

Evidence Brief

Preparing Emerging Leaders for Alternative Futures in Health Systems Across Canada

7 March 2019



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The McMaster Health Forum's goal is to generate action on the pressing health-system issues of our time, based on the best available research evidence and systematically elicited citizen values and stakeholder insights. We aim to strengthen health systems – locally, nationally, and internationally – and get the right programs, services and drugs to the people who need them.

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Merit review

The evidence brief was reviewed by a small number of policymakers, stakeholders and researchers in order to ensure its scientific rigour and system relevance.

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KEY MESSAGES

What's the problem?

- The challenges associated with preparing emerging leaders for alternative futures in health systems include:
 - health leaders are often trained for leadership roles in specific sectors and settings and not equipped to work across health and social systems;
 - there is a lack of coordinated efforts to establish and collectively pursue health-system leadership development;
 - health leaders largely focus on incremental change rather than anticipating or stewarding alternative futures; and
 - health-system arrangements are not aligned to support the identification, development or cultivation of emerging leaders.

What do we know (from systematic reviews) about three elements of a potentially comprehensive approach to addressing the problem?

- Element 1 – Establish a collective vision for how emerging leaders need to be prepared for alternative futures
 - This element could include two sub-elements: 1) identifying the personal and professional competencies needed; and 2) identifying mechanisms to bridge existing leadership with emerging leaders and leadership styles.
 - Ten systematic reviews relevant to the first sub-element identified a wide range of competencies required by leaders at each of the system, organizational and unit or department level. While we were unable to find systematic reviews that directly addressed the second sub-element, we found four systematic reviews examining different leadership styles, three of which related to clinical leadership.
- Element 2 – Identify and develop the training programs required to foster these competencies among emerging leaders
 - This element could include three sub-elements: 1) adapting existing training programs and developing new programs to ensure the necessary competencies are developed in the emerging leaders who need them; 2) establishing and continuously updating an inventory of leadership programs with explicit monitoring of the core competencies being taught; and 3) building the capacity required to forecast emerging alternative futures and establishing feedback mechanisms to continuously update leadership programs as new needs emerge.
 - Eleven systematic reviews relevant to the first sub-element were identified and they found that leadership training has a positive impact on leadership behaviours, but only when emerging leaders are given a chance to practise and use new competencies.
- Element 3 – Identify and develop the complementary system initiatives required to support emerging leaders in practice
 - This element could include three sub-elements: 1) establishing health-system initiatives that work in parallel with the academic setting; 2) promoting organizational cultures in which leadership-development initiatives are valued and supported by existing leadership; and 3) establishing mechanisms to continuously monitor health-system leadership capacity and plan for the development of emerging leaders.
 - Five systematic reviews were identified to inform the third element, and the reviews examined complementary system-level efforts to enable leadership development, including providing research and mentorship opportunities, and ensuring succession planning to replace existing leaders.

What implementation considerations need to be kept in mind?

- While potential barriers exist at the levels of providers, organizations and systems (if not patients/citizens, who are unlikely to be aware of or particularly interested in these approach elements), perhaps the biggest barrier lies in making a case that leadership development likely needs to be fundamentally different to successfully navigate the expected or alternative futures addressed in this brief.
- Potential windows of opportunity include the increasing demand for strong leadership from the media and from the public, as well as the recent international focus on the sustainability of health systems and preparing them for future challenges.

REPORT

The issue of leadership in health systems across Canada has been an area of renewed and increasing focus among a range of stakeholders and researchers over the last decade.(1; 2) In parallel, health systems in Canada have seen significant reform in how they are governed, how services are paid for and providers are remunerated, and the models of care used to deliver these services to those who need them. For example, many provinces are moving towards centralized decision-making through the amalgamation of regional health authorities (e.g., Alberta, Saskatchewan and Manitoba), rewarding outcomes alongside volume of care, and acknowledging the need for patients to take a greater role in the delivery of health services. Together these changes have been driven by an acknowledgment that strong and effective leadership – at all levels of the health system – is an essential component of achieving key health-system goals.(3-6)

While today's health-system leaders have been successful in making many positive reforms, significant changes are still needed to ensure health systems are providing positive patient experiences, improving population health, and keeping per-capita costs manageable (i.e., achieving the triple aim). Further, there is a need to better align health systems with the realities of today and to equip them to be responsive to drivers of change that will shape the future of healthcare.

In efforts to anticipate the changes that leaders will need to be prepared to address, eight drivers – first identified by a literature review conducted by the Health Leadership Academy (which is now captured in a report that can be accessed online at

Box 1: Background to the evidence brief

This evidence brief mobilizes both global and local research evidence about a problem, three elements of a potentially comprehensive approach to addressing the problem, and key implementation considerations. Whenever possible, the evidence brief summarizes research evidence drawn from systematic reviews of the research literature and occasionally from single research studies. A systematic review 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 the evidence brief involved seven steps:

- 1) convening a Steering Committee comprised of representatives from the partner organization (Michael G. DeGroote Health Leadership Academy) and the McMaster Health Forum;
- 2) identifying and interviewing 26 innovative thinkers (from both Canada and other countries) to help iteratively revise a list of expected futures (derived from a review of the grey literature) for which emerging leaders need to be prepared;
- 3) developing and refining the terms of reference for an evidence brief, particularly the framing of the problem and three elements of a potentially comprehensive approach to addressing it, in consultation with the Steering Committee;
- 4) identifying and interviewing 19 health-system and other leaders to solicit input on the terms of reference;
- 5) identifying, selecting, appraising and synthesizing relevant research evidence about the problem, approach elements, and implementation considerations;
- 6) drafting the evidence brief in such a way as to present concisely and in accessible language the global and local research evidence; and
- 7) finalizing the evidence brief based on the input of several merit reviewers.

The three approach elements for addressing the problem were not designed to be mutually exclusive. They could be pursued simultaneously or in a sequenced way, and each approach element could be given greater or lesser attention relative to the others.

The evidence brief was prepared to inform a stakeholder dialogue at which research evidence is one of many considerations. Participants' views and experiences and the tacit knowledge they bring to the issues at hand are also important inputs to the dialogue. One goal of the stakeholder dialogue is to spark insights – insights that can only come about when all of those who will be involved in or affected by future decisions about the issue can work through it together. A second goal of the stakeholder dialogue is to generate action by those who participate in the dialogue and by those who review the dialogue summary and the video interviews with dialogue participants.

<https://healthleadershipacademy.ca/files/2019/02/HILA.pdf> – were used to elicit feedback from two waves of key informants (as described in Box 1 and keeping in mind the equity considerations described in Box 2), the first of which included 26 innovative thinkers and the second of which included 19 health-system and other leaders.

The drivers are:

- 1) changing population demographics, with aging and longer lifespans combined with increased prevalence of chronic diseases and highly diverse ethnocultural populations;
- 2) evolving perspectives within the health system, including moving toward a person-centred, community-based, prevention- and population-health-focused, and equitable health system;
- 3) accelerating technological development in fields such as big data, artificial intelligence, precision medicine, and remote delivery;
- 4) increasing focus on new design approaches and innovations to facilitate improvement in the health system;
- 5) changing economic conditions that will influence resource allocation and the development of new funding and remuneration models in the health system;
- 6) blurring of lines within and between health and social systems with support for integration to address complex problems;
- 7) shifts in the physical environment as urban environments densify and climate change becomes an increasingly relevant issue; and
- 8) globalization contributing to increased migration of health human resources and populations in general.

Key informants generally agreed with these drivers, noting that many were already underway in influencing the health system, however, they made a small number of edits (e.g., addition of person-centred health systems and integration of health and social systems) resulting in the above list. Further, these drivers were used to help map out the scenarios that would characterize decision-making contexts in which future leaders will need to function.

While we at the Forum continued to work on this evidence brief, in parallel the Health Leadership Academy elaborated on these eight drivers, eventually settling on a range of technologic, economic, environmental, political and social forces that may also shape the futures for which leaders will need to be prepared. These include:

- technologic forces such as:
 - finance, regulation and drivers of health innovation
 - availability and use of digital data and attitudes towards privacy and sharing of these data;
- economic forces such as:
 - state of the economy (e.g., GDP growth),

Box 2: Equity considerations

A problem may disproportionately affect some groups in society. The benefits, harms and costs of approach elements to address the problem may vary across groups. Implementation considerations may also vary across groups.

One way to identify groups warranting particular attention is to use “PROGRESS,” which is an acronym formed by the first letters of the following eight ways that can be used to describe groups†:

- place of residence (e.g., rural and remote populations);
- race/ethnicity/culture (e.g., First Nations and Inuit populations, immigrant populations and linguistic minority populations);
- occupation or labour-market experiences more generally (e.g., those in “precarious work” arrangements);
- gender;
- religion;
- educational level (e.g., health literacy);
- socio-economic status (e.g., economically disadvantaged populations); and
- social capital/social exclusion.

The evidence brief strives to address all leaders, emerging leaders and potential future leaders, but (where possible) it also gives particular attention to people who have been historically under-represented in leadership positions including:

- women;
- individuals who are linguistic and/or ethnic minorities;
- Francophones (in select provinces);
- Indigenous peoples;
- individuals from diverse health professional backgrounds (beyond physicians and nurses); and
- individuals working in rural and remote areas.

† The PROGRESS framework was developed by Tim Evans and Hilary Brown (Evans T, Brown H. Road traffic crashes: operationalizing equity in the context of health sector reform. *Injury Control and Safety Promotion* 2003;10(1-2): 11–12). It is being tested by the Cochrane Collaboration Health Equity Field as a means of evaluating the impact of interventions on health equity.

- availability of other resources, including human resources, health technology and infrastructure
- income equality, including income distribution and the percentage of the population under the poverty line;
- environmental forces such as:
 - climate change, its effect on resource availability, and weather-related morbidity and mortality,
 - pollution and toxicity in the air and its impacts on health,
 - population mortality and work days lost to communicable disease as well as antibiotic resistance
 - access to sanitary tools to prevent exposure to waste and ensuring water and food quality, notably in Indigenous communities;
- political forces such as:
 - ability and willingness of political bodies and organizations that have been given delegated authority to directly influence the lives of the population,
 - mortality and serious injury due to violence, primarily related to increased presence of guns in large urban centres,
 - origin of governance including at which level policy for society is set (i.e., supranational, national or local),
 - availability of public funding and its allocation across sectors
 - changing population composition due to immigration and emigration; and
- social forces such as:
 - distribution of various age/gender gaps in a population and trends towards aging populations,
 - social attitudes towards and practices and habits related to healthy living and active lifestyles,
 - growing incidence of chronic diseases, including mental health conditions,
 - attitudes towards aging, effective retirement age, and activity and participation of older populations within the economy
 - community involvement, dynamism of civil society, and involvement of local communities in health provision.

While the ways in which these drivers and forces will manifest into large-scale health-system change remains uncertain, the availability of quality leadership is a foundational enabler of health-system performance and essential if health systems are to transform appropriately in light of a range of future scenarios.

Unfortunately, it has become increasingly apparent that health systems in Canada have too few leaders who possess the leadership capabilities to steward the type of transformative change needed to contend with the many drivers of (and forces shaping) change outlined above.⁽⁷⁾ For instance, it has been argued that health-system leaders are too risk averse and beholden to existing structures and processes, rather than open to pursuing transformational change that can help to promote innovation.⁽⁶⁾ Furthermore, a cross-case analysis on leadership and health-system redesign efforts found a lack of capacity among current system leaders to drive transformational change in areas that are particularly important to support system improvements.^(2; 7) In addition to these insights, a nation-wide health-leadership benchmarking study found that:

- close to 70% of respondents from health organizations think there is a gap in leadership skills for dealing with future change;
- more than 60% don't (or can't) protect time for leadership development; and
- only two-fifths of responding organizations reported having a formal approach to succession planning and identifying emerging leaders.⁽⁸⁾

Despite both being five years old, findings from these two studies have important implications for the next generation of leaders who, without adequate preparation, will be ill-equipped to respond to the range of drivers listed above and to ensure our health systems achieve the triple aim.

Although the results above are not cause for optimism, it should be acknowledged that since the release of the studies mentioned above, a number of key efforts and initiatives that were already gaining momentum have continued to help grow leadership capacity in Canada. These include: 1) the broad acceptance of the LEADS in a Caring Environment Framework in providing a common language and guide to understanding

leadership (particularly in provinces outside of Ontario); 2) the development of additional leadership-focused efforts internationally, such as the American College of Healthcare Executives (ACHE) competencies framework, leadership initiatives championed by ACHE and the American Hospital Association (AHA), as well as reports completed by The King's Fund in the United Kingdom, all of which provide helpful frames that those focused on leadership development in Canada can learn from;(9-12) 3) research that has expanded the knowledge base on health leadership; 4) the continued training efforts provided by national organizations such as the Canadian College of Health Leaders and provincial professional bodies; and 5) the emergence of a wide range of additional health-leadership programs and courses provided by post-secondary institutions, such as the one provided through the Health Leadership Academy (which are detailed in Table 1 below).

