Rapid Synthesis

Creating Rapid-learning Health Systems in Canada

Appendix B14: Nunavut

10 December 2018

Rapid Synthesis:
Creating Rapid-learning Health Systems in Canada
Appendix B14: Nunavut
90-day response

Table 1: Assets and gaps at the level of Nunavut'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	• Community Health Committees have been established to work with local healthcare teams, regional public health specialists and with staff at the Department of Health to set local health priorities and to drive the development, implementation and evaluation of health programs based on these priorities • Community Health Representatives engaged to work with a variety of health professionals (e.g., Health Promotion Team, other Community Program Staff such as Nurses and Social Workers) in the prevention of disease and maintenance of health in their communities while ensuring cultural values are observed • Office of Patient Relations established by Department of Health to receive complaints, investigate and resolve conflicts between patients and providers • Gaps may include less formal emphasis on engaging patients to help shape system priorities and targets based on their inputs, and a need for more explicit effort to support them to make decisions about their own health, their own care, or the organizations and systems that are responsible for delivering services to them	• Government of Nunavut, Nunavut Tunnngavik Inc., and Qaujigiartiit Health Research Centre in the process of assessing feasibility of developing a Strategy for Patient-Oriented Research (SPOR) and a SPOR SUPPORT (Support for People and Patient Oriented Research and Trials) Unit • Qaujigiartiit Health Research Centre has a mandate to facilitate community-driven health research projects • Nunavut Research Institute has established strong relationships with communities to support their engagement in research • Inuit Tapiriit Kanatami and similar organizations ensure that research conducted in the north, including in Nunavut, is anchored on the needs of Inuit communities, through advocacy and engagement campaigns, as well as through the release of research strategies focused on Inuit communities • Gaps may include limited progress in setting up supports for the production and use of patient- and community-oriented research
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)	• Department of Health is in the process of implementing a system-wide, integrated electronic health record that is available at most points of care, and provides access to a repository of clinical reports, individual patient information, laboratory results, diagnostic imaging orders and results, communicable disease information, inpatient and outpatient diagnoses, drug profiles and immunizations	• Nunavut Bureau of Statistics collects, records, analyzes and distributes statistical data on Nunavut to Nunavummiut and across Canada • Canadian High Arctic Research Station has been established in Cambridge Bay to support capacity to collect and manage data in Canada's Arctic region • Gaps may include similar capacity constraints identified for the health system, which includes nascent efforts in developing capacity for capturing, linking, analyzing, sharing and

Characteristic	Examples	Health-system receptors and supports	Research-system supports

encounters and costs) and outcome indicators (e.g., health status)	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)	• Office of Patient Relations regularly captures patient experience through complaints management service, reports complaints by issue (e.g., access to services, attitude of professionals), and uses this to inform system improvement for improving patient experiences
		• Population Health Information unit in the Department of Health collects, manages and reports information related to health-system utilization and health conditions both within and outside the territory
		• Nunavut Bureau of Statistics collects some data on disease burden and determinants of health, and the Department of Health uses these data to report on population health statistics that outline disease burden for a number of conditions
		• Annual report for 2017-18 outlined a number of efforts underway, including:
		  ○ development of a framework for identifying health-system data needs at regional and territorial level
		  ○ development of a Health Information System to build capacity for routinely capturing important health-system data that can be used to monitor progress towards achieving strategic aims
		  ○ increasing role played by the Population Health Information Unit in data analysis and sharing both locally and with external partners across the country (e.g., Canadian Council of Cancer Registries, the Canadian Chronic Disease Surveillance System, and the Canadian Congenital Anomalies Surveillance System for additional support)
		• Gaps may include limited progress in establishing Nunavut-specific legislation that would cover privacy of information contained in electronic health records, given the inter-jurisdictional nature of care provided in the territory (e.g., providers from multiple
			reporting on a range of data (e.g., patient-reported experiences, longitudinal data related to health, healthcare, social care and determinants of health)

Characteristic	Examples	Health-system receptors and supports	Research-system supports
		jurisdictions contributing to the delivery of services), and more generally nascent efforts in developing capacity for capturing, linking, analyzing, sharing and reporting on a range of data (e.g., patient-reported experiences, longitudinal data related to health, healthcare, social care and determinants of health)	
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	• The Population Health Information Unit is a resource for health, providing consultation on research design and methodology, data standards, and reporting of health indicators (as indicated in 2017-2018 annual report) • The Department of Health actively supports researchers to help identify community-based research needs; partners with researchers on projects of interest to the department; and undertakes long-term planning to fill research voids • Gaps may include limited progress in establishing many core capacities and supports for facilitating the timely production, synthesis and use of research evidence to inform health-system decision-making processes	• Interagency Human Health Research Review Board is a tri-partite group of Nunavut organizations (Government of Nunavut Department of Health, Nunavut Tunngavik Inc., and Qaujigiartiit Health Research Centre) that reviews and discusses health research proposals that are applying for research licences in Nunavut • Qaujigiartiit Health Research Centre: o works to identify Inuit and community perspectives on ethics in order to inform the work of the centre and to promote ethical practice in Nunavut from the perspective of Community members o supports the sharing of knowledge from community-led research projects among community members, researchers and health workers o maintains an online clearinghouse for data and research evidence generated in Nunavut • Nunavut Research Institute established to administer scientific research licensing in Nunavut, in accordance with Nunavut's Scientists Act, and also has a mandate to: o facilitate collaborative research to address Nunavut's needs and priorities o promote the development and application of new technology to improve the quality of life of Nunavummiut o provide advice on matters related to scientific research in Nunavut o provide a clearinghouse of information on scientific research conducted in Nunavut

