McMaster University | HEALTH FORUM

Living Evidence Brief Appendices

Addressing the Politics of the Health Human Resources Crisis in Canada (Version 4)

15 & 16 May 2023

Appendices

Appendix 1: Background and methods for preparing the fourth version of the 'living' evidence brief

Background and approach to preparing the evidence brief

The fourth version of this 'living' evidence brief has been updated based on insights that emerged during the third 'living' stakeholder dialogue and captured in the dialogue summary. It also builds on insights that emerged during the first two 'living' stakeholder dialogue interactions and two citizen panels on the same topic (the full suite of documents that both informed and that summarize the insights from these interactions are available here). These insights informed a reframing of the problem, elements of a potentially comprehensive approach for addressing it, and key implementation considerations, reflecting our evolving understanding of the political context, the issues in play, and the actions being taken to respond to the evolving context and issues. Like the last version, it mobilizes both global and local research evidence about a problem, three approach elements for addressing the problem, and key implementation considerations. It also draws on the experiences from federal/provincial and territorial (FPT) jurisdictions to inform our understanding of the issue, which were gathered through reviews of government documents and websites, as well as through key-informant interviews. Whenever possible, the evidence brief summarizes research evidence drawn from evidence syntheses and occasionally from single research studies. An evidence synthesis is a summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select and appraise research studies and to synthesize data from the included studies. The evidence brief does not contain recommendations, which would have required the authors of the brief to make judgments based on their personal values and preferences, and which could pre-empt important deliberations about whose values and preferences matter in making such judgments.

The preparation of this evidence brief involved six steps:

1) conducting a thematic analysis and summarizing the insights that emerged from the third dialogue interaction in a dialogue summary, and using these insights to reframe key sections of the brief (alongside the insights that emerged during previous stakeholder dialogue interactions and citizen panel interactions on the same topic)
2) regularly convening the project Steering Committee comprised of representatives from the partner organization, key stakeholder groups, and the McMaster Health Forum to help inform this reframing
3) identifying, selecting, appraising and synthesizing relevant research evidence for sections of the brief that were reframed based on the steps above
4) conducting additional jurisdictional scans to identify FPT initiatives that have been implemented to engage a diverse array of Canadians to play increasingly important roles in designing, executing and ensuring accountability for health-system transformation (the focus of element 1, see Appendix 4 below)
5) drawing on insights from a complementary evidence synthesis being developed by the McMaster Health Forum on understanding spread and scale of innovations to help frame element 2, and to provide insights about existing evidence syntheses, frameworks and examples of technical-support initiatives across Canada and internationally (see Appendix 6 and 7 below)
6) drafting the evidence brief in such a way as to present concisely and in accessible language the global and local research evidence, and insights from the jurisdictional scan.

The three approach elements for addressing the problem were not designed to be mutually exclusive and could be pursued in a number of ways. The goal of the dialogue is to spark insights and generate action by participants and by those who review the dialogue summary.

Mobilizing research evidence about approach elements for addressing the problem

To identify the best-available research evidence about the approach elements, we primarily searched Health Systems Evidence (www.healthsystemsevidence.org), which is a continuously updated database containing more than 9,400 evidence syntheses and more than 2,800 economic evaluations of delivery, financial and governance arrangements within health systems. We also complemented this with searches in PubMed, and hand searches of the McMaster Health Forum's recently prepared evidence syntheses if there was overlap in the issues addressed or the elements considered (which was particularly the case for elements 1 and 3). The authors' conclusions were extracted from the syntheses whenever possible. Some syntheses may have contained no studies despite an exhaustive search (i.e., they were 'empty' reviews), while others may have concluded that there was substantial uncertainty about the approach elements based on the identified studies. Where relevant, caveats were introduced about these authors' conclusions based on assessments of the syntheses' quality, the local applicability of the reviews' findings, equity considerations, and relevance to the issue.

Being aware of what is not known can be as important as being aware of what is known. When faced with an empty synthesis, substantial uncertainty, or concerns about quality and local applicability or lack of attention to equity considerations, primary research could be commissioned, or an approach element could be pursued and a monitoring and evaluation plan designed as part of its implementation. When faced with a synthesis that was published many years ago, an updating of the review could be commissioned if time allows. No additional research evidence was sought beyond what was included in the evidence syntheses. Those interested in pursuing a particular approach element may want to search for a more detailed description of the approach element or for additional research evidence about the element.

Appendix 5 provides detailed information about the evidence syntheses identified that relate to approach element 2 (in preparing previous versions of this brief we identified syntheses relevant to elements 1 and 3, and point to those document directly in the text). In the first column we list the approach sub-elements, and provide hyperlinks to the search strategies used, as well as the breakdown of number of identified syntheses for each sub-element according to their quality. In the second column, we provide a hyperlinked 'declarative title' that captures the key findings from each synthesis. Columns 3-6 list data related to the criteria that can be used to determine which reviews are 'best' for a single category (i.e., living status, quality, last year literature searched and availability of a GRADE profile, which provides insights about the strength of the evidence included in a particular synthesis), column 7 includes data about equity-related groups that are addressed explicitly by the synthesis, and column 8 highlights the type of questions addressed by each synthesis.

