiative for the Care of the Elderly (NICE) aims to help close the gap between research evidence and practice for older adults

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