Table 1: Examples of leadership programs and initiatives in Canada

Audience focus (jurisdictional focus)	Sponsor	Program (if applicable)	Activities
Future physician leaders (Ontario)	University of Toronto	M.Sc. in System Leadership and Innovation (SLI)	<ul style="list-style-type: none"> • Six graduate courses and three practicum experiences for medical students at University of Toronto
Future physician leaders (national)	Royal College of Physicians and Surgeons of Canada	CanMEDS	<ul style="list-style-type: none"> • Existing CanMEDS (2015) framework for physician specialty training includes a “leader” competency
Future physician specialist leaders	Royal College of Physicians and Surgeons of Canada	CanMEDS	<ul style="list-style-type: none"> • Existing CanMEDS (2015) framework for physician specialty training includes some leadership competencies in the manager role and includes a new leadership role
Nursing leaders (national)	Academy of Canadian Executive Nurses (and hosted by the Canadian Nurses Association)	n/a	<ul style="list-style-type: none"> • Membership-based association that seeks to support the development of current and emerging executive nurse leaders
Nursing leaders (Ontario)	Registered Nurses' Association of Ontario	n/a	<ul style="list-style-type: none"> • Annual conference on nurse executive leadership
Physician leaders (national)	Canadian Society of Physician Leaders	n/a	<ul style="list-style-type: none"> • Quarterly e-Journal • Canadian Certified Physician Executive credential nationally recognized, standards-based peer assessment for physicians in leadership roles • Annual Canadian Conference on Physician Leadership network • Mentorship program • CSPL Excellence in Medical Leadership Award
	Joule Inc. (a Canadian Medical Association subsidiary)	Physician Leadership Institute	<ul style="list-style-type: none"> • Provides online and in-person leadership courses (e.g., healthcare economics, leading change) • Certificate given to those who have completed enough courses and demonstrated executive healthcare leadership experience
	Canadian Medical Association & Canadian Society of Physician Leaders	Canadian Conference on Physician Leadership	<ul style="list-style-type: none"> • Annual two-day conference on physician leadership
Physician leaders (Ontario)	Ontario Medical Association	Physician Leadership Development Program	<ul style="list-style-type: none"> • Four in-person seminars and one remote course
Physician leaders (Nova Scotia)	Nova Scotia Health Authority	Leadership Development	<ul style="list-style-type: none"> • Online modules and classroom programs
Physician leaders (PEI)	Medical Society of PEI	Leadership Development	<ul style="list-style-type: none"> • Online modules and classroom programs
Professional and managerial ‘lean’ leaders (Saskatchewan)	Saskatchewan Health (through a partnership with John Black and Associates)	Lean Leader Program	<ul style="list-style-type: none"> • 80 days of training for any prospective lean leader and 22 days of training for physician lean learners

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Audience focus (jurisdictional focus)	Sponsor	Program (if applicable)	Activities
Professional and managerial leaders (Ontario)	Improving and Driving Excellence Across Sectors (IDEAS)	Foundations of Quality Improvement	<ul style="list-style-type: none"> Course with one three-hour online component and a one-day in-person workshop focusing on quality improvement
	Improving and Driving Excellence Across Sectors	Advanced Learning Program	<ul style="list-style-type: none"> Seven in-person sessions and online learning modules where participants learn how to develop, implement and report on a quality-improvement project
Interprofessional (nursing and health) leaders	Canadian Nurses Association	Dorothy Wylie Nursing/Health Leaders Institute	<ul style="list-style-type: none"> Two-part, seven-day, interprofessional, residential leadership program
Interprofessional (physician and operational) leaders	Saskatoon Health Region (on behalf of a number of partners)	Saskatchewan Leadership Program	<ul style="list-style-type: none"> Nine-month-long mix of periodic face-to-face and online training for those who are three-to-seven years or one-to-two years away from a leadership position or who are currently in a physician or operational leadership position
Interprofessional health leadership teams (national)	Canadian Foundation for Healthcare Improvement	Executive Training for Research Application (EXTRA) Program	<ul style="list-style-type: none"> Fourteen-month combined face-to-face and online, team-based and improvement-project-centred training
Future health leaders (national)	Universities across Canada	Health administration, management and leadership-training programs**	<ul style="list-style-type: none"> Undergraduate and graduate degrees in health administration, management and leadership
	Universities across Canada	Health administration, management and leadership-training programs	<ul style="list-style-type: none"> Short courses in health administration, management and leadership (e.g., Advanced health-leadership program)
All health leaders (national)	Canadian College of Health Leaders***	Certified Health Executive Program	<ul style="list-style-type: none"> Short online courses Mentorship National health-leadership conference (in partnership with the Canadian Healthcare Association – see below) B.C. health leaders conference (in partnership with the Health Care Leaders Association of B.C.) Awards for excellence in health leadership Fellowship designation Leadership certification 21 regional chapters
	Canadian College of Health Leaders	LEADS Canada	<ul style="list-style-type: none"> Customized co-created leadership development programs for health organizations, regions and authorities Half-day, one-day and (up to) five-day leadership development learning based on the LEADS framework LEADS 360 assessments with coached debriefing Moderated communities of practice to support cohort learning and resource sharing Webinars Evidence-based toolkits Certification for coaching, integration and facilitation to support organizational capacity building Annual conference Other customized programming as requested/designed
	Canadian Foundation for Healthcare Improvement	E-learning and workshops focused on healthcare improvement	<ul style="list-style-type: none"> 90-minute live webinars Online workshops that combine live webinars with supported independent study One-day face-to-face ‘improvement workshops’ Two-day face-to-face workshop seminars (in partnership with the Institute for Healthcare Improvement)

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Audience focus (jurisdictional focus)	Sponsor	Program (if applicable)	Activities
	Canadian Healthcare Association	CHA Learning	<ul style="list-style-type: none"> • Range of online courses that combine home-study units and webinars, including on health governance
	Canadian Health Leadership Network	n/a	<ul style="list-style-type: none"> • Dialogue and engagement about health leadership • Research, knowledge mobilization and evaluation about health leadership • LEADS framework and tools promotion • Health-leadership strategy development
	Michener Institute	Leadership in Health Care Certificate Program	<ul style="list-style-type: none"> • 16-20 month online education program that draws on a wide range of management and organizational knowledge in four required courses
All health leaders (B.C.)	BC Health Leadership Development Collaborative	Leadership LINX	<ul style="list-style-type: none"> • 14 online leadership modules based on the LEADS capability framework and six management modules for emerging leaders • Three modules for those leaders with two-to-three years of professional experience • Three-day program for experienced leaders, with a peer-to-peer online community and one-on-one coaching • Coaching and mentoring programs
All hospital leaders (Ontario)	Ontario Hospital Association	n/a	<ul style="list-style-type: none"> • Governance conference, course and guide (through the Governance Centre for Excellence) • Leadership competency models
All community-based leaders (Ontario)	<p>Ontario Ministry of Health and Long Term Care (funding agency)</p> <p>Ontario Community Support Association (host agency)</p> <p>Ontario Community Support Agency, Canadian Mental Health Association – Ontario, Association of Family Health Teams of Ontario, Association of Ontario Health Centres, and Addictions Mental Health Ontario (Steering Committee)</p>	LeaderShift/ LEADS Canada	<ul style="list-style-type: none"> • Five-day LEADS Learning Series • Moderated communities of practice • Custom webinars • One-day conference • LEADS Lite webinar series (five 90-minute webinars)
Community-based leaders (Ontario)	Association of Family Health Teams Ontario		<ul style="list-style-type: none"> • LEADS Lite webinar series (five 90-minute webinars)
All board members and leadership teams (national)	Canadian Foundation for Healthcare Improvement and Canadian Patient Safety Institute	Effective Governance for Quality and Patient Safety Program	<ul style="list-style-type: none"> • Toolkit • Educational session
All board members (Ontario)	Ontario Hospital Association	n/a	<ul style="list-style-type: none"> • One-day leadership certificate for healthcare board and committee chairs
All board members (national)	Institute of Corporate Directors with five business schools	Directors Education Program	<ul style="list-style-type: none"> • Twelve-day face-to-face course (not health system specific)
Public servants (national)	Office of the Chief Human Resources Officer	Executive Leadership Development Program	<ul style="list-style-type: none"> • 21-28 days spread out over 12 months where emerging leaders receiving mentorship from former and current public-service deputy ministers and subject-matter experts undertake regional and northern tours to meet with leaders from the federal, provincial and municipal public service as well as from the private sector

Audience focus (jurisdictional focus)	Sponsor	Program (if applicable)	Activities
	The Conference Board of Canada	The Niagara Institute	<ul style="list-style-type: none"> Programs range from comprehensive leadership program to build strength in areas identified as critical to effective leadership at an organizational level to one-day workshops focused on building leadership characteristics that will improve your effectiveness
All health organizations (national)	Accreditation Canada	Leadership standards	<ul style="list-style-type: none"> Key leadership responsibilities that organizations must have in place, namely: 1) creating and sustaining a caring culture; 2) planning and designing services; 3) allocating resources and building infrastructure; and 4) monitoring and improving quality and safety

Despite the range of programs and initiatives highlighted above, there remain relatively few focused on developing the next generation of leaders, who will be consistently faced with new challenges in complex and adaptive health systems. In order to move forward in developing the next generation of leaders in Canada and adapting the initiatives outlined above, it is imperative to understand what futures these leaders will need to be prepared to address.

In efforts to anticipate these changes, six expected futures – again, first identified by a literature review conducted by the Health Leadership Academy – were used in our key-informant interviews with 26 innovative thinkers (where the focus was on their implications for the competencies needed by health-system leaders), and with 19 health-system and other leaders (where the focus was on how to support development of the competencies in leadership training and in the health system). The expected futures to emerge from this process were not considered to be mutually exclusive but rather all or only some may take shape. This list is also not exhaustive and should act as a jumping-off point for deliberations about the ways in which the health system may change. The six expected futures are:

- 1) emerging leaders increasingly operate within a rapid-learning health-system orientation at all levels (self-management, clinical encounter, program, organization, sub-region, region and provincial/federal government);
- 2) emerging leaders are increasingly based in the home-and-community-care and primary-care sectors and more effectively coordinate care across sectors;
- 3) emerging leaders increasingly transition into and out of healthcare and work in partnership with those outside of healthcare;
- 4) emerging leaders increasingly work across health and social systems to improve health and well-being, particularly when addressing complex conditions such as in mental health and addictions;
- 5) emerging leaders are increasingly attuned to the way in which the health system is evolving, which includes meaningfully engaging patients in their own care and in health systems decision-making; and
- 6) emerging leaders increasingly embrace and integrate new technologies (including advances in artificial intelligence, virtual care, and precision medicine) into the health system, changing who the system interacts with (e.g., types of patients) and the modes of these interactions.

While we at the Forum continued to work on this evidence brief, in parallel the Health Leadership Academy developed three alternative futures intended to challenge conventional thinking by linking health-system reforms to broader technologic, economic, environmental, political and social forces (again captured in the report referenced above). The alternative futures are as follows:

- 1) significant failures in health-system reforms (labelled in the Health Leadership Academy's report as 'a future of growing desperation');
- 2) health-system reforms follow a piecemeal approach according to known trends (labelled in the report as 'a future of conventional expectation'); and
- 3) significant successes in transformational health-system reforms (labelled in the report as 'a future of high aspirations').

A summary of these alternative futures and the key forces driving change is provided in Table 2 below. It should be noted that the six expected futures (listed above) can be conceptualized (in part or including all six) in the second or third alternative future (e.g., a future of conventional expectation).

Table 2: Overview of alternative futures (13)

Alternative futures	Summary of forces driving change (with the dominant force appearing first)
Significant failures in health-system reforms (a future of growing desperation)	<p>Economic</p> <ul style="list-style-type: none"> • Provincial and territorial health-insurance plans experience severe budget cuts and publicly funded services are reduced to meet only basic needs, thereby requiring greater out-of-pocket contributions for healthcare • Governments permit private for-profit firms to enter the for-profit market for hospital and physician-provided care • New business players emerge in the health industry, including large private for-profit firms, that participate across the health system from health-promotion and disease-prevention efforts to service delivery to development of health technologies and treatments • In efforts to increase economic growth and spur innovation governments liberalize markets and enter into new supranational trade agreements that facilitate the entry of private for-profit firms to compete with domestic firms <p>Other forces</p> <ul style="list-style-type: none"> • Social <ul style="list-style-type: none"> ○ Little progress towards improving the health of the population ○ New sense of conditional solidarity emerges whereby people are only willing to share risks with those who have similar or better risk profiles ○ Society becomes fragmented into demographic, ethnic and economic factions, only some of which lead initiatives to focus on healthcare innovation and the social determinants of health ○ Increase in medical tourism with affluent consumers seeking care overseas • Political <ul style="list-style-type: none"> ○ Governments focus their efforts of regulating large integrated-care providers and funding services for those unable to purchase care ○ Limited success in making health-system transformations leads to apathy and disillusionment with government • Environmental <ul style="list-style-type: none"> ○ Climate change leads to bacteria, some of which are antibiotic resistant, and other causes of disease • Technological <ul style="list-style-type: none"> ○ Organizations compete to establish new standards that accelerate the adoption of technologies and business models, but may remove incentives for collaboration ○ Advances in science offer new treatments, target drugs and disease control as well as an expansion into personalized treatments using genomics and proteomics, which may not be widely available based on their expense
Health-system reforms follow a piecemeal approach according to known trends (a future of conventional expectation)	<p>Political</p> <ul style="list-style-type: none"> • Health becomes a prominent political issue, with political candidates openly discussing failures of the health system to improve population health • These political debates encourage a greater emphasis on social determinants of health • Emphasis on health promotion and disease prevention reduces demand for medical care • Bi-partisan support for health-system reforms that target care for those with complex needs, given the potential to prevent hospitalizations and reduce costs <p>Other forces</p> <ul style="list-style-type: none"> • Economic <ul style="list-style-type: none"> ○ Proportion of GDP dedicated to health continues to grow ○ Provinces and territorial governments move to capitation or bundled-payment schemes and begin to incentivize professionals to meet quality standards ○ Focus on prevention as a strategy combined with fiscal pressures leads to the creation of a market for innovative products and services to improve health and prevent disease • Technological <ul style="list-style-type: none"> ○ New treatments for previously expensive and untreatable conditions are developed ○ Increased use of genomics, proteomics and metabolomics to slow disease progress and reduce the burden of an aging society ○ Increased use of digital technologies (e.g., social networks and virtual models and simulations) accelerates dissemination of disruptive innovations • Social

	<ul style="list-style-type: none"> ○ Canadian society grows older from the aging cohort of baby boomers ○ Overall health of Canadians begins to lag behind other OECD countries ○ Growing understanding of the determinants of health stimulates debates about personal responsibility and fairness in risk pooling, placing social pressure on individuals to take care of themselves and their families ● Environmental <ul style="list-style-type: none"> ○ Not described
Significant successes in transformational health-system reforms (a future of high aspirations)	<p>Technological</p> <ul style="list-style-type: none"> ● New media, including social networking, turns public attention to how initiatives in communities around the country (e.g., health innovation, health equity and the social determinants of health) are demonstrably improving health and reducing healthcare expenditures ● Communities increasingly use open-source tools to map social problems and identify effective solutions ● Innovative technologies and big data support the implementation of personalized medicine, including new cures and the effective management of complex conditions, and result in the implementation of personalized medicine ● Development of large databases and improved analytics prompt segments of the entertainment industry to focus on improving health ● People's realization of the benefits of new technologies help them to overcome initial concerns over privacy <p>Other forces</p> <ul style="list-style-type: none"> ● Political <ul style="list-style-type: none"> ○ Health becomes the primary political concern and unites Canadians in the face of major challenges ○ Politicians and policymakers increasingly engage the public in meaningful ways to help develop policy solutions ○ Government agencies use online technologies to engage the public and enhance governance ● Social <ul style="list-style-type: none"> ○ New technologies support advances in treating diseases, while a focus on social determinants of health lead to a reduced reliance on heroic medical procedures ● Economic <ul style="list-style-type: none"> ○ Technologies support a long-term shift towards healthier communities and more effective personal care leading to a reduction in health spending and redistribution of resources to other sectors ● Environmental <ul style="list-style-type: none"> ○ Not described

This evidence brief uses these six expected futures and three alternative futures as examples of new scenarios that emerging health-system leaders will need to be prepared to address. However, given that the three alternative futures were just developed, their implications for the competencies needed and for how training programs will help to develop the competencies have not been included in the evidence brief, but will be left for discussion on the day of the dialogue. For those wishing to know more about these three alternative futures, the document from which they are derived will be made available on the day of the dialogue.