As noted above, the fourth column presents a rating of the overall quality of the review. The quality of each review has been assessed using AMSTAR (A MeaSurement Tool to Assess Reviews), which rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to evidence syntheses pertaining to delivery, financial, or governance arrangements within health systems. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered "high scores." A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8

Appendix 2: Recent provincial and territorial decisions for addressing the HHR crisis

Jurisdiction	Solutions adopted to address the HHR crisis
British Columbia	Introduction of B.C.'s Health Human Resources Strategy focusing on: • retaining health workers (e.g., through making workplaces better) • balancing workloads and staffing levels through adjustments to health-system arrangements (e.g., expanding team-based care, expanding pharmacist, paramedic and first responders' scopes of practice) • recruiting new health workers • increasing supply through education and training initiatives (e.g., adding new 'seats' in medical schools and in midwifery programs)
Alberta	Introduction of the Alberta Health Workforce Strategy, focusing on: • retaining health workers by supporting a safe, engaging, and meaningful work environment • recruiting new health workers from across Canada and the world • growing workforce capacity by educating and training more health workers • introducing collaborative, proactive, and evidence-based approaches to long-term workforce planning
Saskatchewan	Launch of a four-point Health Human Resources Action Plan, and the establishment of a new independent Saskatchewan Healthcare Recruitment Agency, with an emphasis on: • recruiting hundreds of new health workers from abroad (through the establishment of a memorandum of understanding with the Government of the Philippines and a call to unlicensed internationally educated health workers living in Canada who may be eligible to join the province's workforce), as well as newcomers interested in working in the healthcare sector • accelerating training, assessment and licensure pathways for internationally educated nurses, and adding more training seats in education health professional education programs • incentivizing health workers to work in rural and remote areas through return-of-service agreements, and other financial incentives such as student loan forgiveness, graduate retention programs and clinical placement bursaries • retaining, through the addition of more permanent, full-time positions for high-demand professions in rural and remote areas, providing mentorship and peer-to-peer supports and a First Nations and Métis recruitment and retention strategy
Manitoba	Introduction of a new health human resource action plan, which focuses on: • retaining health workers through additional supports for well-being (e.g., improving workplace safety and working conditions, reducing administrative burden and providing mental health supports) financial incentives (e.g., reimbursements for support programs and licensing fees, hourly premiums for weekend hours, additional compensation for full-time workers) • training health workers, including increasing the number of future workers trained through undergraduate professional education programs, and through an expansion of the Undergraduate Nurse Employee program to support nurses returning from retirement and internationally educated nurses • recruiting more health workers who are qualified and wish to practise in Manitoba, through a nurse-referral program, a returning-nurse program and financial incentives (e.g., tuition rebates and incentives for returning retirees, plus addressing constraints associated with testing costs), as well as through a modernized memorandum of understanding with the Government of the Philippines
Ontario	Targeted efforts related to health human resources in Bill 60: *Your Health Act, 2023* • 'As of Right' rules to automatically recognize the credentials of health workers registered in other provinces, as well as the introduction of a new temporary class of licence by the

Jurisdiction	Solutions adopted to address the HHR crisis
	College of Physicians and Surgeons of Ontario for physicians to expedite the registration of out-of-province and internationally educated physicians
Quebec	Implementation of the Opération main-d'oeuvre, which was introduced in 2021 and aims to tackle workforce shortage in certain priority areas through a set of targeted measures, such as: • accelerated training to become a nurse assistant • measures to improve everyday life for nursing and cardiorespiratory care personnel • financial incentives for return • financial incentives for job retention
Atlantic Canada	Introduction of a new physicians and surgeons registry with other Atlantic provinces to support cross-jurisdictional practice in the region
New Brunswick	New investments in the recruitment and training of nurses, as well as efforts to expand the scope of practice among pharmacists to diagnose and prescribe
Nova Scotia	New Nova Scotia Action for Health Plan, which includes solutions focused on: • recruitment (through efforts like streamlining licensing and recruitment processes, and the establishment of the Office of Healthcare Professionals Recruitment Community Fund) • retention of current health workers in the province (through efforts to support professional development, resilience and job satisfaction) • training and education (through efforts such as opening more medical school and residency seats in priority clinical areas)
Prince Edward Island	Introduction of a number of financial incentives to drive recruitment and retention efforts including: • new financial recruitment incentives to attract and retain nurses and midwives • new financial incentive programs to support retention (including the Retention Incentive Plan, Retirement Retention Program and the Priority Vacancy Program) to retain health workers and fill key vacancies throughout the system Investments in education and training infrastructure to support the creation of a new faculty of medicine
Newfoundland and Labrador	Focus on recruitment and retention of health workers through: • the establishment of a new Assistant Deputy Minister for the recruitment and retention office, and an increase in staffing in regional health authorities to support recruitment and retention efforts • the introduction of many financial incentives to attract and retain health workers (e.g., Come Home 2022 incentive to attract expatriate Newfoundlanders who are health professionals to return to practise in the province, Internationally Educated Nurses Bursary, incentives for retired family physicians to return to practice, the New Family Physician Income Guarantee, and the Family Practice Start-up Program, nursing retention, signing and overtime bonuses) • the introduction or expansion of programs for Internationally Educated Nurses Bridging Program, and the Extraordinary Every Day campaign. Additional efforts include expanding scopes of practice for nurses and increasing the supply of health workers through increases in the number of seats in medical and nursing schools from nursing programs and personal care attendant programs
Yukon	New investments to support the recruitment and retention of healthcare staff in the territory, including retention packages and signing bonuses for nurses, as well as bursaries and reimbursements
Northwest Territories	The development of a Human Resources Plan, which aims to: • increase the number of Indigenous and Northern residents pursuing careers in health through bursaries, mentorship and access to employment programs

