Rapid Synthesis

Creating Rapid-learning Health Systems in Canada

Appendix B6: Ontario

10 December 2018

McMaster University | McMaster HEALTH FORUM

EVIDENCE >> INSIGHT >> ACTION

Rapid Synthesis:
Creating Rapid-learning Health Systems in Canada
Appendix B6: Ontario
90-day response

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Table 1: Assets and gaps at the level of Ontario'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	• Patient and Family Advisory Councils (PFACs) or their equivalent (e.g., Ontario Citizens' Council; Patient and Caregiver Advisory Table for Home and Community Care) help to set direction at the Ministry of Health and Long-Term Care (hereafter ministry), in Local Health Integration Networks (LHINs), and for select sectors (specialty hospital care; long-term care), conditions (e.g., cancer; mental health and addictions) and treatments (e.g., prescription drugs) • Health Quality Ontario (HQO) is leading several initiatives on patient partnering in quality improvement (e.g., patient-engagement tools and resources, patient advisors program, and Choosing Wisely campaigns) • Ministry has a team of five staff to support patient engagement and a growing database of individuals who have signed up to act as patient advisors in the health system • Gaps may include the absence of requirements, incentives or guidance for the co-design of publicly funded programs and services; the lack of mandate for PFACs or their equivalent in some sectors and for most conditions, treatments (or health determinants) and populations; and the lack of deliberate approach to bringing diverse perspectives to existing PFACs	• Ontario SPOR SUPPORT Unit (OSSU) has supported three masterclasses on the conduct and use of patient-oriented research (for patients as well as providers, policymakers and researchers), as well as smaller patient-engagement projects and patient-partnership training workshops • Many research groups and 'intermediary groups' (e.g., Change Foundation) work with a standing citizen panel, and the McMaster Health Forum convenes citizen panels on a range of topics

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)	• MyChart and other patient portals provide patients with access to their health information (if they receive care at participating organizations), and 'my results' provides patients with diagnostic test data (if they receive laboratory services through LifeLabs) • Many organizations collect patient-experience data and these data are often then aggregated and reported on by Health Quality Ontario o e.g., hospitals collect standardized data using NRC Health templates, submit the data on a daily basis, and can easily access comparative data o e.g., home and community-care organizations collect standardized data through the Client and Caregiver Experience Evaluation Survey and through the InterRAI assessment tools, and make them available through the Client Health and Related Information System • Some organizations and one professional association (Registered Nurses' Association of Ontario through its NQuIRE program) have the staff and infrastructure to manage, link, analyze and present data to support learning and improvement • Some organizations have access to linked patient-experience data (e.g., organizations participating in practice-based research networks such as the University of Toronto Practice-Based Research Network (UTOPIAN); the 65 organizations across six LHINs that are participating in the Integrated Decision Support (IDS) initiative) • Other organizations have access to complementary structure, process and/or outcomes data (e.g., through registries) • A new ministry initiative (SPARK) is helping digital health innovators to provide provincial health information to patients and providers • Gaps may include the lack of standards for the types of patient-experience data to collect and how (e.g., about services, transitions and longitudinally, not just services) across sectors, conditions, treatments and populations, and ongoing uncertainty about what privacy policies mean for sharing data beyond the 'circle of care'	• Ministry funds Institute for Clinical Evaluative Sciences (ICES) to provide a data management and analytics platform, and ICES and other groups are laying the groundwork for more comprehensive datasets • OSSU has funded the ICES Data and Analytic Services to respond to data requests, including for data linkage, by decision-makers • Ministry commissions periodic, large-scale patient surveys (e.g., Primary Care Access Survey, which is undertaken by York University's Institute for Social Research) • Ministry funds Centre of Excellence in Digital Health Evaluation to evaluate digital solutions • Some research groups have experience in designing and conducting surveys or other types of studies to capture patient experiences
Timely production of research evidence: Systems produce, synthesize, curate and share (with	1) Distributed capacity to produce and share research (including evaluations) in a timely way	• Gaps may include: 1) limited incentives and no consistent standards for introducing innovations, evaluating them and scaling up proven approaches; 2)	• Ministry funds research groups to work on priority system challenges and requires them to use 25% of their funds to respond to emerging