The evidence brief will also focus on the ways in which existing programs and initiatives can better prepare emerging leaders, and how the broader health system can support emerging leaders to take advantage of training opportunities and put leadership competencies to use. While the evidence brief was developed to inform the specific efforts of one organization (the Health Leadership Academy), lessons from the expected futures and alternative futures presented above, evidence included in the brief and the insights from the dialogue are equally relevant for a broad spectrum of individuals and organizations engaged in building capacity for health leadership and planning for the future of health systems in Canada.

Finally, while this evidence brief strives to address all leaders, emerging leaders and future leaders in Canada, where possible it also gives particular attention to those who have been historically under-represented in leadership positions, including women, individuals who are linguistic and/or ethnic minorities, Francophones (in select provinces), Indigenous peoples, individuals from diverse health professional backgrounds, and individuals working in rural and remote areas.

THE PROBLEM

A number of specific challenges in relation to how leadership can be fostered to support health-system redesign was highlighted in a previous evidence brief prepared by the McMaster Health Forum, including:

- 1) links between leadership, its antecedents and its consequences have not been well established (i.e., what effective leadership can actually achieve);
- 2) leadership programs and initiatives aren't getting us where we need to be (i.e., there are gaps in the range of existing programs across Canada);
- 3) existing health-system arrangements complicate the situation significantly (i.e., governance, financial and delivery arrangements make it difficult to determine how large the problem is, undertake initiatives to address it, and track progress towards addressing it); and
- 4) progress is being made, but slowly (i.e., the Canadian Health Leadership Network, the Canadian College of Health Leaders and the increasing adoption of the LEADS framework are bright spots, but are not sufficient to contribute to the broader transformations in leadership systems across Canada that is required).(1)

While these challenges are also important in the context of this evidence brief (and have specific aspects that overlap with the discussion that follows) there are at least four specific challenges that relate to leadership development and the capacity of future leaders to operate within the six expected (and three alternative) futures outlined above that need to be both acknowledged and addressed in order to move forward in preparing emerging leaders:

- 1) health leaders are often trained for leadership roles in specific sectors and settings and are not equipped to work across health and social systems;
- 2) there is a lack of coordinated efforts to establish and collectively pursue health-system leadership development;
- 3) health leaders largely focus on incremental change rather than anticipating or stewarding alternative futures; and
- 4) health-system arrangements are not aligned to support the identification, development or cultivation of emerging leaders.

Health leaders are often trained for leadership roles in specific sectors and settings and not equipped to work across health and social systems

As indicated above in Table 1, there are a number of programs in Canada with the aim of supporting leadership development in the health sector. However, taken together they may not be optimally suited to achieve health-system leadership goals across the country more generally, and in the more specific context of considering expected or alternative futures in healthcare, are almost certainly falling short. This is due to at least three different aspects of existing leadership-training programs:

- 1) they are often too narrow in scope;
- 2) they aren't accessible to the full range of individuals and organizations who may have the ability to emerge as leaders in the future; and
- 3) they often fail to acknowledge the trend towards policymaking across health and social systems.

Box 3: Mobilizing research evidence about the problem

The available research evidence about the problem was sought from a range of published and 'grey' research literature sources. Published literature that provided a comparative dimension to an understanding of the problem was sought using three health-services research 'hedges' in Pubmed, namely those for appropriateness, processes and outcomes of care (which increase the chances of us identifying administrative database studies and community surveys). Published literature that provided insights into alternative ways of framing the problem was sought using a fourth hedge in PubMed, namely the one for qualitative research. Grey literature was sought by reviewing the websites of a number of domestic and international organizations, such as the Association of Canadian Academic Healthcare Organizations, Canadian Health Leadership Network, American College of Healthcare Executives, American Hospital Association, and The King's Fund.

Priority was given to research evidence that was published more recently, that was locally applicable (in the sense of having been conducted in Canada), and that took equity considerations into account.

The first challenging aspect of existing leadership-training programs is that they are often narrow in scope. For instance, many existing leadership programs and initiatives in Canada emphasize training a specific type of leader (e.g., physicians and nurses who can serve in clinical or administrative leadership roles) in specific sectors (e.g., specialty care) and in particular settings (e.g., hospitals or regional health authorities).(1) As highlighted in the three evidence briefs prepared by the McMaster Health Forum to inform three stakeholder dialogues focused on leadership capacity at the provincial and national levels,(1; 14-17) despite some exceptions, existing leadership programs and initiatives in Canada tend to target:

- current leaders in positions of administrative authority, rather than emerging leaders;
- physicians and nurses rather than the full range of health professionals who play fundamental roles in health systems across the country now, and who will be vital in ensuring leadership capacity is sufficient to oversee systems in any one of the expected or alternative futures described in this brief; and
- individuals focused on their own capacity rather than system-wide capacity that emphasizes the roles of teams or organizations (the latter of which may be seeking to establish and drive standardization of key leadership responsibilities in the country).(1; 14-17)

Unfortunately, these narrow targets create significant gaps in the training available to equip leaders with the right mix of capabilities required in the face of the many future scenarios which may unfold.

Secondly, existing leadership programs aren't easily accessible to all potential leaders in the country. In particular, insights and reflections from the 19 key informants who were consulted in preparing this brief suggest that the majority of the existing leadership programs in Canada are, in practice, only accessible to a small minority of potential leaders in the country. In particular, those who enroll in leadership training tend to skew towards individuals working in organizations that can afford to pay (e.g., high-level managers in large hospitals), and those located in urban centres (where many of the programs listed are based).

Third and finally, the review of existing initiatives suggests that not only are existing programs targeting a narrower set of existing and potential leaders than is needed, they are also confined to developing leadership within the health system only. This is despite the growing awareness of a need to align decision-making across health and social systems, which would require leadership capabilities that can help to facilitate this more integrated approach to health and social policymaking.

There is a lack of coordinated efforts to establish and collectively pursue health-system leadership development

In the last decade, explicit emphasis has been placed on leadership development in the health sector in Canada.(18) Despite this emphasis, there is a lack of a clear long-term and shared strategic approach for both health reform and the leadership needed to pursue it across the country,(1; 2; 17) which stems from at least three interrelated issues:

- 1) a lack of a shared understanding of leadership and its aims;
- 2) fragmented adoption and use of frameworks that are only partially appropriate for supporting the training of emerging leaders to respond to expected and alternative futures; and
- 3) a lack of investment in efforts to support the development of a vision for leadership.

First, key policymakers and stakeholders have highlighted a lack of shared understanding of core concepts related to leadership, and more importantly, what the goals of leadership development in Canada should be.(17) In particular, during a stakeholder dialogue convened by the Forum in 2014, dialogue participants highlighted that part of the challenge in pursuing collective, coordinated efforts to improve health-system leadership was the lack of collective understanding about the following issues that are salient to preparing emerging leaders for the alternative futures highlighted in this brief:

- why leadership is needed (and for what purpose);
- what shared health-system goals exist in Canada that leaders in provincial and territorial health systems can agree to within efforts to establish stronger leadership;

- how health-system redesign is defined, and success in redesign measured;
- what complex and adaptive systems are, and what they mean for the types of leadership needed in healthcare;
- what approaches can be taken to ensure an appropriate balance between the need for accountability among leaders for achieving specific goals and the need for flexibility in the face of complexity (and alternative futures); and
- what properties of both informal and formal approaches to leadership development are most important.(1; 15)

Second, despite the existence of useful leadership frameworks such as LEADS and the ACHE competencies, the adoption and use of such tools has been fragmented rather than consistent across the country. In particular, despite its potential usefulness, survey results from the Canadian Health Leadership Network benchmarking study found that only 47% of total respondents (and 63% of Association of Canadian Academic Healthcare Organization members) had adopted the LEADS framework as an orienting device to support leadership development within their organizations.(8) Furthermore, while the use of frameworks such as LEADS is increasing and presents an approach to thinking about leadership in a way that is more attuned to the realities of complex adaptive health systems, as highlighted above their focus is only partially appropriate for supporting the development of emerging leaders for alternative futures.

Third, even though the need for a collective vision has been raised among policymakers and stakeholders across the country, there has been a lack of investment in efforts to support this type of work, and a lack of clarity about who could coordinate it.(2) For instance, while there have been efforts to map the extent to which leadership capacity exists across health systems in Canada (1; 2; 8; 15), less effort has been placed on defining a collective vision and establishing stakeholders' roles and responsibilities in order to build necessary leadership capacity that can be leveraged to drive health-system transformation in Canada. This lack of effort also extends to explicitly monitoring how this capacity is changing (with the implementation and expansion of leadership programs and initiatives) or how the demands for leadership will evolve.

Health leaders largely focus on incremental change rather than anticipating or stewarding alternative futures

In considering the range of expected or alternative futures in health systems in Canada, one important similarity is that, regardless of the health and social system(s) in which they unfold, they all require system-wide transformations that diverge from the status quo in fundamental ways rather than incremental changes. However, existing leaders and initiatives to prepare future leaders are not fully oriented to this view of system-wide transformation, and instead tend to focus on tweaks at the margins. There are at least four factors that contribute to this:

- 1) a reliance on traditional leadership frameworks that prioritize static individual-level characteristics in recruiting and training potential leaders;
- 2) a focus within leadership development efforts on addressing existing health-system challenges and achieving pre-established goals;
- 3) a failure to learn from pockets of innovation in health-system leadership; and
- 4) dominant leadership paradigms that are not aligned with the consideration of multiple alternative futures.

First, traditional frameworks used to foster leadership have prioritized recruiting and training potential leaders with an emphasis on individual-level characteristics (e.g., a person's intelligence or academic credentials) that are neither flexible nor conducive to the kinds of capabilities required to orchestrate system-wide changes.(19) Stewarding transformational change towards any of the alternative futures outlined above requires a much more dynamic, flexible and system-oriented lens through which to view leadership development.

Fortunately, while these more traditional approaches tend to persist in many organizations, there have been efforts to overcome them in fostering the development of existing leaders as well as emergent leaders. These

have unfolded in the context of relatively recent shifts towards focusing on the required competencies for leadership in healthcare, which has led to a growing emphasis on an individual's ability to adapt and improve performance in evolving organizations and in contexts that are changing and unpredictable.(18) The primary example of such an effort in Canada is the development of the LEADS framework, which is made up of five primary domains of capabilities: 1) lead self; 2) engage others; 3) achieve results; 4) develop coalitions; and 5) systems transformation.(see Table 3)(18; 20) The LEADS framework is promising because there is evidence to suggest it is relevant in supporting a variety of health- and social-system applications (e.g., evidence-informed decision-making, mentorship, and emergency management), and there is some validation of its included capabilities as important factors in supporting health-system reforms in particular contexts.(18) It also has one domain explicitly focused on strategic thinking about the future (i.e., systems transformation). However, it could be argued that it has mainly been used to develop leadership capabilities among organizational leaders and managers, rather than training and developing emergent leaders for stewardship roles and broader transformational decision-making in the context of several potential futures. Interestingly, this may be reflected in the perspectives of current health-system leaders, given when the components of the framework were tested within the context of a real reform process (i.e., the Shared Services reform in Saskatchewan), the biggest discrepancies were related to policymakers' and stakeholders' assessments of whether they had the required competencies for strategic planning and for developing a vision and setting a direction for the system.(18)

As shown in Table 3, one other widely considered leadership framework – the ACHE leadership competencies framework – targets very similar domains as LEADS, albeit in slightly different language, with the notable difference being an explicit emphasis on technical 'business skills' such as financial management and risk management.(10) Similar competencies are also captured in the Centre for Creative Leadership's framework, with an analysis of evaluations taken from nearly 35,000 people working across the U.S. healthcare sector suggesting that five skills are particularly important for successful leadership: leading employees, resourcefulness, straightforwardness and composure, change management, and participative management.(21) There are also other emerging lines of thinking that are helpful complements to these frameworks in the context of considering alternative futures, including:

- the American Hospital Association's (AHA) work on 'Leadership Skills and Competencies for the Future Health Care Environment,' which has helped to highlight additional competencies relevant to evolving health systems, including change-management skills, managing ambiguity, understanding population health, actuarial sciences, the ability to engage in innovative thinking, and the willingness to take risks;(9) and
- The King's Fund work on embracing collective leadership to develop and maintain organizational cultures,(12) as well as their report on key insights from senior National Health Service leaders about the core leadership competencies needed to confront present and future healthcare challenges in the United Kingdom.(11)

Taken together, it is clear that, while these frameworks are a very promising step forward, more explicit consideration may be needed to determine which aspects are most salient in the context of alternative futures, and importantly the capabilities and competencies which may not yet be represented.