Jurisdiction	Solutions adopted to address the HHR crisis
	• attract and retain professionals by supporting professional development, academic support, learning and mentorship, as well as targeted marketing campaigns to attract new graduates and physicians, and health, safety and wellness initiatives Introduction of initiatives to recruit and retain health workers, which includes: • bonus payments for nurses, midwives and medical laboratory technologists • a friend and family travel program (which includes bursaries to cover certain costs like travel for family) • international travel reimbursements for workers interested in work in NT • a referral program which provides incentives for government employees to refer registered nurses and nurse practitioners who are hired, and licensing fee reimbursements
Nunavut	Introduction of a Roadmap to Strengthen the Nunavut Nursing Workforce, which focuses on: • workforce planning and evaluation • recruitment • professional development • creating a positive professional practice environment • developing nursing leadership in the territory. Implementation of targeted incentives such as the Bring a Friend or Family Member incentive to attract nurses to work in the territory during the peak holiday season when demands are highest

Appendix 3: Examples of provincial and territorial efforts to advance health-system transformation in Canada

Jurisdiction	Examples of efforts to advance health-system transformation
British Columbia	• Introduction of new compensation models for family physicians (e.g., longitudinal family physician payment model (LFP) introduced in 2022) • Implementation of pilot projects that are pushing forward significant transformations to clinical practices and systems (e.g., the Clinical & Systems Transformation (CST) project with Vancouver Coastal Health in 2022) • Development of strategic plans (e.g., Province of B.C. Digital Health Strategy in 2019; B.C. Digital Health Initiative in 2020)
Alberta	• Development of strategic plans (e.g., Transformational Roadmap 2019–2024 in 2019, and Alberta Innovates – Digital Health Transformation in 2022) • Engagement of external bodies to help inform transformation initiatives (e.g., Alberta Health Services performance reviews conducted by Ernst & Young LLP)
Saskatchewan	• Development of strategic plan (e.g., Saskatchewan Health Authority Roadmap 2022-23)
Manitoba	• Establishment of new organizations to provide strategic oversight of the health system (e.g., Shared Health Manitoba introduced in 2019) • Development of strategic plans (e.g., Health System Transformation Blueprint for Change in 2019 and the Manitoba Health, Seniors and Active Living Transformation Program Charter in 2020)
Ontario	• Establishment of new organizations to provide strategic oversight of the health system (most notably Ontario Health in 2019), and new integrated systems of care for attributed populations of Ontarians (Ontario Health Teams)
Québec	• Development of strategic plans (e.g., MSSS Strategic Plan for 2019-2023, and the 2022–2025 Québec Life Sciences Strategy in 2022), and discussions about creating a new agency (Santé Québec) to separate management and operation functions
New Brunswick	• Development of strategic plan (e.g., Stabilizing Health Care: An Urgent Call to Action in 2021)
Nova Scotia	• Changes to emergency care, supports for paramedics and improving access introduced in early 2023 • Development of strategic plans (e.g., Action for Health in 2022, Advancing Nova Scotia's Health Care Through Information Technology Leadership in 2022)
Prince Edward Island	• Targeted reform efforts such as the introduction of primary care access clinics, the Pharmacy Plus program, and new dedicated ambulance transfer units • Development of strategic plan (e.g., Health PEI Strategic Plan 2021-2024 in 2021)
Newfoundland and Labrador	• Development of strategic plan (e.g., Health Accord for Newfoundland and Labrador: A 10-Year Health Transformation Initiative in 2022)
Yukon	• Development of strategic plan (e.g., Putting People First report in 2022)
Northwest Territories	• Launch of demonstration projects focused on primary-care reform in 2019 that will inform efforts to develop a vision for transformational change in Northwest Territories)
Nunavut	• Development of strategic plan (e.g., Model of Care Redesign for Nunavut in 2018, and the Territorial Client and Family Engagement Plan in development as of 2023)