Characteristic	Examples	Health-system receptors and supports	Research-system supports
			- o coordinate Nunavut Arctic College's Environmental Technology Program - o prepare and disseminate annual research compendia, detailing all research projects licensed by the territory each year - Research Field Support Units also maintained by Nunavut Research Institute to ensure adequate research infrastructure (e.g., accommodations, laboratories) is in place to support research and teaching activities in the territory - Nunavut Tunngavik Incorporated occasionally engages with research partners from the territory and across the country to better understand the health and well-being of Inuit in Nunavut, and to develop approaches and strategies for addressing priority problems (e.g. youth suicide) - Gaps may include limited progress in establishing many core capacities and supports for facilitating the timely production, synthesis and use of research evidence to inform health-system decision-making processes
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…	- Fact sheets and infographics about various priority health topics (e.g., nutrition and tuberculosis) for citizens prepared and disseminated by the Department of Health - Clinical practice guidelines, manuals and a number of other resources produced and disseminated by Department of Health and updated on an as needed basis (with input from experts) - Gaps may include limited progress in establishing support for the development of the full range of decision supports for patients (e.g., self-management supports, decision aids, goal-setting supports), providers (e.g., quality standards and care pathways) and health-system decision-makers	Gaps may include few efforts to provide decision supports, although some efforts to provide access to online clearinghouses for research (see Qaujigiartiit Health Research Centre above) signal a possible shift towards the establishment of more decision supports in future
Aligned governance, financial and delivery arrangements: Systems adjust who can make what decisions (e.g., about joint learning priorities), how money	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	Very close link between clinical health care and public health planning and delivery, which helps to ensure coordination in decision-making across a range of sectors and	

Characteristic	Examples	Health-system receptors and supports	Research-system supports
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	conditions, which centralizes and creates a 'hub' for rapid learning and improvement • Gaps may include limited progress in adjusting governance, financial and delivery arrangements to support rapid learning and improvement at all levels	
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'	• Efforts to further develop a framework for data capture, and the Population Health Information Unit (see above) signal a willingness in the Department of Health to develop mechanisms that will help promote a culture of rapid learning and improvement • Gaps may include limited progress in establishing explicit mechanisms to develop a culture of rapid learning and improvement, given most health organizations do not have the capacity to support a culture of rapid learning and improvement	• Nunavut Research Institute has a mandate to actively identify research needs, broker research partnerships, and facilitate dialogue and collaboration among Nunavut communities, academic research scientists, government agencies, and the private sector (which can help to foster a greater culture of rapid learning in the territory) • Cooperative governance for human health research ethics (outlined above) may have helped to solidify a culture of teamwork and collaboration within the research ethics space, which could be built upon in future commitments to support the establishment of a culture that is conducive to similar culture for rapid learning and improvement • Gaps may include similar areas same as adjacent column
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-	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	• Gaps may include limited attention paid to many competencies that can be established to support rapid learning (e.g., efforts to publicly report on rapid learning and improvement, distributed competencies for rapid learning and improvement, in-house capacity or centralized expertise and infrastructure)	• Nunavut Research Institute supports capacity development for research through a wide range of outreach, training and communication initiatives • Qaujigiartiit Health Research Centre supports capacity development for community research

Evidence >> Insight >> Action

Characteristic	Examples	Health-system receptors and supports	Research-system supports
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	4) Centralized specialized expertise in supporting rapid learning and improvement 5) Rapid-learning infrastructure (e.g., learning collaboratives)		• Northern Scientific Training Program provides federal funding for students conducting research in the north to support the development of capacity for research – including in the health sciences

Table 2: Assets and gaps in the <u>primary-care sector</u> in Nunavut

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
		• Few assets identified related directly to primary care
		 • Gaps may include similar areas as those identified in Table 1
			• Few assets identified related directly to primary care
			 • Gaps may include similar areas as those identified in Table 1

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)	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1

Characteristic	Examples	Health-system receptors and supports	Research-system supports
encounters and costs) and outcome indicators (e.g., health status)	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)		
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	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1

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…
		• Few assets identified related directly to primary care
		• Gaps may include similar areas as those identified in Table 1
			• Few assets identified related directly to primary care
			• Gaps may include similar areas as those identified in Table 1

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	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1

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Characteristic	Examples	Health-system receptors and supports	Research-system supports
	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		
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'	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to primary care • Gaps may include similar areas of progress as those identified in Table 1
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)	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to primary care • Gaps may include similar areas as those identified in Table 1

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

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
		• Culture of engaging and consulting elders in decision-making about a number or issues through elder programs, which serves as a strong platform for expanding this engagement into health-system decisions
		• Gaps may include similar areas as those identified in Table 1
			• Few assets identified related directly to aging
			• Gaps may include similar areas as those identified in Table 1

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)	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1

Characteristic	Examples	Health-system receptors and supports	Research system supports
Timely production of research evidence: Systems produce, synthesize, curate and share (with individuals at all levels) research about problems, improvement options and implementation considerations	1) Distributed capacity to produce and share research (including evaluations) in a timely way 2) Distributed research ethics infrastructure that can support rapid-cycle evaluations 3) Capacity to synthesize research evidence in a timely way 4) One-stop shops for local evaluations and pre-appraised syntheses 5) Capacity to access, adapt and apply research evidence 6) Incentives and requirements for research groups to collaborate with one another, with patients, and with decision-makers	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1

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…
		• <u>Nunavut Seniors' Information Handbook</u> provides older adults with an overview of how the health and social system works, as well as the full range of programs and services available to support them
		 • Gaps may include similar areas as those identified in Table 1
			• Few assets identified related directly to aging
			 • Gaps may include similar areas as those identified in Table 1

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	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1

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'	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1
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)	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1	• Few assets identified related directly to aging • Gaps may include similar areas as those identified in Table 1

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