Table 3: Alignment between core capabilities included in LEADS and those included in the ACHE competencies framework

Core leadership capabilities in LEADS framework	Relevant leadership competencies in ACHE framework
Lead self - Emphasizes self-motivated leaders who: <ul style="list-style-type: none"> • are self-aware (they are aware of their own assumptions, values, principles, strengths and limitations) • manage themselves (they take responsibility for their own performance and health) • develop themselves (they actively seek opportunities and challenges for personal learning, character building and growth) • demonstrate character (they model qualities such as honesty, integrity, resilience and confidence) 	Professionalism Competencies relevant to LEADS include: <ul style="list-style-type: none"> • personal and professional accountability • professional development and lifelong learning.
Engage others – Emphasizes engaging leaders who: <ul style="list-style-type: none"> • foster development of others (they support and challenge others to achieve personal and professional goals) • contribute to the creation of healthy organizations (they create engaging environments where others have meaningful opportunities to contribute and ensure that resources are available to fulfil their expected responsibilities) • communicate effectively (they listen well and encourage open exchange of information and ideas using appropriate communication media) • build teams (they facilitate environments of collaboration and cooperation to achieve results) 	Communication and relationship management Competencies relevant to LEADS include: <ul style="list-style-type: none"> • relationship management • communication skills • facilitation and negotiation Business skills and knowledge Competencies relevant to LEADS include: <ul style="list-style-type: none"> • human resources management • organizational dynamics and governance • general management
Achieve results – Emphasizes goal-oriented leaders who: <ul style="list-style-type: none"> • set direction (they inspire vision by identifying, establishing and communicating clear and meaningful expectations and outcomes) • strategically align decisions with vision, values and evidence (they integrate organizational missions and values with reliable, valid evidence to make decisions) • take action to implement decisions (they act in a manner consistent with the organizational values to yield effective, efficient, public-centred service) • assess and evaluate (they measure and evaluate outcomes, compare the results against established benchmarks, and correct the course as appropriate) 	Leadership Competencies relevant to LEADS include: <ul style="list-style-type: none"> • leadership skills and behaviour • communicating vision • managing change Professionalism <ul style="list-style-type: none"> • personal and professional accountability
Develop coalitions – Emphasizes collaborative leaders who: <ul style="list-style-type: none"> • purposefully build partnerships and networks to create results (they create connections, trust and shared meaning with individuals and groups) • demonstrate a commitment to customers and service (they facilitate collaboration, cooperation and coalitions among diverse groups and perspectives aimed at learning to improve service) • mobilize knowledge (they employ methods to gather intelligence, encourage open exchange of information, and use quality evidence to influence action across the system) • navigate socio-political environments (they are politically astute, and can negotiate through conflict and mobilize support) 	Communication and relationship management Competencies relevant to LEADS include: <ul style="list-style-type: none"> • relationship management • communication skills • facilitation and negotiation Professionalism Competencies relevant to LEADS include: <ul style="list-style-type: none"> • contributions to the community and profession. Knowledge of the healthcare environment: Competencies relevant to LEADS include: <ul style="list-style-type: none"> • (knowledge of) healthcare systems and organizations • (knowledge of) healthcare personnel • (knowledge of) the patient’s perspective • (knowledge of) the community and the environment
Systems transformation – Emphasizes successful leaders who:	Leadership Competencies relevant to LEADS include:

<ul style="list-style-type: none"> • demonstrate systems/critical thinking (they think analytically and conceptually, questioning and challenging the status quo, to identify issues, solve problems and design and implement effective processes across systems and stakeholders) • encourage and support innovation (they create a climate of continuous improvement and creativity aimed at systemic change) • orient themselves strategically to the future (they scan the environment for ideas, best practices and emerging trends that will shape the system) • champion and orchestrate change (they actively contribute to change processes that improve health-service delivery) 	<ul style="list-style-type: none"> • leadership skills and behaviour • organizational climate and culture • communicating vision • managing change <p>Business skills and knowledge Competencies relevant to LEADS include:</p> <ul style="list-style-type: none"> • strategic planning and marketing*
<p>No directly relevant capabilities (although they appear as behaviours that demonstrate the capability in practice)</p>	<p>Business skills and knowledge Competencies that are addressed as behaviours within LEADS include:</p> <ul style="list-style-type: none"> • financial management (see ‘Achieve results’ capability) • risk management (see ‘Achieve results’ capability)

** Marketing aspect is not explicitly mentioned in the LEADS framework but aspects of it can be found in behaviours within the ‘Develop coalitions’ capability*

The second factor that contributes to a current focus on marginal rather than transformational change among existing leaders is that efforts aiming to promote innovation and foster leadership development in health systems across Canada are typically narrowly focused on addressing existing health-system problems and achieving pre-established goals, rather than forecasting and preparing to nimbly adapt to the evolving needs of alternative futures. One illustration of this can be found in efforts to develop leadership programs based on the LEADS framework in Saskatchewan, through the Saskatchewan Leadership Program (SLP). This initiative focused on cultivating leadership talent to support the effective and efficient implementation of provincial goals and priorities within a culture that aligned with Lean methodologies.(4) While this approach is transformational in the sense that it helped to establish leadership competencies focused on maximizing value-added activities and eliminating waste in healthcare that *could* result in transformative change, relatively little emphasis was placed on fostering foresight and planning for system-wide evolution in the context of expected or alternative futures.

The third factor contributing to the problem of focusing on change at the margins is that there has been a failure to learn from pockets of innovation that could support leadership development appropriate for health-system stewardship in a wide range of alternative futures. In particular, it should be acknowledged that there are a number of exciting ‘one-off’ approaches that signal an openness to fostering leadership for innovation and transformational change (e.g., innovation incubators such as MaRS). Unfortunately, more often than not, these efforts are not coordinated, and tend to end up focused on developing new things (oftentimes with the goal of commercialization) rather than on how the lessons learned through their progression can be leveraged to prepare a diverse range of emerging leaders capable of guiding systems through a number of alternate futures.(6) Insights from a stakeholder dialogue convened by the Forum in 2014 focused on fostering leadership for health-system redesign across Canada also highlighted that policymakers and stakeholders focused on leadership development across the country acknowledge that there have been many missed opportunities to learn from pockets of innovation and examples of leadership excellence in Canada and internationally.(17)

Fourth and finally, dominant leadership (and leadership-development) paradigms in healthcare in Canada are not conducive to a focus on preparing emerging leaders for a number of alternative futures. Specifically, healthcare is often correctly referred to as a ‘complex-adaptive system,’ and this lens for thinking about leadership is seldom embraced. In fact, this lens presents a tension with the dominant accountability-driven leadership paradigms that are widely established in Canada, and that emphasize accountability for achieving pre-defined goals.(17) This is particularly problematic, given constant change is what will increasingly define

the role of leaders in the future – both in terms of what they are expected to push for as ‘change masters,’ and what they will encounter in their careers.(7)

Health-system arrangements are not aligned to support the identification, development or cultivation of emerging leaders

Despite the acknowledgement that effective leadership is essential to support health systems to implement large-scale transformations, health-system arrangements are not aligned to support the identification, development or cultivation of emerging leaders. Instead, recent efforts in leadership development have been largely isolated within the programs and initiatives mentioned above without complementary initiatives set up within the health system to ensure the right people are receiving training, or that newly acquired competencies are regularly being used. A unique set of governance, financial and delivery arrangements complicates the system’s ability to effectively identify and foster emerging leaders, many of which were highlighted in a previous evidence brief on leadership.(1)

Two specific governance arrangements challenge the health system’s ability to effectively cultivate and support leaders. The first is a lack of centralized authority for leadership development, coaching or mentoring at either the provincial health system or national level. While some organizations such as the Canadian Health Leadership Network have begun to position themselves in this way, leadership training and development remains fragmented across the country, resulting in a wide range of training approaches, curricula and potential pathways for leaders to enter the health system. This approach contrasts with that of other Commonwealth countries such as Australia and the United Kingdom, both of which have established a national body to oversee the development of emerging leaders (e.g., Health Workforce Australia or NHS Leadership Network). This approach ensures that the right people are being identified, and that once trained they are able to return to positions to use their newly acquired competencies and to further develop as leaders. Second, the highly visible and politically charged nature of healthcare in Canada leaves little room for emerging leaders to develop and learn from successes or failures in practice.

While we have already mentioned that leadership-development programs are not accessible to all potential leaders in the country, given they are often paid for out-of-pocket or require the individual to negotiate paid or unpaid leave, additional financial arrangements have typically not been explored. Organizations and governments across the country differ in whether they pay for leadership development out of their clinical care budget or from a dedicated funding pool.(1) These two arrangements create different incentives for the identification and participation of emerging leaders, with the opportunity cost seen as being reductions in patient care for those paying out of their clinical care budgets. Similarly, organizations may differ in their degree of certainty that they will reap direct benefits from supporting leadership development and as a result may be more or less likely to put forward candidates to attend leadership-development programs.(1)

Finally, five unique delivery arrangements challenge the system’s ability to effectively identify and foster emerging leaders. First, and as briefly addressed in a previous section, there is a lack of alignment in the terminology, frameworks, curriculum standards and performance metrics used in leadership-development programs across the country, resulting in leaders being equipped with a wide range of different competencies and leadership styles rather than applying a collective vision for leadership. Second, while the cross-case analysis and benchmarking studies cited above made important contributions towards understanding the state of leadership in the country, both of these were one-off examples of efforts to monitor the state of leadership and leadership development in Canada. There is currently no continuous monitoring of leadership capacity at either the provincial or national level. While many provincial professional regulatory colleges do maintain a comprehensive registry of who is licensed to practice in Canada, there is a very limited understanding of the number of individuals who have participated in leadership training and in which programs, as well as their existing role in the system. A third and related point is the limited efforts to undertake systematic leadership and succession planning – an activity that could be enabled by the availability of information from monitoring the status of trained leaders in Canada. Fourth, the country lacks transparent pathways to transition into a leadership position. Unlike other careers in the health system, once individuals have undertaken leadership

training there is significant uncertainty about how they can place themselves on a trajectory to be considered for leadership positions. This potentially leaves individuals with the right competencies in positions where they are unable to exercise them and without a clear understanding of what steps need to be taken that will enable them to do so. Finally, while research capacity in the field of health leadership has grown in recent years, supporting the use of the resulting research findings remains ad hoc, which limits the widespread understanding of findings and best practices across the health system.

Additional equity-related observations about the problem

Equity-related considerations focused on the groups prioritized in this brief were not explicitly addressed in the literature we identified about the problem. However, one aspect of the problem that was consistently mentioned by the 19 health-system and other leaders who participated in key-informant interviews was the need for greater diversity among health-system leaders. In particular, key informants described historical under-representation in leadership positions by individuals from the groups we prioritized, including:

- women;
- individuals who are linguistic and/or ethnic minorities;
- Francophones (in select provinces);
- Indigenous peoples;
- individuals from diverse health professional backgrounds (beyond physicians and nurses); and
- individuals working in rural and remote areas.

Additionally, while there has been a significant shift in the discourse around health-system strengthening that includes an increasing emphasis on the need for cultural competencies, particularly among those providing care to patients,(22-26) relatively less attention has been placed on ensuring diversity in management and leadership positions. We were unable to identify any Canadian studies that examined the extent to which this representation was lacking, however, a 2015 survey conducted by the American Hospital Association found that while minorities represented 32% of patients in hospitals, they comprised only 14% of hospital board members, 11% of executive leadership, and 19% of mid-level managers. The survey further found that while women represent 80% of the healthcare workforce, they occupy only 25% of hospital CEO positions in the U.S.

With that said, there has been an increasing amount of business literature documenting the benefits of diverse management and leadership including: improved integration of workers; positive view of the organization from prospective personnel; increased insight into cultural sensitivity; improved problem solving through a wider range of perspectives; and system flexibility to react to environmental changes.(27)

A wide variety of social and economic factors are at play that limit the representation of these individuals in management and leadership positions, however, one that is particularly salient to this evidence brief and highlighted in the literature is the challenge that many of these populations face in participating in formal leadership-development programs. As highlighted later in the evidence brief, two older medium-quality reviews and one recent medium-quality review identified a lack of systematically identifying candidates for leadership training, lack of relief covered, need for obtaining paid or unpaid study leave, and expectation to use personal time to fulfil training requirements as barriers to participating in leadership training.(28-30) These barriers are especially salient for:

- those individuals working in the health system who may not be aware that leadership opportunities exist (and therefore rely on recruitment to participate);
- those individuals earning less who may not be able to afford the cost of leadership development programs or may not be able to afford an unpaid leave to attend these programs; and
- those individuals who live and work in rural and remote areas which are at a considerable distance from most development programs, increasing the cost and time requirements of participating.

THREE ELEMENTS OF A POTENTIALLY COMPREHENSIVE APPROACH FOR ADDRESSING THE PROBLEM

In considering the types of emerging leaders required to steward Canadian health systems in the face of the many expected or alternative futures, it can be tempting to fall into the common misconception that we should look to business leaders for direction in public service, despite a growing awareness that, as captured in a quote taken from a book recently published by Anand Giridharadas, unlike business, “accountancy, medicine, education, espionage and seafaring all have their own tools and modes of analysis, but none of those approaches was widely promoted as the solution to virtually everything else.”⁽³¹⁾ Similar sentiments were emphasized consistently by key informants interviewed during the preparation of this evidence brief, many of whom suggested there is value in leaders who have been ‘born and bred’ in the health system and in their knowledge of the nuances of a given discipline. That said, a number of key informants also offered the caveat that it could be helpful to have a small number of outsiders, and stressed that when recruiting leaders outside of the health system, stakeholders should look to those in related ‘social’ sectors such as social services, housing and education.

To ensure the most appropriate and fit-for-purpose solutions are considered, we have selected three elements of a larger, more comprehensive approach to preparing emerging leaders for expected or alternative futures. The three elements were developed and refined through consultation with the Steering Committee and the key informants we interviewed during the development of this evidence brief. The elements are:

- 1) establish a collective vision for the competencies emerging leaders need to be prepared for alternative futures;
- 2) identify and develop the training programs required to foster these competencies among emerging leaders; and
- 3) identify and develop the complementary system initiatives required to support emerging leaders in practice.

The elements could be pursued separately or simultaneously, or components could be drawn from each element to create a new (fourth) element. They are presented separately to foster deliberations about their respective components, the relative importance or priority of each, their interconnectedness and potential of or need for sequencing, and their feasibility. Each of these elements call back to the expected and alternative futures previously presented in this brief and consider how emerging leaders can be best prepared to operate within them.

Box 4: Mobilizing research evidence about elements of an approach to addressing the problem

The available research evidence about elements of a potentially comprehensive approach for addressing the problem was sought primarily from Health Systems Evidence (www.healthsystemsevidence.org), which is a continuously updated database containing more than 8,200 systematic reviews and more than 2,600 economic evaluations of delivery, financial and governance arrangements within health systems. The reviews and economic evaluations were identified by searching the database for reviews addressing features of each of the approach elements.

The authors’ conclusions were extracted from the reviews whenever possible. Some reviews contained no studies despite an exhaustive search (i.e., they were ‘empty’ reviews), while others concluded that there was substantial uncertainty about the approach element based on the identified studies. Where relevant, caveats were introduced about these authors’ conclusions based on assessments of the reviews’ quality, the local applicability of the reviews’ findings, equity considerations, and relevance to the issue. (See the appendices for a complete description of these assessments.)