Appendix 4: Examples of structures and processes that enable a diverse array of Canadians to play a role in designing, executing and ensuring accountability for health-system transformation

Jurisdiction	**Examples of existing structures and processes**	**Focus of engagement** (i.e., designing the vision, executing the vision, ensuring accountability for achieving the vision)
Federal/Pan-Canadian	Accreditation Canada's patient surveyors	**Executing the vision** Patient surveyors have extensive, first-hand knowledge of the health system and are willing to volunteer their time to help health organizations improve on an ongoing basis
	Canadian Medical Association's Patient Voice	**Designing the vision** The 15-member group offers ideas on how to make Canadians healthier and contribute to a vibrant medical profession, highlights emerging issues, and provides insights into the best ways for the CMA and physicians to engage with patients
	Evidence Commission Citizen Leadership Group	**Designing the vision** A group of citizen leaders and leaders of citizen-serving NGOs striving to put evidence at the centre of everyday life
	Jack.org	**Designing the vision** A charity empowering young leaders to improve mental health across Canada
	Patient Advisors Network	**Designing and executing the vision** A network of patients who are committed to improving healthcare as partners and advisors across Canada
	SE Health Wiser Advisors	**Designing and executing the vision** A program developed to bring together people with lived experience (e.g., clients, caregivers, family members and patients) to work with SE Health to improve healthcare and make social impact
British Columbia	BC Health Care Matters	**Designing the vision** A grassroots patient advocacy group campaigning for timely access to a family doctor for every resident of British Columbia
	Patient Voices Network	**Designing and executing the vision** A network of patients, families and caregivers working together with healthcare partners to improve B.C.'s health system
Alberta	Imagine Citizens Network	**Designing and executing the vision** A network of people and community-oriented partners that creates pathways to bring citizen voices to drive health-system transformation
	Patient and Family Advisors in the Strategic Clinical Networks	**Designing and executing the vision** Patient and Family Advisors committed to sharing their knowledge, perspectives and time as part of Strategic Clinical Networks committees
	Virtual Patient Engagement Network	**Designing and executing the vision** A platform that connects patients, families and caregivers with people and teams working to improve primary care
Saskatchewan	Patient and Family Advisor Program	**Designing and executing the vision and ensuring accountability** A program to engage patients and families in the development, implementation and evaluation of health-system policies and programs
Manitoba	Shared Health's Patient and Family Advisor Network	**Designing the vision** A network of members of the public, patients, family members and caregivers sharing their experiences and suggestions on a range of projects and health-system issues

Ontario	Minister's Patient and Family Advisory Council	**Designing a vision** A council advising the Ontario government on key healthcare priorities that have an impact on patient care and experiences, driving meaningful changes to provincial programs and policies, and helping inform healthcare planning
	Patient and Family Advisors Network	**Designing and executing the vision** A virtual network for anyone who uses healthcare services in Ontario and wants to build a better system
	Patient Ombudsman	**Ensuring accountability** The Patient Ombudsman receives, responds to and helps resolve complaints from current or former patients (or their caregivers) about their care or experiences with public hospitals, long-term care homes and home and community care support-services organizations
Québec	Centre of Excellence on Partnership with Patients and the Public	**Designing and executing the vision** A centre dedicated to public and patient partnership to improve health and health systems
	Health and Welfare Commissioner's Consultation Forum	**Designing the vision and ensuring accountability** A deliberative forum of 18 citizens and nine experts providing their point of view on various questions submitted by the Health and Welfare Commissioner during its work (including appraising health-system performance)
	Institut du Nouveau Monde	**Designing the vision** An independent and non-partisan organization dedicated to increasing citizen participation in democratic life (including on health-system issues)
New Brunswick	The Patients Voices Network, led by the New Brunswick Health Council	**Designing the vision** A forum that allows citizens to share their experiences and voice their opinions on specific components of the health system
Nova Scotia	Engage Nova Scotia	**Designing the vision** An independent non-profit organization engaging citizens in conversation, visioning and storytelling to improve quality of life for all
Prince Edward Island	Health PEI Volunteer Patient and Family Partners	**Designing and executing the vision** Patient and family partners will support Health PEI in many ways including sharing their stories, participating on quality-improvement teams, and working on short-term quality-improvement projects
Newfoundland and Labrador	Patient Partners at Quality of Care NL	**Designing the vision** Patients and members of the public providing insights on the work done by Quality of Care NL to improve the health system
Yukon	None identified	
Northwest Territories	None identified	
Nunavut	None identified	

Appendix 5: Evidence syntheses relevant to element 2 – Establish sustained change-management capacity in PT health systems to drive health-system transformation