Characteristic	Examples	Health-system receptors and supports	Research-system supports
individuals at all levels) research about problems, improvement options and implementation considerations	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	lack of a distributed research ethics and rapid-cycle evaluation infrastructure; and 3) uneven capacity among decision-makers to access, adapt and apply research evidence	research requests by decision-makers (called Applied Health Research Questions) • OSSU funds a joined-up approach across 12 research groups to provide: 1) data platforms and services; 2) methods support and development; 3) real-world (pragmatic) clinical trials; 4) health-systems research, implementation research, and knowledge translation; 5) career development in methods and health-services research; and 6) consultation and research services (with cross-cutting support for sex and gender issues and francophone and Indigenous populations), as well as one-off funding to patient- and impact-oriented research projects that involve 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	• Many groups use rigorous and participatory approaches to make recommendations to providers about optimal care o Cancer Care Ontario (through the Program in Evidence-Based Care) produces guidelines for cancer care o CORhealth makes recommendations about cardiac, stroke and vascular care o eHealth Ontario provide supports to providers for electronic health records that incorporate decision supports o Registered Nurses' Association of Ontario produces guidelines for optimal interprofessional practice and healthy work environments (and support their inclusion in order sets) o Health Quality Ontario produces 'quality standards' on a broad range of topics o Ministry produces care pathways for select clinical areas (funded using the Quality-Based Procedures approach) and organizational and program standards for public health o Ministry provides a rapid evidence service for government staff • Health Quality Ontario (HQO) and Public Health Ontario have a formal role, and many other government-supported groups play an informal role, in providing data and research to inform managerial and policy decision-making (e.g., to inform decisions about which	• Ottawa Hospital Research Institute (OHRI) Patient Decision Aids provide pre-appraised patient decision aids (which are also included in the Portal) • A book (available on the McMaster Health Forum website) describes how the Ontario health system works, including by sector and for select conditions, treatments and populations (and will soon be supplemented by an online course) • Gaps may include the lack of common language and framework being used by the many groups supporting the evidence-based implementation of effective practices

Characteristic	Examples	Health-system receptors and supports	Research-system supports
		prescription drugs and which non-drug technologies to pay for publicly) • Gaps may include the lack of a patient-targeted 'way in' to the 21 sites that publicly report data about the performance of (select parts of) the health system or to the decision supports available to them	
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	• Hospitals, long-term care homes and interprofessional team-based primary-care organizations are now required to prepare (following guidance from HQO), share and report on quality-improvement plans (and to incorporate equity considerations in these plans) • New financial arrangements are beginning to or have the potential to incentivize rapid learning and improvement (e.g., Quality-Based Procedures, bundled care models) and to focus attention on patient-reported outcome measures (e.g., EQ-5D-5L and Oxford Hip and Knee surveys to elicit patient-reported outcomes measures for hip- and knee-replacements) • A new value-based innovation procurement model has the potential to enable the more rapid assessment, sourcing, and integration into clinical practice and spread across the province of health technology solutions and processes • ARTIC (Adopting Research to Improve Care) provides funding and active support to spread across hospital sites the use of proven clinical interventions or practice changes that have already been successfully implemented in at least one site • Gaps may include: 1) lack of centralized coordination of efforts to use this framework, incrementally join up assets and fill gaps, and periodically update the status of assets and gaps at the level of the ministry (e.g., as new funding models are piloted), LHINs (e.g., as new reporting templates are developed for sub-regions), sectors, conditions, treatments (or health determinants) and populations; and 2) lack of mechanisms to set learning and improvement priorities or to identify and share the 'reproducible building blocks' of a rapid-learning health system (e.g., data-sharing agreements; agreements with research-ethics boards about rapid-cycle evaluations)	• None identified
Culture of rapid learning and improvement: Systems are stewarded at all levels by leaders	1) Explicit mechanisms to develop a culture of teamwork, collaboration and adaptability in all operations, to	• Emerging leaders are often technologically savvy and more aligned with a culture of rapid learning and improvement	• OSSU is proposing to use a rapid-learning health system as the organizing frame for the next phase in its evolution