Being aware of what is not known can be as important as being aware of what is known. When faced with an empty review, substantial uncertainty, or concerns about quality and local applicability or lack of attention to equity considerations, primary research could be commissioned, or an element could be pursued and a monitoring and evaluation plan designed as part of its implementation. When faced with a review 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 systematic reviews. 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 approach element.

The principal focus in this section is on what is known about these elements based on findings from systematic reviews. We present the findings from systematic reviews along with an appraisal of whether their methodological quality (using the AMSTAR tool) (9) is high (scores of 8 or higher out of a possible 11), medium (scores of 4-7) or low (scores less than 4) (see the appendix for more details about the quality-appraisal process). We also highlight whether they were conducted recently, which we define as the search being conducted within the last five years. In the next section, the focus turns to the barriers to adopting and implementing these elements, and to possible implementation strategies to address the barriers.

Element 1 – Establish a collective vision for the competencies emerging leaders need to be prepared for alternative futures

The focus of this element is to establish a collective vision for the competencies emerging leaders need to be prepared for the expecting or alternative futures outlined in this brief. This would include at least two complementary sets of efforts, which are covered by the two sub-elements listed below:

- 1) identifying the personal and professional competencies needed
 - the following professional competencies were identified through interviews with 19 key informants as being critical to leaders' success in the future (all of which are explicitly addressed in one and often all of the leadership frameworks previously described, and none of which departed fundamentally from well-established lists of leadership competencies):
 - technical knowledge about the health system, including having a systems orientation,
 - ability to collaborate and create partnerships within and outside of a single institution or sector,
 - effective change-management skills,
 - having foresight in decision-making,
 - empowering leadership at all levels,
 - focusing on quality improvement and patient outcomes;
 - the following personal competencies were also suggested by key informants (the majority of which are also emphasized heavily in the frameworks previously described in the document):
 - desire for self-improvement,
 - ability to engage in self-reflection,
 - empathy and emotional intelligence,
 - strong sense of personal accountability for actions,
 - respect for diversity (both personal and professional),
 - being tech-savvy/tech-oriented,
 - having an interdisciplinary focus; and
- 2) identifying mechanisms to bridge existing leadership with emerging leaders and leadership styles.

We identified 10 systematic reviews relevant to the two sub-elements above.(30; 32-40)

With respect to the first sub-element - identify the personal and professional competencies needed - the literature identified a wide range of both personal and professional competencies. While the included literature differentiated the use of these competencies at each of the system, organizational and unit or department level, for the purpose of this summary we have maintained the separation between personal and professional competencies, but provide additional details on the level of the health system in Table 4. Generally, the literature confirmed the competencies suggested by the 19 health system and other leaders listed above, but included the following additions:

- for professional competencies:
 - having good communication skills,
 - strong understanding of organizational functions, relationships,
 - ability to apply business skills (such as marketing, budgeting and human resource management) to organizational and clinical contexts,

- willingness to challenge existing processes, inspire a shared vision and enable others to act by modelling an alternative way forward; and
- for personal competencies:
 - willingness to invest in and develop others,
 - having good communication skills,
 - having a strategic mindset,
 - being able to successfully resolve conflicts, and
 - a tolerance for uncertainty.(30; 33; 34; 40; 41)

None of the reviews examined the effectiveness of these competencies, however, one review did find that leaders with high degrees of emotions intelligence (which was one of the key personal competencies identified by key informants) were better able to cope with stress, build resilience, and experience good health and psychological well-being. While another found that leaders who challenged processes, inspired a vision, enabled others to act and modelled the way for their staff, were associated with higher levels of productivity and organizational commitment.(41)

Though only partly relevant to the first sub-element, one recent low-quality review outlined the key efforts (which could inform an approach to identifying needed competencies) that effective leaders need to pursue when implementing eHealth systems, and these included:

- provide training to all member of the team;
- define clear roles and responsibilities for all members of the team;
- prepare prior to meetings;
- invest in socio-emotional processes;
- establish and maintain communication norms;
- implement change management strategies; and
- identify champions.(35)

While we did not find any reviews that directly addressed the second sub-element – identify mechanisms to bridge existing leadership with emerging leaders and leadership styles – four systematic reviews addressed the use of different leadership styles in the health system. One older low-quality review found that large system transformations benefit from the use of both top-down leadership styles and distributed leadership.(32) While the remaining three reviews examined clinical leadership, the following themes were identified as important and could be considered relevant in the context of system-wide leadership more generally:

- relational leadership styles (e.g., leadership related to ability of the leaders to create positive relationships within an organization) led to higher job satisfaction among team members than task-based or task-oriented leadership (e.g., where the focus is on completing necessary tasks to meet a desired goal);
- leaders who possessed the characteristics of transformational leadership were reported to be associated with higher job satisfaction, patient satisfaction, patient quality of life, unit effectiveness, and organizational culture; and
- quality of life among staff was associated with a participatory and consultative leadership style.(37-39)

Finally, one recent medium-quality review found that competing logics, role ambiguity, and a lack of time and support were all barriers to allowing leaders to exercise these and other competencies.(36)

A summary of the key findings from the synthesized research evidence is provided in Table 4. For those who want to know more about the systematic reviews contained in Table 4 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 1.

Table 4: Summary of key findings from systematic reviews relevant to Element 1 – Establish a collective vision for how emerging leaders need to be prepared for alternative futures

Category of finding	Summary of key findings
Benefits	<p>Identifying the personal and professional competencies needed</p> <ul style="list-style-type: none"> • One older low-quality review found that large system transformations requires leadership that is both top-down and distributive to effectively create change <ul style="list-style-type: none"> ○ The review further identified the following key competencies: communication; consideration and understanding of historical health-system contexts; ability to engage with a wide range of stakeholders including physicians, educational bodies, regulatory bodies, and patients. ○ In addition to leadership, the review found that measuring and reporting on the progress of an initiative is critical to achieving effective and sustainable transformation and can be done by implementing IT systems for collecting and reporting data, establishing independent oversight over measurement development and interpretation, and offering rewards and sanctions for meeting key metrics.(32) • One recent low-quality review identified three themes of competencies for leaders working within hospitals: healthcare context-related; operational; and general competence. <ul style="list-style-type: none"> ○ Within healthcare context-related competencies, the following were identified: an understanding of organizational functions, relationships, and decision-making; practice of business skills in clinical contexts; understanding of productivity; awareness of health as an industry; and understanding of financial, marketing and budgeting. ○ Within the operational competencies, the following were identified: understanding improvements in quality and services; ability to manage a ward using clinical skills; management of resource allocation; having the knowledge and skills of clinical operations issues and professional credibility; ethics; and ability to obtain and use information. ○ Within the general competencies, the following were identified: time management; interpersonal skills; strategic mindset; thinking and application skills; and human resource management.(33) • One recent medium-quality review found the following key competencies and attributions that were associated with successful medical leaders: credibility, communication, empowering others, resolving conflicts, administrative motivation, assertiveness, cooperation, and integrity. <ul style="list-style-type: none"> ○ The review found the following barriers to exercising these competencies in practice: competing logics (e.g., quality of care versus efficiency; working autonomously versus being subordinate), role ambiguity, lack of time and lack of support.(30) • One older medium-quality review found that leaders who demonstrated a high degree of emotional intelligence were better able to cope with stress, build resilience, and experience better health and psychosocial well-being, however some studies found an increase in personal distress due to emotional perceptiveness. <ul style="list-style-type: none"> ○ Competencies identified as being related to a high emotional intelligence include: developing others; teamwork; collaboration; organizational awareness; building bonds; visionary leadership; respect; and open communication. ○ Additional attributes identified that were correlated to transformational leadership styles included: empathetic concern; perspective taking and empathetic match.(34) • One recent low-quality review identified the following activities as being key to leaders' success in implementing eHealth initiatives: setting training and establishing clear roles and responsibilities for all members of the team; preparing prior to meetings; investing in socio-emotional processes; establishing and maintaining communication norms; and engaging in effective change management including building knowledge about management strategies and identifying champions.(35) • One recent medium-quality review found that the use of relational leadership was associated with higher job satisfaction among the nursing workforce than task-based leadership styles. <ul style="list-style-type: none"> ○ However, transactional leadership styles while associated with higher job satisfaction were also associated with poorer nursing outcomes including empowerment, staff health and well-being.(37) • While not competency related, one older high-quality review found that participatory, consultative, transformational and transactional leadership styles were associated with improved patient quality of life.(39) • One recent medium-quality review found that shared leadership was beneficial in clinical teams responding to high-acuity emergencies, however, given the limited number of studies more research was required. <ul style="list-style-type: none"> ○ The review further noted two different conceptions of shared leadership, one which defined shared leadership as an institutionalized practice, structured with more than one designated leader with defined leadership tasks, while another described it as intuitive working relations where spontaneous collaboration within the team leads to different leaders emerging to respond to a given situation or task.(38) • One older low-quality review found staff had a positive view of leadership from middle managers, and this approach was associated with higher job satisfaction, retention of staff, and provision of quality care. <ul style="list-style-type: none"> ○ The review also found that improving the quality of leadership and management were shown to increase staff productivity and performance, and that the following were essential leadership attributes: hands-on accessibility and professional expertise in nurturing respect; recognition and team building; effective

	communication; flexibility; openness; enthusiasm, respect and consideration; role modelling; and mentoring and supervision.(40)
Potential harms	• None identified
Costs and/or cost-effectiveness in relation to the status quo	• None identified
Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	• None identified
Key elements of the policy option if it was tried elsewhere	• None identified
Stakeholders' views and experience	• None identified

Element 2 – Identify and develop the training programs required to foster these competencies among emerging leaders

This element focuses on the ways in which existing and new training programs and initiatives can be adapted to foster the competencies described above among emerging leaders. This element also examines the continuous quality improvement initiatives that should be put in place to ensure that training programs, and the competencies they aim to foster, remain relevant as alternative futures evolve. Three potential sub-elements were identified for this element and are listed below:

- 1) adapting existing training programs and developing new programs to ensure the necessary competencies, knowledge and skills are developed in the emerging leaders who need them
 - key informants suggested the following changes to existing training programs:
 - recruiting a greater diversity of candidates (e.g., professional backgrounds and experience),
 - encouraging interactions between many types of professionals,
 - creating standardized elements in leadership curricula used in training programs,
 - using application-oriented methods for teaching such as case-based and problem-based learning,
 - focusing on building personal characteristics as well as a strong technical skill set,
 - facilitating networking for emerging leaders beyond the health system,
 - providing space for risk-taking;
- 2) establishing and continuously updating an inventory of leadership programs with explicit monitoring of core competencies being taught; and
- 3) building the capacity required to forecast emerging alternative futures and establishing feedback mechanisms to continuously update leadership programs as new needs emerge (and new competencies are required).

We identified 11 systematic reviews relevant to the three sub-elements. (28-30; 41-48)

In particular, findings from the systematic reviews related to the element more generally than the first sub-element. Specifically, we found insights from the literature about training programs more generally, insights about the content that should be included in training programs, and insights about how to deliver this content.

Two recent reviews (one high quality and one of medium quality) found leadership-training programs resulted in increases in leadership behaviours and had a positive impact on patient outcomes.(41) However, the reviews also emphasized the need for these programs to provide opportunities for those being trained to practise and model their new skills (a point returned to in element 3).(41) Similarly, one older medium-quality

review found that a quality-improvement course, which included a module on leadership, resulted in improved knowledge, but did not find benefits in achieving patient outcomes.(42) However, two older medium-quality reviews and one recent medium-quality review identified a lack of systematically identifying candidates for leadership training, lack of relief covered, obtaining paid or unpaid study leave, and expectation to use personal time to fulfil training requirements as barriers to participating in leadership training.(28-30) However, one recent protocol for a systematic review identified eLearning as a potential strategy to overcome some of these barriers.(48)

In considering the content of these training programs, one older medium-quality review found that leadership training should include:

- a focus on clinical, interpersonal and management skills;
- specific leadership competencies for each role at each level in an organization;
- leadership enhancement that is tailored to the needs of those in different positions;
- opportunities for ongoing mentorship; and
- plans for systematically evaluating the effectiveness and outcomes.(45)

With regards how this content should be delivered, one recent high-quality review and one older high-quality review identified Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS), Crew Resource Management, and High Reliability Teams as frameworks to use to teach leadership skills.(43) One of the reviews and another older high-quality review further found that the most effective pedagogies involved simulations and facilitated debriefing strategies.(44) Similarly, one older medium-quality review identified the following best practices for simulation-based training:

- ensuring a range of difficulty;
- supporting repetitive practice;
- supporting distributed practice;
- integrating cognitive interactivity;
- employing multiple learning strategies;
- including individualized approaches to learning and feedback; and
- ensuring clinical variation is represented.(47)

We did not find any reviews that addressed sub-element 2 (establish and continuously update an inventory of leadership programs with explicit monitoring of core competencies being taught) or sub-element 3 (build the capacity required to forecast emerging alternative futures and establish feedback mechanisms to continuously update leadership programs as new needs emerge and new competencies are required).

A summary of the key findings from the synthesized research evidence is provided in Table 5. For those who want to know more about the systematic reviews contained in Table 5 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 2.