Sub-elements	Most relevant evidence syntheses to inform decision-making about the sub-elements	Living status	Quality (AMSTAR)	Last year literature searched	Availability of GRADE profile	Equity considerations (organized by PROGRESS PLUS categories)	Type of policy question addressed
All sub-elements were searched for and presented together given they significantly overlap in the literature Search 1, Search 2, Search 3, Search 4 *Total syntheses: Eight (of which four are medium quality and four are low quality)*	• When change-management models are adopted in healthcare with the flexibility and adaptability to be relevant to the context in which they are applied, change-management methodologies can be effective at supporting change implementation at the local, institutional, and system or multi-system levels in complex healthcare contexts (24)	No	6/10	2021	No	n/a	Identifying implementation considerations
	• The progression of telemedicine service implementation can be slowed by a lack of understanding of how to plan and manage changes, a fragmented approach to the implementation process, and a lack of reinforcement of the changes made when the telemedicine services have been implemented (25)	No	4/9	2020	No	n/a	Identifying implementation considerations
	• The principles of the Responsible Research and Innovation (RRI) framework (i.e., inclusion, reflexibility, responsiveness, anticipation) can be used to plan for and manage innovation processes that can complement the creation of socio-technical systems (26)	No	2/9	2022	No	n/a	Identifying implementation considerations
	• Awareness of resistance to change and utilization of change-management models and coping strategies must be considered when changes are being made in the medical education field (27)	No	1/9	2022	No	n/a	Identifying implementation considerations
	• Large health-system transformation requires passionate and committed leadership at all levels, measurement of short- and long-term progress, understanding of the history of past change efforts, and buy-in from physicians, patients and families in the change process (28)	No	3/9		No		Identifying implementation considerations

Sub-elements	Most relevant evidence syntheses to inform decision-making about the sub-elements	Living status	Quality (AMSTAR)	Last year literature searched	Availability of GRADE profile	Equity considerations (organized by PROGRESS PLUS categories)	Type of policy question addressed
	• A systematic review found that substance of the innovation, processes, stakeholders, and context are four key mechanisms involved in spread, scale-up, and sustainability of system innovations; perceived value and feasibility of the innovations were identified as the most important enablers of spread and scale (29)	No	4/9	2017	No	n/a	Identifying implementation considerations
	• A systematic review reported that scale and spread is dependent on the alignment with stakeholder groups (innovators, end users and decision-makers) and contexts (social and physical environment, the health system, and regulatory, political and economic environment) (30)	No	2/9	2016	No	n/a	Identifying implementation considerations
	• A scoping review described absorptive capacity as an effective organizational resource to successfully implement new innovations, strengthening institutional capacity to allow for uptake and long-term implementation, its use as a measurement tool and framework for planning and assessing change, and the need to measure different dimensions to understand what is required for institutional innovation (31)	No	6/9	2022	No	n/a	Identifying implementation considerations

Appendix 6. Overview of frameworks related to spread and scale-up of innovations as part of health-system transformation initiatives

Framework	Components
Implementing best practices consortium	• Framework identifies five phases that innovations move through: o forming the change coordination team o defining the need for change o planning for demonstration and scale-up o supporting the demonstration o going to scale with successful change efforts • Framework notes eight principles for creating a supportive context for innovations to succeed: o making change matter to those making the change o ensuring a credible, committed change agent o providing change agents with the resources they need to be successful o having leadership support at each organizational level and introducing the innovation into an environment where change is an ongoing practice o having clarity about the purpose, benefits and results of change o motivating and supporting staff throughout the change process o ensuring clearly assigned and accepted responsibilities for implementing change o starting where you can, when you can
Diffusion of innovation	• Framework explains the process by which innovations are accepted or rejected by organizations or individuals and outlines five adopter groups based on their level of motivation to adopt new innovations: o innovators, have a tendency to take risks and adopt new ideas first o early adopters, typically opinion leaders who act as role models for others o early majority, part of the critical mass that ensures adoption and see the practice benefits o late majority, part of the critical mass that ensures adoption, but are more skeptical and conservative o laggards, very conservative and traditional and are often the final group to adopt • The framework also identified five factors that successful spread and scale of innovations frequently include: o the innovation holds a clear advantage compared to current ways o compatibility with current systems and values o simplicity of the innovation and its implementation o ease of testing before making a full commitment o observability of the change caused by implementation and its resulting impact
ExpandNet (WHO)	• The framework differentiates the elements needed for scaling up and the strategic choice areas where decisions will ultimately need to be made to support the scale-up • The elements of scaling up include: o the innovation o the resource team o the user organization(s) o the environment in which it is being implemented (e.g., conditions and institutions) • The strategic choice areas include: o the type of scaling up being pursued (e.g., expansion or replication, institutionalization, diversification, or spontaneous diffusion) o dissemination and advocacy (e.g., communication) o organizational process (e.g., how to organize scaling up) o costs and resource mobilization o monitoring and evaluation