Characteristic	Examples	Health-system receptors and supports	Research-system supports
committed to a culture of teamwork, collaboration and adaptability	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'	• Gaps may include that most health organizations do not have a culture of embedding rapid learning and improvement in their operations, of developing and maintaining trusted relationships with the full range of partners needed to support rapid learning and improvement, or of acknowledging, learning from and moving on from 'failure'	
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)	• Health Quality Ontario monitors and publicly reports on quality, and supports rapid learning and improvement • Many organizations in the specialty-care sector have business intelligence, clinical informatics, decision support, quality improvement, government relations and communications staff who can support different aspects of rapid learning and improvement • Some sub-systems, such as the cancer sub-system, have structures and processes to prioritize scale-up opportunities and ensure alignment between the health system and the research system • Gaps may include: 1) lack of agreement about the competencies needed (e.g., data literacy, co-design, scaling up, and leadership) and which are needed in all organizations versus in more centralized support units; 2) lack of learning collaboratives and other elements of the infrastructure needed to support rapid learning and improvement across LHINs, sectors, conditions, treatments (and health determinants) and populations (e.g., to inform what and how to sustain, and what and how to scale up); and 3) uneven understanding among decision-makers about how research can help them, how to find and use existing research evidence, and how to engage researchers when evidence is lacking	• IDEAS provides training in quality improvement to large cohorts of providers and managers • OSSU funds a provincial implementation science laboratory that works in partnership with Health Quality Ontario to design and test approaches to rapid learning and improvement at the clinical encounter level, and other centres of expertise (e.g., Centre for Implementation Research at the Ottawa Hospital Research Institute) either contribute to or complement this laboratory

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

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	• Patient and Family Advisory Councils (PFACs) help to set direction for community-governed primary-care teams • HQO, the Association of Family Health Teams of Ontario and the Alliance for Healthier Communities provide resources to support primary-care organizations in patient engagement • Gaps may include: 1) the limited supports for self-management and living well in primary care; 2) the limited supports and incentives for shared decision-making in primary care; 3) the lack of mandate for PFACs, or reporting about patient-experience data in quality-improvement plans, in primary care outside interprofessional team models	• 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)	• Some primary-care organizations collect patient experience data (e.g., using a survey developed by the Association of Family Health Teams of Ontario) • Health Care Experiences Survey (formerly the Primary Care Access Survey) is commissioned annually by the ministry, and the Commonwealth Fund's annual survey sometimes addresses primary care • HQO's MyPractice reports provide practice-level performance data for primary-care providers • Electronic Medical Record Administrative Data Linked Database (EMRALD) provides clinically relevant information derived from electronic health records maintained by family physicians practising in Ontario, which can be linked to administrative databases held at ICES • Gaps may include: 1) few primary-care organizations outside interprofessional team models have the staff and infrastructure to collect, analyze and present locally contextualized data to support learning and improvement; and 2) HQO's MyPractice reports are only sent to those who subscribe to them, and the reports don't yet provide comparators that reflect comparable patient populations or focus on indicators that have been prioritized by patients and primary-care providers	• None identified
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	• INSPIRE (Innovations Strengthening Primary Healthcare through Research) and BeACCoN (Better Access and Care for Complex Needs), both funded by the ministry, conduct research in primary care and use 25% of their funds to respond to emerging research requests by decision-makers (called Applied Health Research Questions) • Primary Health Care Patient Engagement Resource Centre provides tools and resources to support patient engagement in primary-care research