Table 5: Summary of key findings from systematic reviews relevant to Element 2 – Identify and develop the training programs required to foster these competencies among emerging leaders

Category of finding	Summary of key findings
Benefits	<ul style="list-style-type: none"> • One recent medium-quality review found that leadership development programs resulted in significant increases in leadership behaviours post-intervention, and that the financial resources invested in training programs for leadership competency development are well placed, however leaders require opportunities to practise and model these skills in order for them to be routinely used.(41) • One older medium-quality review found a wide range of training programs for teaching quality improvement (which included an emphasis on leading, following and making change as well as developing new, locally useful knowledge), and all of the studies included reported either beneficial or null effects with most reporting improved knowledge but rarely found benefits in patient outcomes.(42) • One recent protocol posits that eLearning could be an adaptable and accessible training approach for expanding training and management programs to a wider audience.(48) • One recent high-quality review found that leadership-training programs had a positive impact on patient outcome and reducing overall clinical error rate. <ul style="list-style-type: none"> ◦ The review reported that included studies used a range of approaches to teaching leadership skills including a general two-and-a-half-day team-based workshop, TeamSTEPPS leadership training which is a simulation-based training program, and Crew Resource Management training.(43) • One older high-quality review examined the use of Crew Resource Management and simulation or role-play training for non-technical skills and found key attributes for training programs included: the importance of debriefing and feedback; the impact of fidelity of simulation; the use of simulation as a method to introduce error without harming patients; and the importance of expertise among educators.(46) • One recent medium-quality review found that building teamwork skills among nurses incorporated knowledge content derived from the High Reliability Teams framework and TeamSTEPPS framework, including learning key skills such as situational awareness, adaptability, leadership, followship, and communication. <ul style="list-style-type: none"> ◦ The review found that the pedagogies most effective at building teamwork competencies involved simulation and facilitated debriefing strategies.(44)
Potential harms	<ul style="list-style-type: none"> • None identified
Costs and/or cost-effectiveness in relation to the status quo	<ul style="list-style-type: none"> • None identified
Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	<ul style="list-style-type: none"> • One older medium-quality review found relatively little evidence to support the development of leadership skills among nurses working in long-term care, however if leadership training among these professionals is to be pursued the review recommended that leadership training include content on: clinical, interpersonal, managerial and organizational skills; specific leadership competencies for nurses at each level in the organization; leadership enhancement that is tailored to the needs of those in different positions; a training component that is paired with ongoing mentorship; and plans for systematically evaluating the effectiveness and outcomes.(45)
Key elements of the policy option if it was tried elsewhere	<ul style="list-style-type: none"> • One older high-quality review found the following best practices for simulation-based training: ensuring a range of difficulty; supporting repetitive practice; supporting distributed practice; integrating cognitive interactivity; employing multiple learning strategies; including individualized approaches to learning and feedback; and ensuring clinical variation is represented.(47)
Stakeholders' views and experience	<ul style="list-style-type: none"> • One older medium-quality review reported that a lack of structured programming focused on clinical leadership and health team management remained a barrier for registered nurses to emerge as clinical leaders.

	<ul style="list-style-type: none"> ○ Further, the review found that nurses reported a lack of efforts to identify candidates for leadership training and suggested the use of a skills audit as a means to identify candidates for specialized training.(29) ● One recent medium-quality review found that nurses are reluctant or prevented from transitioning out of clinical settings to engage in continuing competency development (including leadership training). <ul style="list-style-type: none"> ○ The review identified a number of common barriers including: a lack of relief coverage; an inadequate supply of nurses; challenges obtaining paid or unpaid study leave; and expectation to use personal time to fulfil training requirements(28) ● One older medium-quality review found that while medical students were prepared to take on leadership positions, they often reported being reluctant to be followers or lead management issues, reflecting the peripheral focus on leadership and management training within the existing medical education. The review also found that: <ul style="list-style-type: none"> ○ education interventions teaching management and leadership skills had variable effects on attitudes of students; and ○ while students perceived a need for leadership and management training, they identified a lack of curriculum time as a key barrier to its routine implementation.(30)
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Element 3 – Identify and develop the complementary system initiatives required to support emerging leaders in practice

This element focuses on establishing the complementary system initiatives required to support emerging leaders in practice. In particular, it considers how the health system can act in parallel to formal training initiatives to ensure that those individuals who pursue leadership development have the opportunity to exercise new competencies and capabilities. An additional part of this element is to consider ways in which the health system can also cultivate emerging leaders that choose (or are unable) to undertake formal leadership development training. Finally, it considers the continuous quality-improvement initiatives central to creating better alignment between health-system arrangements and the identification, development, and cultivation of leaders. Four potential sub-elements of this element are listed below:

- 1) establishing health-system initiatives that work in parallel with the academic setting, including providing:
 - opportunities for experiential learning through co-ops, community-based projects and shadowing,
 - mentorship programs,
 - professional coaching programs,
 - job swaps, exchanges and secondments;
- 2) promoting organizational cultures in which leadership development initiatives are valued and supported from existing leadership; and
- 3) establishing mechanisms to continuously monitor health-system leadership capacity and plan for the development of emerging leaders.

We identified five systematic reviews that relate to the five sub-elements.(29; 40; 49-51)

With regards to sub-element 1 – establishing health-system initiatives that work in parallel with the academic setting – we found two recent medium-quality reviews that address health-system initiatives to work in parallel with the training programs in academic setting.(49) One of the recent medium-quality reviews examined providing research opportunities for allied health professionals and found they increased individual research skills and participation, increased research activities, improved research culture and attitudes among those participating, and enhanced research capacity.(49) The other review found that while mentoring models look different in every setting, key components include:

- having a program coordinator;
- orientation to the programs;
- selectively matching mentees and mentors;
- developing a clear purpose and goals;

- frequent communication between mentors and mentees;
- faculty development workshops;
- mentee reflective journaling;
- facilitation of socialization and networking opportunities; and
- administrative supports.(50)

One older low-quality review and one older medium-quality review related to sub-element 2 (promoting organizational cultures in which leadership-development initiatives are valued and supported by existing leadership), found the following organization changes can help to support leadership in health systems:

- an adequate skill mix of staff;
- clear human resource practices and administrative support;
- free flow of information and communication policies;
- attractive incentives to take on leadership positions;
- more explicit career structure and progression; and
- options for promotion that could lead to improvement in recruitment and retention.(29; 40)

We found one older low-quality review that related to sub-element 4 (establishing mechanisms to continuously monitor health-system leadership capacity and plan for emerging leaders). Specifically, the review found succession planning is critical to avoiding knowledge loss within an organization, and while it did not identify best practices in succession planning the review suggested the following key components are essential to support monitoring and planning for changes in leadership:

- strategic planning;
- identifying desired skills and needs for succession candidates;
- finding and mentoring succession candidates;
- resource allocation towards leadership development;
- aligning learning and development needs of succession candidates with organizational growth requirements; and
- ongoing evaluation of succession planning processes.(51)

A summary of the key findings from the synthesized research evidence is provided in Table 6. For those who want to know more about the systematic reviews contained in Table 6 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 3.

Table 6: Summary of key findings from systematic reviews relevant to Element 3 – Identify and develop the complementary system initiatives required to support emerging leaders in practice

Category of finding	Summary of key findings
Benefits	<ul style="list-style-type: none"> • One recent medium-quality review identified that providing allied health professionals with research positions increased individual research skills and participation, increased research activities, improved research culture and attitudes among those participating, increased team and organizational level skills, and that research capacity was improved at a service and an organizational level.(49) • One older low-quality review found that the following organizational changes can help to support leadership in health systems: an adequate skill mix of staff; clear HR practices and administrative support; free flow of information and communication policies; and attractive incentives.(40)
Potential harms	<ul style="list-style-type: none"> • None identified
Costs and/or cost-effectiveness in relation to the status quo	<ul style="list-style-type: none"> • None identified
Uncertainty regarding benefits and potential harms	<ul style="list-style-type: none"> • One older low-quality review found succession planning is critical to avoid knowledge loss within an organization, however the review did not identify best practices in succession planning.

(so monitoring and evaluation could be warranted if the option were pursued)	<ul style="list-style-type: none"> ○ The review identified key components of succession planning, including: strategic planning; identifying the desired skills and needs for succession candidates; finding and mentoring succession candidates; resource allocation toward leadership development; aligning learning and development needs of succession candidates with organizational growth requirements; and evaluation.(51)
Key elements of the policy option if it was tried elsewhere	<ul style="list-style-type: none"> ● One recent medium-quality review found that mentoring models look different in every setting and should be tailored to the specific context in which they are being implemented. <ul style="list-style-type: none"> ○ The review found key mentoring components included: having a program coordinator, orientation to the program, selectively matching dyads; developing a clear purpose and goals; frequent communication between mentors and mentees; faculty development workshops; mentee reflective journaling; facilitation of socialization and networking opportunities; and administrative supports.(50)
Stakeholders' views and experience	<ul style="list-style-type: none"> ● One older medium-quality review suggested the implementation of professional identity and supports as well as increased career structure and options for promotion that could lead to improved recruitment and retention, as health-system changes that could support the emergence of registered nurses as clinical leaders alongside skills training.(29)

Additional equity-related observations about the three approach elements

No additional reviews were found that addressed equity-related observations about the three approach elements apart from those identifying barriers that were included in the section on equity-related observations about the problem. However, recommendations following a U.S. survey of diversity in health suggested the following six actions to create a more inclusive talent pool of future leaders, these include:

- define the talent gap in the system or organization;
- conduct an annual talent review to assess depth for future leadership success;
- provide a diverse array of mentors;
- give future leaders a voice;
- create avenues of interaction with future leaders; and
- focus on positives of careers in health.

It is possible to see how these actions could be applied to each of the three previous elements including, through:

- inclusion of respect and prioritization of diversity as a personal competency of emerging leaders (element 1);
- explicit recruitment of emerging leaders with diverse ethnic, linguistic and professional backgrounds (element 2);
- flexible models of delivering leadership-development programs (element 2);
- providing time and resources to allow a wider range of individuals to participate in leadership-development programs (element 2); and
- creating a culture within the health system that prioritizes different perspectives and experiences (element 3).(52)

Some examples of these initiatives are already ongoing such as the Canadian College of Health Leaders 'Empowering Women Leaders in Health' program, which aims to achieve transformative change through the increased participation, visibility and advancement of women in leadership positions.(53)

IMPLEMENTATION CONSIDERATIONS

A number of barriers might hinder implementation of the three elements of a potentially comprehensive approach to preparing emerging leaders for expected or alternative futures in health systems across Canada (Table 7). While potential barriers exist at the levels of providers, organizations and systems (if not patients/citizens, who are unlikely to be aware of or particularly interested in the specifics of these approach elements), perhaps the biggest barrier lies in making a case that leadership development needs to be fundamentally different to successfully navigate the expected or alternative futures. Further, another significant barrier lies in the coordination required between organizations and stakeholders currently involved in training programs and with current health-system leaders who will be responsible for ensuring a culture and context that is receptive to new leadership.

Table 7: Potential barriers to implementing the options

Levels	Element 1 – Establish a collective vision for how emerging leaders need to be prepared for alternative futures	Element 2 – Identify and develop the training programs required to foster these competencies among emerging leaders	Element 3 – Identify and develop the complementary system initiatives required to support emerging leaders in practice
Patient/individual	<ul style="list-style-type: none"> Patients/citizens are unlikely to be aware of such action 	<ul style="list-style-type: none"> Patients/citizens are unlikely to be aware of such action 	<ul style="list-style-type: none"> Patients/citizens are unlikely to be aware of such action
Care provider	<ul style="list-style-type: none"> Providers may not agree with collective vision for leadership or with common competencies expected of them (particularly if they view themselves as emerging leaders) 	<ul style="list-style-type: none"> Providers may argue that participating in these initiatives come at the expense of front-line care Select providers may be unable to participate in training programs due to financial or time constraints 	<ul style="list-style-type: none"> Providers may argue that participating in these initiatives come at the expense of front-line care
Organization	<ul style="list-style-type: none"> Training organizations may resist efforts to: <ul style="list-style-type: none"> establish common core competencies; coordinate with other organizations viewed as competitors, or fundamentally change their curricula to align with a new vision for leadership 	<ul style="list-style-type: none"> Organizations that develop and provide health-leadership training may not be willing to share insights about their programs and the core competencies taught 	<ul style="list-style-type: none"> Organizations may resist investments (of both time and financial resources) needed to ensure initiatives are appropriately supported
System	<ul style="list-style-type: none"> Provincial health ministers and other senior leaders may have competing views about and may not 'buy into' the collective vision Aligning governance, financial, and delivery arrangements to support a common vision across the many diverse health systems in Canada may not be feasible 	<ul style="list-style-type: none"> Provincial health ministers and other senior leaders may not be prepared to invest resources in adapting training programs, monitoring the outputs of training programs, or forecasting alternative futures Ensuring the appropriate decision-making authority is delegated to a broader range of key players involved in the development and implementation of education and training, and that the appropriate changes to financial flows are made to support a more diverse range of involved stakeholders, is likely a challenge in each health system in Canada 	<ul style="list-style-type: none"> Existing senior leaders may be unable to shift the health-system culture to be receptive to new leadership styles and emerging leaders

On the other hand, a number of potential windows of opportunity may facilitate the approach elements (Table 8), which also needs to be factored into any decision about whether and how to pursue any given

element. These potential windows of opportunity could include the increasing demand for strong leadership and governance capacity from media and from the public more generally, as well as the recent international focus on sustainability of health systems and preparing them for future challenges (which provides an optimal ‘way in’ to discussing how to prepare emerging leaders to address these challenges).

Table 8: Potential windows of opportunity for implementing the elements

Type	Element 1 – Establish a collective vision for how emerging leaders need to be prepared for alternative futures	Element 2 – Identify and develop the training programs required to foster these competencies among emerging leaders	Element 3 – Identify and develop the complementary system initiatives required to support emerging leaders in practice
General	<ul style="list-style-type: none"> Increasing demand for strong leadership and governance capacity from media and from the public National focus on re-conceptualizing the roles of pan-Canadian health organizations Increasing national and international focus on supporting rapid-learning health systems International focus on sustainability of health systems lends itself to considering what future systems will (or should) look like and questions about who will lead the system 		
Element-specific	<ul style="list-style-type: none"> Increased professionalization of health-leadership training may support the development of a consistent set of competencies 	<ul style="list-style-type: none"> Increased development of health leadership and management programs can be leveraged and adapted to prepare leaders for possible futures 	<ul style="list-style-type: none"> None identified

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APPENDICES

The following tables provide detailed information about the systematic reviews identified for each option. Each row in a table corresponds to a particular systematic review and the reviews are organized by element (first column). The focus of the review is described in the second column. Key findings from the review that relate to the option are listed in the third column, while the fourth column records the last year the literature was searched as part of the review.

The fifth 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 systematic reviews 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.

The last three columns convey information about the utility of the review in terms of local applicability, applicability concerning prioritized groups, and issue applicability. The third-from-last column notes the proportion of studies that were conducted in Canada, while the second-from-last column shows the proportion of studies included in the review that deal explicitly with one of the prioritized groups. The last column indicates the review’s issue applicability in terms of the proportion of studies focused on leadership.

All of the information provided in the appendix tables was taken into account by the evidence brief’s authors in compiling Tables 4-6 in the main text of the brief.