Framework	Components
Consolidated framework for implementation research	• The framework provides a menu of constructs that have been associated with effective implementation of innovations, however, prior to its use it requires deep inquiry into local conditions to account for and anticipate the needs of different contexts • Presents five domains, each of which contain a number of constructs that should be adapted to reflect the specific context in which implementation is taking place: o innovation domain, which relates to the innovation being implemented o outer-setting domain, which relates to the broader contexts where the innovation is being implemented (e.g., community, city, state) o inner-setting domain, which relates to the immediate context where the innovation is being implemented (e.g., classroom, team, hospital) o individuals domain, which relates to the roles and characteristics of individuals involved in the implementation o implementation-process domain, which relates to the activities and strategies used to implement the innovation
Consolidated framework for scaling up health interventions	• The framework identifies four phases of scale-up, adoption mechanisms to support the implementation and system supports that need to be in place • The four phases of scale-up include: o set up, which prepared the ground for introduction and testing of the intervention that will be taken to full scale o develop the scalable unit, which is an early test and demonstration phase from which the output is a set of context-sensitive strategies and interventions o test of scale-up, which spreads the intervention to a variety of settings that are likely to represent contexts that will be encountered at full scale o go to full scale, which focuses on rapidly enabling a larger number of sites to adopt and/or replicate the intervention • Adoption mechanisms include: o better ideas (e.g., key characteristics of the intervention itself including its evident superiority, simplicity, and its alignment with the culture of the new implementers) o leadership (e.g., role of guiding and supporting large-scale change) o communication (e.g., critical to involving early adopters during the initial phases and then the late majority during the test of scale-up phase) o policy (e.g., identification and/or development of regulatory or administrative policies are important environmental factors that can either inhibit or expedite adoption) o culture of urgency and persistence (e.g., acts as a barometer for the amount of will and energy needed to stay the course and bring the interventions to full scale) • Additional elements of the support system that can aid in successful scale-up o human capability for scale-up o infrastructure for scale-up (i.e., additional tools, communication systems, and key personnel) o data collection and reporting systems o learning systems (including embedded feedback mechanisms) o design for sustainability (i.e., high reliability of the new processes, inspection systems to ensure desired results are being achieved, support for structural elements, leadership commitment to change)
Interactive systems framework for dissemination and implementation	• The framework identified three systems that are needed to bring evidence-based innovations into practice: o synthesis and translation system, which distills information about innovations and translates it into user-friendly formats o the prevention support system, which provides both innovation-specific and general training, technical assistance and other supports to users in the field