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	• Health Quality Ontario and other groups make recommendations to providers about optimal primary care • Gaps may include the lack of awareness among many primary-care teams of existing decision supports	• Centre for Effective Practice provides support for electronic health record integration and evidence use
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	• Interprofessional team-based primary-care organizations are now required to prepare, share and report on quality-improvement plans • LHIN sub-regions, and primary-care networks within them, will provide the basis for community-driven decisions about rapid-learning and improvement priorities, approaches, etc. (if the new governing party does not change this plan) • Gaps may include the lack of requirements for other types of primary-care organizations to prepare, share and report on quality-improvement plans, and the lack of incentives or supports for primary-care providers to enter data appropriately	• UWO's Centre for Studies in Family Medicine is working with the Alliance for Healthier Communities to support its use of a rapid-learning health system as the organizing framework for much of its work with community-governed primary-care organizations

Characteristic	Examples	Health-system receptors and supports	Research-system supports
	9) Mechanisms to identify and share the 'reproducible building blocks' of a rapid-learning health system		
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'	• Primary-care funding models have supported the emergence of more team-based primary care • Many community-care governed primary-care organizations are explicitly developing a culture of rapid learning and improvement • Gaps may include the limited focus of other types of primary-care organizations on developing a culture of rapid learning and improvement	• 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)	• Ontario College of Family Physicians has supported communities of practice and mentorship networks focused on opioid management and medical assistance in dying	• Gaps may include the lack of a distributed model of data and research supports across primary care

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

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

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)	• MyPractice reports enable physicians working in long-term care homes to confidentially see their prescribing patterns (including antipsychotics and benzodiazepines) in relation to peers across the province, and presents data on resident characteristics (e.g. aggressive behaviour scale, clinical indications, and percentage of new residents) • HQO provide various performance measures on long-term care and home care • Gaps may include that MyPractice reports are only sent to those who subscribe to them, and the reports don't yet provide comparators that reflect comparable patient populations or focus on indicators that have been prioritized by patients and providers	• None identified
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	• Labarge Optimal Aging Opportunities Fund provides seed funding to support innovative and interdisciplinary projects that aim to improve the lives of Canada's older adults • Schlegel-UW Research Institute for Aging conducts research to enhance care and improve quality of life for older adults
Appropriate decision supports: Systems support informed decision-	1) Decision supports at all levels – self-management, clinical encounter,	• Government of Ontario hosts a portal providing information about programs and services available to	• McMaster Optimal Aging Portal provides patient-targeted, evidence-based resources to

Characteristic	Examples	Health-system receptors and supports	Research-system supports
making at all levels with appropriate data, evidence, and decision-making frameworks	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	help Ontarians aged 65 and over to lead a healthy, active and engaged life • Choosing Wisely Ontario (a collaboration between Health Quality Ontario, Choosing Wisely Canada, and the Ontario College of Family Physicians) has a campaign in the long-term care sector focusing on appropriate prescribing with respect to antipsychotic use, diabetes care, and asymptomatic bacteriuria • HQO's Experiencing Integrated Care examines key touchpoints where patients 55 years and older are in transition from one healthcare provider to another, and where care coordination and communication is needed	support self-management and shared decision-making • Health TAPESTRY supports goal setting and achievement among older adults in select communities • Ontario Pharmacy Evidence Network (OPEN) produces and supports the implementation of guidelines, often with a focus on older adults (e.g., deprescribing guidelines for the elderly)
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	• Councils on Aging Network of Ontario (CANO) is a network of organizations taking leadership in education, advocacy, research and planning that enhance the quality of life of older adults in their communities • Ontario Interdisciplinary Council for Aging & Health seeks to enhance the well-being of older adults by promoting partnerships and collaboration among universities and stakeholders to improve interdisciplinary and interprofessional education, research, policy, and practice related to aging • Ontario Ministry for Seniors and Accessibility develops and delivers public services to older adults to improve their quality of life so they can be safe, engaged, active and healthy	• None identified

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	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'		
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)	• Ministry launched a new performance tool to increase transparency in long-term care for families	• Seniors Health Knowledge Network shares evidence-based care practices within all seniors' healthcare venues (particularly among long-term and community care staff) and informs policy development for service providers and care settings

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