Appendix 1: Systematic reviews relevant to Element 1 - Establish a collective vision for how emerging leaders need to be prepared for alternative futures

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
Enabling large-scale transformations at the macro level (32)	<p>This systematic realist review and evidence synthesis drew from both the published literature and current practice regarding large systems transformation generally. The authors identified a lack of literature on large system transformation at the macro level, but were able to identify five evidence-based themes which were validated and modified during two rounds of merit review with international experts.</p> <p>The review found that large system transformation in healthcare systems requires both top-down leadership that is passionately committed to change, as well as distributed leadership and engagement of personnel at all levels of the system. Recommendations for action in this area include facilitating communication and visibility of the transformation efforts by working with those who have a history of leadership in the area, providing a central coordinating body for the change initiative that is isolated from political influence and change, and clearly articulating the goals of the change.</p> <p>The review found that measurement and reporting on progress toward short- and long-term goals is critical for achieving effective and sustainable large system transformations. Recommendations for action in this area include providing resources including IT systems for collecting and reporting on measures, establishing independent oversight of measurement development, reporting and interpretation, and offering equitably distributed rewards and sanctions for the measures.</p> <p>The review found that consideration and acknowledgment of historical context will help avoid unnecessary pitfalls and increase buy-in and support from stakeholders. Recommendations for action in this area include carefully assessing organizational readiness for transformation, and storing and reporting information about past change efforts, especially efforts that were unsuccessful.</p> <p>The review found that large system transformation in healthcare systems relies on significant physician engagement in the change process. Recommendations for action in this area include working with educational institutions and regulatory bodies to modify initial and continuing training curricula to provide skills and roles that are consistent with transformational efforts, engaging physicians and other health professionals in policy development, and providing funding, regulations and incentives for physician engagement.</p> <p>The review found that large system transformation that aims to increase patient-centredness requires significant engagement of patients and families in the change process. Recommendations for action in this area include setting up independent governance and</p>	Not reported	3/9 (AMSTAR rating from McMaster Health Forum)	Not reported	Not reported	Not reported

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Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	advisory mechanisms for healthcare institutions and bodies at the provincial, regional and local levels, ensuring the right players are involved in the change process through adequate funding and compensation, and collecting information on patients' wishes through robust surveys or other data-collection methods, while being careful to ensure that patient engagement is not reduced to patient satisfaction surveys alone.					
Examining management and leadership competence in the hospital setting (33)	<p>A review of 13 papers examined the characteristics of management and leadership competence of healthcare leaders (nursing and physician managers) in the hospital setting. Competence was defined as the knowledge, skills, attitudes and abilities that enable management and leadership tasks, and was assessed as such. The characteristics of management and leadership competence were categorized into three main groups: 1) healthcare context-related; 2) operational; and 3) general.</p> <p>Healthcare context-related competence: The category was further split into four sub-groups: social (understanding of laws and roles of political, social and legislative systems), organizational (understanding of organizational functions, relationships, decision-making), business (practice of business skills in clinical and cultural contexts, understanding of productivity, awareness of healthcare as a business or industry), and financial competence (understanding of financials, marketing and budgeting).</p> <p>Operational competence: The category was further split into four sub-groups: process (e.g., understanding improvements in quality/service), operation (e.g., ability to manage a ward using clinical skills, management of resource allocation), clinical (e.g., having the knowledge and skills of clinical operation issues and professional credibility, ethics), and development competence (e.g., ability to obtain and use information, staff development).</p> <p>General competence: This category was common among all healthcare professionals. It was split into five sub-groups: time management, interpersonal skills, strategic mindset, thinking and application skills, and human resource management.</p> <p>While there are similarities in the required characteristics of competence in physician managers and leaders, the majority of the papers described diverse characteristics of the required competence in nurse managers and leaders. Despite the trends that emerged, more research is recommended in order to develop a unified perspective.</p>	2013	3/9 (AMSTAR rating from McMaster Health Forum)	1/13	0/13	13/13
Examining the role of the research position in allied health professional (AHP) healthcare settings and the impact on building research capacity (49)	<p>A review of eight studies were included in a thematic analysis examining either the role of the research position within healthcare settings in allied health or the impact of the position.</p> <p>The allied health research position holds many roles, which were summarized into three main themes. The health research position provided academic support to individuals and their teams, developed their own research, and supported service and organizational levels, including strategy development, providing leadership, and developing research culture.</p>	2015	7/10 (AMSTAR rating from McMaster Health Forum)	0/8	0/8	0/8

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	<p>Four specific themes regarding impacts were identified: 1) increased individual research skills and participation; 2) increased research activity; 3) improved research culture and attitudes (e.g., confidence); and 4) increased team and organizational-level skills.</p> <p>The majority of the studies reported findings that research positions provided academic support to individual clinicians as well as their teams during their own research projects. It was also reported that research capacity was improved at a service and an organizational level.</p>					
Examining shared leadership in healthcare action teams (38)	<p>A review of 33 articles examined shared leadership models in healthcare action teams (HCATs). While these are normally defined as any interdisciplinary team that works under time-pressured conditions to accomplish critical patient care tasks, the review will use the term exclusively for teams responding to high-acuity emergencies.</p> <p>Twelve articles defined shared leadership as an institutionalized practice, structured with more than one designated leadership position with defined leadership tasks. Other studies described shared leadership as intuitive working relations, with a purpose to teach rather than distribute workload. The main distinction between the two was defined by a permanent widespread understanding of roles. Seventeen articles reported spontaneous collaboration in which leadership emerges in a leaderless team or when the designated leader was deemed ineffective.</p> <p>The included studies found that spontaneous sharing of leadership was positively associated with clinical performance. A study on cardiac arrest teams found that following the restructure of leadership to a physician-nurse leadership dyad, improved feelings of team-leader support and less crowding was reported despite no significant changes in noise level, communication, etc.</p> <p>Similarly, studies in trauma teams identified that shared leadership was associated with improvements in documentation and length of stay. However, while most studies suggest benefits of leadership sharing, there was little high-quality evidence and thus further research is needed.</p>	2017	5/9 (AMSTAR rating from McMaster Health Forum)	2/33	0/33	33/33
Examining the experiences of registered nurses as clinical leaders and managers (29)	<p>A review of eight qualitative papers examined the leadership and management experiences of registered nurses in residential aged-care facilities.</p> <p>The review determined an overall negative theme regarding the experiences of nurses working in residential aged care. Despite a strong motivation of nurses to provide the best outcomes for the elderly, nurses often experienced a lack of professional support and collaboration from allied health and medical colleagues. In addition, there remains a lack of structured programming focused on clinical leadership and health-team management. As a result, nurses often reported paradoxical feelings of being valued by clients and devalued by the system. The review identified organizational barriers to be a leading obstacle to continuing education and</p>	2011	6/9 (AMSTAR rating from McMaster Health Forum)	0/8	8/8	8/8

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	<p>skills development for nurses, suggesting the implementation of a skills audit as a way to identify candidates for specialized courses in clinical leadership and governance.</p> <p>To decrease the negative experiences of nurses in the residential aged-care field, professional identity and support in addition to clinical leadership training were identified to be useful, especially in the transition to specialized roles (e.g., team leader, Geriatric Nurse Practitioner). This transition is aided by an increased career structure and options for promotion, which can lead to improved recruitment and retention. The perception and value of registered nurses as clinical leaders were also critical.</p>					
Examining programs designed to enhance nursing leadership in long-term care, the outcomes associated with leadership in long-term care, and to outline recommendations for programs to enhance nursing leadership in nursing-home settings (45)	<p>Researchers found little evidence to support the general consensus that leadership skills are important for nursing-home nurses. Although some leadership-enhancement programs appear promising (e.g., Learn, Empower, Achieve, and Produce), there is insufficient strong evaluative data to adopt any particular program. As a result, researchers recommend that quality-improvement initiatives in nursing homes should include provision for leadership enhancement, specifically including: 1) content on interpersonal skills, clinical skills, organizational skills and management skills; 2) specific leadership competencies for nurses at each level in the organization; 3) leadership enhancement that is tailored to the needs of those in different positions; 4) an educational component as well as ongoing mentorship; and 5) plans for systematically evaluating the effectiveness and outcomes.</p>	2007	4/9 (AMSTAR rating from the McMaster Health Forum)	0/15	0/15	15/15
Examining the impact of healthcare organizations' supply of nurses and nursing workload (28)	<p>A review of 11 studies examined the impact of healthcare organisations' supply of nurses and nursing workload on the continuing professional development opportunities of Registered Nurses in the acute-care hospital.</p> <p>The review found that nurses are reluctant or prevented from transitioning out of clinical settings to engage in continuing professional development. Some common reasons or barriers include the lack of relief cover, inadequate supply of nurses, obtaining paid or unpaid study leave, and expectation to use personal time to fulfil education requirements. These cultural, leadership and workload issues have a negative impact on the ability of nurses to pursue continuing professional development.</p> <p>As a result, it affects the competence to practise, provision of safe and high-quality patient care, maintenance of professional registration, job satisfaction, and recruitment and retention. The review suggests that organizations should invest time and resources in nurses' participation in continuing professional development opportunities.</p>	2015	7/9 (AMSTAR rating from McMaster Health Forum)	1/11	0/11	0/11
Examining the factors that contribute to nursing leadership and	<p>Studies that examined the influence of a leadership-development program reported significant increases in leadership behaviours post-intervention. However, the authors noted that the positive results should be viewed with cautious optimism. Researchers pointed to the</p>	2006	4/9 (AMSTAR rating)	2/24	0/24	0/24

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
the effectiveness of educational interventions in developing leadership behaviours among nurses (41)	importance of modelling in a leader's role. As leaders learn new skills, they should demonstrate, model and use these skills in the practice setting. Furthermore, there is evidence that the financial resources invested in educational programs for leadership competencies development are well placed. There is evidence that nursing leaders with higher levels of education and experience lead to increased leadership effectiveness. These results suggest the length of time in a leadership role and practices can promote leadership competency. Contact between leaders and followers is an important step to provide opportunities for both parties to use and develop their leadership skills.		from the McMaster Health Forum)			
Examining the linkage of emotional intelligence to nurse leadership and professional development (34)	<p>A review of 18 articles evaluated the theoretical and empirical basis of emotional intelligence on nurse leadership, well-being and professional development. Emotional intelligence is defined as having a set of core competencies that can serve to identify, process and manage emotions to cope with daily demands. As an emerging leadership style, emotional intelligence nurse leadership emphasizes personal reflections, well-being, strong relationships, the pursuit of common goals, and cooperation.</p> <p>Several correlations between emotional intelligence and nurse leadership were found to exist. Those with high emotional intelligence were more able to cope with stress, build resilience and experience better health and psychological well-being. It is suggested that leaders with such characteristics infuse energy and enthusiasm in the workplace, resulting in higher levels of self-efficacy and an overall functioning of the workplace.</p> <p>Specifically, eight emotional intelligence competencies were identified to affect the climate of the organization, including developing others, teamwork, collaboration, organizational awareness, building bonds, visionary leadership, respect and open communication. Empathetic concern, perspective taking, and empathic match also demonstrated significant correlations with transformational leadership. Those exhibiting such positive characteristics had outcomes of intellectual stimulation, individualized consideration, inspirational motivation and identification with their leaders. Empathy was found to be a predictive factor in potential future leaders.</p> <p>It is suggested that emotional intelligence also had an impact on physical and mental well-being. Findings showed a reduction in reporting of emotional exhaustion and psychosomatic symptoms. However, some studies contrarily found an increase in personal distress due to emotional perceptiveness. Additionally, emotional intelligence affected the job performance and satisfaction of followers, while it affected the job satisfaction and extra role behaviour of leaders.</p> <p>Emotional intelligence was stronger in individuals possessing higher levels of self-awareness. With the ability to reflect, these individuals were more likely to demonstrate personal efficacy, interpersonal control and social self-confidence. Findings also indicated that the most</p>	2007	6/9 (AMSTAR rating from McMaster Health Forum)	1/18	0/18	18/18

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Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	effective leaders were commonly characterized by four responsive leadership styles (visionary, coaching, affiliative and democratic).					
Examining the role of physicians in eHealth (35)	<p>A review of 44 articles examined the role of physicians in virtual teams (VTs), “physician e-leadership” (physician’s role as a formal team member) and implementation of eHealth.</p> <p>Using existing theoretical models on virtual team research, six domains for “physician e-leadership” were found: 1) resources; 2) task processes; 3) socio-emotional processes; 4) leadership in virtual teams; 5) virtual physician-patient relationship; and 6) change management.</p> <p>Resources: Training for all members of the interdisciplinary virtual team was identified as an important resource. Roles and responsibilities and the use of standardized work processes/procedures should be clearly outlined.</p> <p>Task processes: Clear roles and responsibilities should be defined, in addition to the synchronization of work routines. The importance of optimal preparation prior to meetings is emphasized.</p> <p>Socio-emotional processes: As working relationships in virtual teams lack non-verbal clues and contact frequencies in comparison to conventional teams, it is important to invest in regular face-to-face meetings, facilitate team trust and build relationships.</p> <p>Physician virtual team leadership: None of the studies described a specific set of leadership roles, however, common themes of knowledge, skills and attributes include establishing and maintaining communication and team norms.</p> <p>Virtual physician-patient relationship: Studies identified several issues and concerns, including an overload in information sharing, delays in coordination, and ensuring quality of care.</p> <p>Change management: There is a significant relationship between successful virtual team establishment and effective change management. Physician e-leadership is necessary and is comprised of being knowledgeable about management strategies and physician champion.</p> <p>Currently, there is a lack of studies on physician e-leadership as no study focused solely on physician e-leadership in virtual healthcare work was identified. As a result, the current generation of physicians may be ill-equipped for a leadership role in virtual teams.</p>	2016	3/9 (AMSTAR rating from McMaster Health Forum)	3/44	0/44	0/44
Examining leadership styles and outcome patterns for the	A review of 129 studies examined the relationships between various styles of leadership and outcomes for the nursing workforce and their work environments.	2017	6/9 (AMSTAR rating from	29/129	129/129	129/129

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
nursing workforce and work environment (41)	<p>The review identified several patterns between relational (transformational or authentic) and task-focused (passive or dissonant) leadership styles and their outcomes for nurses and the work environments. Six themes emerged: 1) staff satisfaction with job factors; 2) staff relationships with work; 3) staff health and well-being; 4) relations among staff; 5) organizational environment factors; and 6) productivity and effectiveness. Similar trends were seen in all categories. For example, while relational leadership styles were associated with higher nurse job satisfaction, task-focused leadership styles were associated with lower satisfaction.</p> <p>One particular type of leadership, known as transactional, was the only one to be linked to improvements in job satisfaction while also being associated with poorer nursing outcomes (e.g., empowerment, staff health, well-being).</p> <p>The review suggests that task-focused leadership is insufficient to achieve optimum outcomes. The use of relational leadership requires the support of both individuals and organizations.</p>		McMaster Health Forum)			