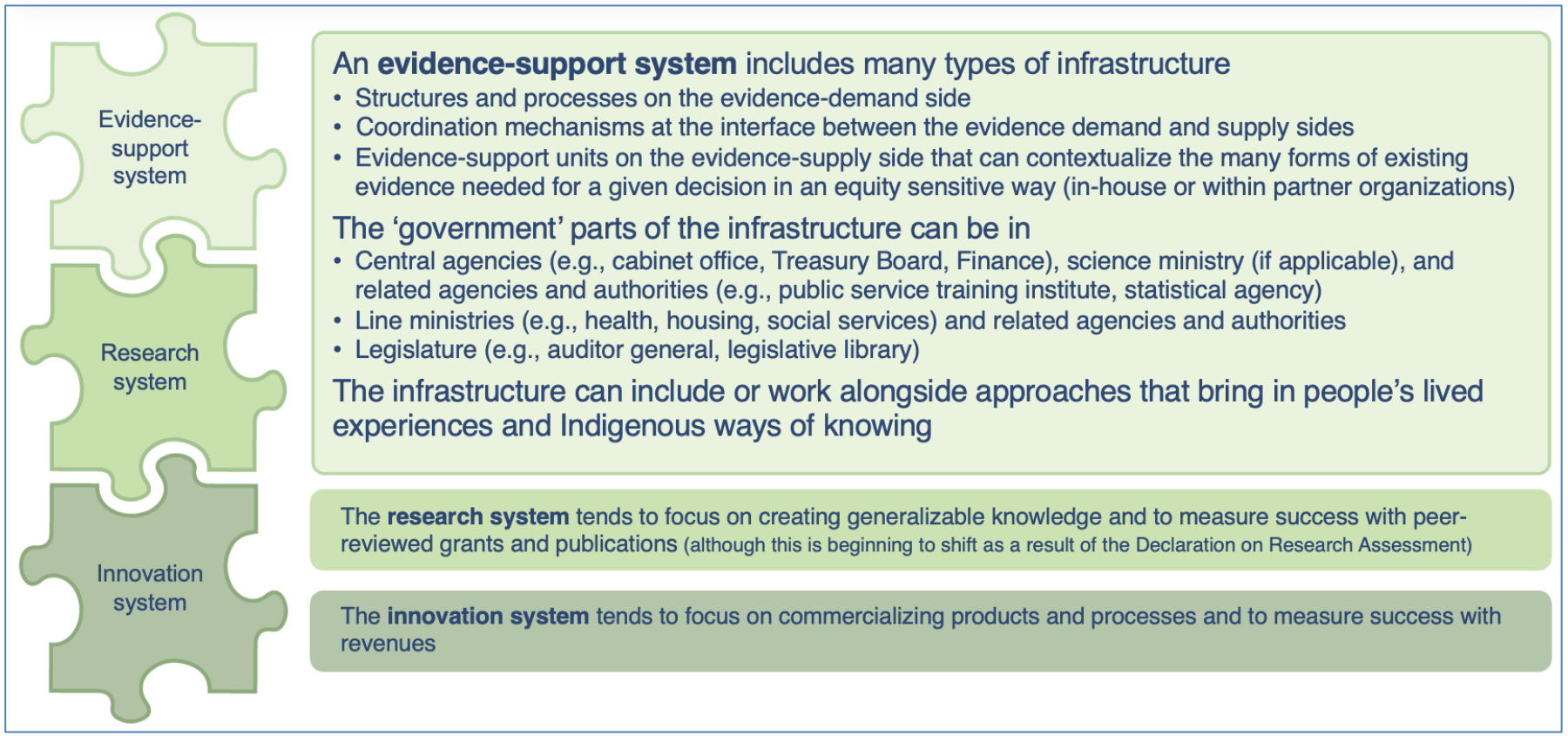
Framework	Components
	○ the prevention delivery system, which implements innovations in the world of practice or delivers new programs • The framework describes how these three systems work together for successful dissemination and implementation of innovations, however, contextual factors surrounding the systems are also important to consider including funding, climate, macro policy and existing research and theory
Framework for spread (IHI)	• The framework highlights the importance of leadership as being a critical input into the spread of innovations • It further breaks implementation down into three components: ○ better ideas (e.g., develop the case and describe the ideas) ○ set up (e.g., identifying successful sites, key groups to make adoption decisions, and initial strategy) ○ social system (e.g., key messengers, communities, transition issues, technical support)
Non-adoption, abandonment, scale-up, spread and sustainability framework	• The framework consists of 13 questions across seven domains and is intended to be used to guide conversations and to help generate ideas with respect to the non-adoption, abandonment, scale-up, spread and sustainability of technologic innovations • The seven domains highlighted in the framework are: ○ the condition or illness for which the technology will be used ○ the technology being implemented including material features and knowledge needed ○ the value proposition to both the developer and the patient ○ the adopter system and changes that may be needed to existing ways of operating ○ the organization that is adopting the innovation ○ the wider context in which the innovation is being implemented ○ embedding and adaptation over time
Technical assistance policy options	• Framework plots the different roles that technical assistance providers can play in implementing an innovation along two axes, the first of which relates to whether technical assistance providers work as facilitators, partners or doers, and the second whether the work is solutions-oriented or problem-oriented • The framework proposes that technical assistance providers can either develop government capacity (facilitator) to implement change, supplement government capacity (partner) to implement change, or substitute government capacity (doer) to implement change • The six roles for technical assistance are: ○ solutions-driven facilitation, whereby the government is in the driving seat and uses external support to facilitate change processes (e.g., workshops and training based on expertise) ○ solutions-driven partnership, whereby external donors prioritize an agenda and provide advisory supports typically on a technical problem ○ solutions-driven doer, whereby technical assistance providers take on the functions of government where capacity does not exist ○ problem-driven facilitation, whereby government is the change actor and external advisors work on problems accepted by a working group for which they have received authority to be solved ○ problem-driven partnership, whereby the government asks for technical support to implement a reform agenda ○ problem-driven doing, whereby the government identifies a gap in capacity to be filled and it is not cost-effective to build that capacity in government

Appendix 7: Overview of organizations and approaches used to spread and scale health-system innovations in Canada and internationally

Organization and description	Approaches
Canada	
CAN Health Network • National partnership of Canadian health organizations and businesses that support the spread and scale-up of health technologies by acting as dedicated early adopters of healthcare solutions	• Funding supports • Data analytics and data collection • Proof of concept and commercialization supports • Network of healthcare organizations and private businesses (learning collaborative)
Centre for Collaboration, Motivation and Innovation • Supports individuals and organizations to create collaborative partnerships, teach practical skills, and implement strategies to facilitate system-wide change • This includes having worked with accountable care organizations in the U.S., as well as most recently working with Ontario Health Teams to support their use of a population-health management approach	• Implementation coaching (e.g., population-health management) • Training and capacity building (e.g., action planning, motivational interviewing, quality improvement) • Resource sharing and contextualization of tools • Communities of practice • Evaluation supports
Health Commons Solutions Lab (Ontario) • Works to co-design and implement innovative solutions that are founded on communities' own knowledge and expertise and lead to lasting change • This includes community-led strategies for COVID-19 prevention, expanded data collection strategies for equity-deserving populations, and undertaking population-health assessments for Ontario Health Teams	• Supporting community outreach and engagement • Training and capacity building (e.g., in facilitating discussions, communicating strategies) • Technical advising • Data analytics and data collection • Resource sharing and contextualization of tools (e.g., screening)
Healthcare Excellence Canada • Works with partners to spread innovations, build capability and catalyze policy changes through calls for innovations	• Learning collaboratives and networks • Training and capacity building • Developing, sharing and contextualizing tools
Provincial System Support Program at the Centre for Addictions and Mental Health (Ontario) • Works with communities, service providers and other partners to implement system changes to the mental health and addictions sector across Ontario, which has included working on 35 different innovations including two at the provincial level	• Database of best practices and evidence-informed interventions • Improvement collaboratives • Implementation coaching • Contextualized implementation plans • Evaluation supports
United Kingdom	
Academic Health Sciences Network • Brings together industry, academic, third-sector and local organizations in 15 networks across the U.K. (that also collaborate at a national level) to spread and scale innovations at pace and scale, including NICE-approved medicines and technology as well as broader system innovations such as remote-monitoring pathways, community assessment and treatment units, and virtual clinics for managing transient ischemic attacks and minor strokes, among others	• Training and capacity building (i.e., adoption of new technologies, practices and processes) • Technical advising • Funding supports

Organization and description	Approaches
Commissioning Support Units • Provides Integrated Care Boards (part of the implementation of integrated care systems) with external supports, specialist skills and knowledge to support them in their role as commissioners of local health services	• Technical advising • Data analytics and business intelligence • Clinical procurement supports • Administrative supports (e.g., human resource, payroll, procurement of goods and services)
NHS Leadership Academy • Responsible for training and building NHS leadership capacity across the health system including for implementing and advancing system transformations such as for local integrated care systems	• Training and capacity building (e.g., leadership for integrated care systems, board training for integrated care boards) • Resource sharing and contextualization of tools
NHS Transformation Directorate and Future NHS Platform • Responsible for implementing the 10-year vision for the future of the NHS, which includes working with providers and commissioners to develop and implement new models of care, redesign services, and develop solutions, the primary focus of which has been on the transformation towards the 42 Integrated Care Systems	• Implementation guidelines • Resource sharing and contextualization of tools • Funding supports • Online collaborative • Evaluation supports
United States	
CMS Innovation • Supports the development and testing of innovative health-payment and service-delivery models including various iterations of accountable care organizations, episode-based payment initiatives (e.g., comprehensive care for joint replacement, enhanced oncology models), primary-care transformation models (e.g., comprehensive primary care plus, advance practice demonstration sites), among others	• Technical advising • Funding supports • Data and analytics supports • Learning collaboratives • Rapid cycle innovation testing and iteration
Health Care Transformation Task Force • Non-profit, private consortium made up of patient organizations, providers, payers and purchases dedicated to advancing transformation towards equitable, affordable patient-centred care by supporting health-system efforts to transition towards value-based payment models being led by the U.S. Department of Health and Human Services	• Technical advising • Research supports for evidence-based interventions • Resource sharing and contextualization of tools • Learning collaboratives
Mathematica • Provides implementation supports to both public and private-sector clients to address pressing social challenges including disparities in health among other social challenges, including supporting the development of accountable care organizations and the integrated care resource centre designed to help dually eligible Medicare and Medicaid beneficiaries	• Technical advising • Training and capacity building (e.g., data analytics and customized training) • Research supports for evidence-based interventions • Program design • Implementation planning • Data and analytics supports (e.g., building dashboards) • Evaluation supports

Appendix 8: Key features of an evidence-support system, compared to a research system and innovation system



Source: *Global Commission on Evidence to Address Societal Challenges*

Appendix 9: Approaches to health workforce planning

Name of planning approach	Details of the approach	Assumptions of the approach
Utilization-based planning	The quantity, mix and population distribution of health workers are used as a baseline for estimates of future requirements	1) The current quantity, mix and distribution of services in the population are appropriate 2) The age- and sex-specific resource requirements remain constant in the future 3) The size and demographic profile of the population change over time in ways predicted by currently observed trends in age- and sex-specific rates of mortality, fertility and migration
Needs-based planning	Future requirements for health workers are estimated on the basis of the projected health deficits of the population, and the potential for addressing these deficits with the right mix, supply and distribution of health workers providing the right services	1) All healthcare and health promotion/disease prevention needs can and should be met 2) Cost-effective methods of addressing healthcare and health promotion/disease prevention needs can be identified and effectively implemented 3) Healthcare and health promotion/disease prevention resources are only used appropriately (i.e., to address relative levels of need)
Effective demand-based planning	Future requirements for health workers are estimated through the integration of healthcare and health promotion/disease prevention needs alongside important economic considerations (e.g., size and projected growth of the economy), and acknowledges that resource limitations mean that not all healthcare and health promotion/disease prevention needs can and should be met	1) Cost-effective methods of addressing healthcare and health promotion/disease prevention needs can be identified and effectively implemented 2) Healthcare and health promotion/disease prevention resources are only used appropriately (i.e., to address relative needs) 3) Implications of economic considerations can be used to prioritize which healthcare and health promotion/disease prevention needs should be met

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