Appendix 2: Systematic reviews relevant to Element 2 - Identify and develop the education programs required to foster these competencies among emerging leaders

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
Examining the use of eLearning for health leadership and management: a protocol for a systematic review (48)	<p>The review seeks to examine the effectiveness of eLearning (i.e. use of digital technology in education) for health leadership and management capacity building. The primary outcomes of interest are health outcomes, financial risk protection and user satisfaction. The secondary outcomes of interest include the attainment of health-system objectives of improved equity, efficiency, effectiveness and responsiveness.</p> <p>There is often overlap between leadership and management. Leadership can be defined as inspiring, motivating and bringing together stakeholders to achieve a shared vision, while management is defined as focusing on administrative processes (e.g., planning, budgeting, staffing, problem solving). Clinicians often assume both roles despite an absence in training.</p> <p>Effective health leadership and management can improve health outcomes and a provision for cost-effective and equitable healthcare, yet there is often a shortage of formal training. eLearning could be an adaptable and accessible training approach for expanding training in leadership and management.</p>	2017	n/a	Not reported	n/a	n/a
Examining the effects of changes in the pre-licensure education of health workers on health-worker supply (54)	<p>This review included two studies that assessed the effect of changes in the pre-licensure education of health professionals on health-worker supply.</p> <p>The two studies reported that an intervention comprising of a package of student support activities including social, academic, and career guidance and mentorship, resulted in an increase in the number of minority students who enrolled and graduated from health-training institutions.</p> <p>The authors report an urgent need for more studies to evaluate strategies to increase the numbers of students enrolling in and graduating from health professional schools in low- and middle-income countries.</p>	2007	10/10 (AMSTAR rating from McMaster Health Forum)	0/2	0/2	0/2
Examining the effect of multi-professional teamwork and leadership training on the optimization of patient outcomes in acute-care hospital settings (43)	<p>This review included 12 studies examining the effect of multi-professional teamwork and leadership training on the optimization of patient outcomes in acute hospital settings.</p> <p>Authors reported difficulty in determining a standard time frame for a leadership-training program due to the heterogeneity of results. Three studies reported programs lasting two-to-three days while nine studies reported programs lasting between 30 minutes and eight hours. The duration of the series of interventions ranged from one month to three years, with programs occurring on a weekly or monthly basis.</p> <p>Three of the included studies employed protocol/evidence-based interventions involving simulation-based leadership training. Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) was applied as the intervention in two studies. In TeamSTEPPS, simulation-based leadership training was used to address the duties of the team leader (i.e., to anticipate potential</p>	2014	8/10 (AMSTAR rating from McMaster Health Forum)	0/12	0/12	6/12

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	<p>problems/actions and instruct team members on what to do and call out for information when needed). Crew Resource Management (CRM) was used as an intervention in one study. Finally, general leadership as an intervention was used in one study involving a 2.5-day team training workshop.</p> <p>The protocol/evidence-based intervention was shown to have mixed results for impacts on patient outcomes. The general teamwork and leadership intervention had a positive impact on patient outcomes, reducing overall clinical error rate. Finally, TeamSTEPPS leadership training interventions showed a significant reduction in time variables on patient outcomes.</p> <p>Although the majority of studies included in this review were of relatively low quality, the evidence suggests that training-program interventions provide healthcare personnel with the opportunity to practise leadership skills that can have an impact on patient safety, safety culture and patient outcomes. Building a safety culture adjacent to implementing teamwork and leadership training interventions is essential for improving patient outcomes.</p>					
Examining non-technical skills training to enhance patient safety (46)	<p>This review included 22 studies examining the efficacy of non-technical skills training in enhancing patient safety.</p> <p>There was significant methodological heterogeneity among studies. Six studies described a direct alignment with the principles of CRM. Among the included studies, the main teaching methods were simulation or role-play, and the key attributes discussed were the importance of debriefing, feedback, the impact of 'fidelity' of simulation, and the use of simulation as a method to introduce error without harming patients. The importance of expertise amongst educators was cited, although this expertise was often clinical or human factors-based, rather than derived from skills in education.</p> <p>Several key themes emerged from the content of the educational interventions. The first theme of communication referred to the importance of bringing debriefing skills into the workplace and ensuring effective communication with patients when errors occur. The second theme referred to error and represented the core of most teaching programs, which included content to improve error awareness. The third theme referred to the role of systems, both as a method of error reduction and as a source of error, often focusing on the human-machine interface. The fourth theme referred to teamworking and leadership, particularly in terms of decision-making as a team and clarity of roles. The final theme was situational awareness and the use of this awareness to identify potential risks and take action to prevent error.</p> <p>This review found a body of research that can support and direct the design and use of non-technical skills education to improve patient safety. The studies were generally judged to be of reasonable methodological quality.</p>	2011	9/10 (AMSTAR rating from McMaster Health Forum)	0/22	0/22	0/22
Examining teamwork education	<p>This review included 19 studies examining teamwork education interventions in nursing.</p>	2014	6/9 (AMSTAR rating)	0/19	0/19	0/19

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Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
interventions in nursing (44)	<p>High Reliability Teams (HRT) framework, which substantiates TeamSTEPPS curricula, informed several sampled interventions in this review. The HRT framework is considered foundational knowledge for nursing teamwork competency; however, studies highlighted HRT knowledge gaps in nurses and poor translation of leadership, situational awareness, and skilled communication competencies into nursing practice.</p> <p>Along with HRT, the review suggested that Crew Resource Management (CRM) informs the knowledge base of nursing team training in terms of collective cognition, error mitigation, standardized operating processes (e.g., communication tools), and interpersonal skills. Similar to the HRT framework, core CRM knowledge includes situational awareness, adaptability, leadership-followership, and communication. In addition, CRM also considers how contextual factors such as mutual respect, hierarchy, and conflict influence team processes such as decision-making, communication and performance.</p> <p>The results of the review suggest that a majority of nursing teamwork education initiatives incorporate knowledge content derived from HRT and CRM frameworks; however, findings identified knowledge gaps and discomfort among nurses when applying certain HRT/CRM communication and leadership components in practise.</p> <p>Overall, it was found that the pedagogies most effective at building teamwork competency in nurses involved simulation and facilitated discussion (debriefing) strategies rooted in educational theories of social constructivism.</p> <p>Study authors found that the methodological quality of the sample was generally low to moderate because the majority of studies were single site, with small sample size interventions using measurement instruments with limited reliability.</p>		from McMaster Health Forum)			
Examining the attitudes of medical students to medical leadership and management (30)	<p>A review of 26 papers examined the attitudes of medical students on health leadership and management to inform curriculum development. Following an inductive analysis of the topics addressed by the included studies, five content areas were identified: quality improvement; managed care, use of resources and costs; general leadership and management; role of the doctor; and patient safety.</p> <p>Students had overall positive attitudes regarding the use of clinical practice guidelines, quality improvement techniques and multidisciplinary teamwork. However, they had mixed attitudes towards the principles of managed care, cost containment and reporting medical error. Students appeared prepared to take on leadership roles, however, seemed reluctant to be followers or lead management issues. The attitudes of the students reflect the currently peripheral focus on leadership and management within medical education.</p> <p>The review found that education interventions had variable effects on the attitudes of the students, a consistent finding with previous research. The students perceived a need for leadership and</p>	2009	6/9 (AMSTAR rating from McMaster Health Forum)	1/26	0/26	0/26

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	management education in the curriculum, but also identified several potential barriers to its implementation, including a lack of curriculum time. Currently, this review is the only piece of work summarizing the attitudes of students on medical leadership and management. Further research is recommended to identify the most effective and cost-effective curriculum innovations.					
Examining the effectiveness of teaching quality improvement to clinicians (42)	<p>This review included 39 studies examining the effectiveness of teaching quality improvement to clinicians. All studies targeted physicians, medical trainees, nurses, or nursing students.</p> <p>Two of the Institute for Healthcare Improvement (IHI) knowledge domains were covered by all of the curricula: leading, following, and making change; and developing new, locally useful knowledge. Nearly all of the studies described the use of didactic instruction in combination with experiential learning.</p> <p>Program details of the 10 curricula targeting trainees varied greatly. One involved pre-clinical nursing students observing patients' perspectives of hospital wards for 10 weeks before learning and discussing how to apply quality-improvement methods, while another was a four-year longitudinal program that integrated didactic instruction and QI activities into an existing medical school curriculum.</p> <p>Seven studies involving residents had more similarities. All took place during ambulatory care assignments or electives, all combined didactic instruction with participation in QI activities, and none included non-educational QI interventions. Five curricula were integrated into a four-week rotation, while two held weekly or biweekly meetings for a year.</p> <p>Five of the 29 studies involving non-trainees described their primary focus as conveying QI concepts to learners while 24 involved QI interventions combined with educational components. Overall, the 29 studies of non-trainees described using adult learning principles less often than studies of trainees.</p> <p>With the exception of a single detrimental effect in learner attitudes, all outcomes had either positive or null effects. Twelve studies (31%) reported only beneficial effects, 24 studies (62%) reported mixed effects (positive, null and detrimental), and three studies found only null effects. Studies most frequently reported improved knowledge and rarely found benefits in patient outcomes.</p> <p>The authors cite potential publication bias as a limitation of the review, also noting that its findings may not apply to medical education in all countries because they limited the review to studies that were published in English and occurred in countries with healthcare systems similar to the United States.</p>	2007	5/11 (AMSTAR rating from www.rxforschange.ca)	1/39	0/39	0/39
Examining the effectiveness of instructional design features in	This review included 289 studies examining the effectiveness of instructional design features in simulation-based education.	2011	9/11 (AMSTAR rating from	35/289	0/289	0/289

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Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
simulation-based education (47)	<p>Included studies used technology-enhanced simulations to teach topics such as minimally invasive surgery, dentistry, intubation, physical examination, and teamwork. Learners included student and practising physicians, nurses, emergency-medicine technicians, dentists, chiropractors and veterinarians, among others.</p> <p>Evidence supports the following as best practices for simulation-based education: range of difficulty, repetitive practise, distributed practise, cognitive interactivity, multiple learning strategies, individualized learning, mastery learning, feedback, longer time, and clinical variation.</p> <p>Authors noted that future research should clarify the mechanisms of effective simulation-based education.</p>		McMaster Health Forum)			

Appendix 3: Systematic reviews relevant to Element 3 - Identify and develop the complementary system initiatives required to support emerging leaders in practice

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
Examining mentorship programs in academic nursing (50)	<p>This review included 34 articles examining mentorship programs in academic nursing.</p> <p>Mentoring models included dyad, peer, group, online, distance, learning partnerships, highly relevant, and constellation mentorship models. Key mentoring program components included: having a program coordinator; orientation to the program; selectively matching dyads; developing clear purpose and goals; frequent communication between mentors and mentees; faculty development workshops; mentee reflective journaling; facilitation of socialization and networking opportunities; and administrative support.</p> <p>Based on the mentorship literature in academic nursing, it can be concluded that mentorship models and mentorship components look different in every setting, with no empirical evidence that one mentorship model is more effective than another. Given the significant resources required to support mentorship innovations, understanding the benefits and shortcomings of various mentorship components can help ensure scarce resources are invested in the most effective mentorship strategies.</p> <p>Mentorship programs typically have implementation costs and require expenditures for their continued operation. In order for a mentorship program in nursing academia to succeed, there must be faculty members who have an interest in mentorship and support of the faculty administration.</p>	2015	5/9 (AMSTAR rating from McMaster Health Forum)	4/34	0/34	0/34
To aid leaders and managers to use succession planning as a tool in their recruitment, retention, mentoring, and administration activities, and also provide insights for future development of healthcare succession-planning frameworks (51)	<p>Comparable to business succession planning, healthcare succession-planning models stress the importance of articulating future needs and identifying future leaders.</p> <p>All business models reviewed require candidacy development plans and a process for evaluation to monitor the performance of the succession-planning framework.</p> <p>Key components of succession planning include strategic planning, identifying the desired skills and needs for succession candidates, finding and mentoring succession candidates, resource allocation toward leadership development, aligning learning and development needs of succession candidates with organizational growth requirements, and evaluation.</p> <p>In all of the reviewed frameworks, strategic planning is a prerequisite to succession planning.</p> <p>Chief nursing officers and healthcare leaders should implement succession planning to avoid knowledge loss.</p> <p>Currently, there is no best practices framework for the implementation of succession planning in healthcare contexts.</p>	2008	3/9 (AMSTAR rating from McMaster Health Forum)	Not reported	Not reported	Not reported

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Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	Establishing team building, which wasn't identified specifically within the reviewed literature, can facilitate important personal interactions that encourage predecessors and successors to engage in an evaluation process that addresses the needs of stakeholders.					
To appraise and synthesize the best available evidence on the feasibility, meaningfulness and effectiveness of nursing leadership attributes that contribute to the development and sustainability of nursing leadership to foster a healthy work environment (39)	Nursing leadership is identified as a key issue in addressing the shortage of nurses. The review considered interpretive, critical and textual data to look beyond effectiveness, and towards meaningfulness, feasibility and applicability. There is no specific style or attribute of a leader that necessarily leads to a healthy work environment. Four leadership styles were positively associated with patient quality of life: participatory, consultative transformational and transactional.	2003	10/10 (AMSTAR rating from the McMaster Health Forum)	5/44	0/44	0/44
Examining the role and impact of research positions within healthcare settings (49)	<p>This review included eight studies examining the role and impact of research positions within healthcare settings.</p> <p>Evidence in this review suggests that research positions embedded within healthcare settings can influence individual and team-based research skills, and research participation of allied health professionals (AHPs).</p> <p>The role of allied health research positions was summarized across three main themes: 1) provision of academic support to individual and/or teams; 2) development of own research; and 3) service level/organizational support.</p> <p>The impact of the research position on allied health research capacity was broadly summarized across four themes: 1) increased individual research skills and participation; 2) increased research activity; 3) improved research culture and attitudes; and 4) increased team and organizational-level skills.</p> <p>Future research is needed to further investigate the sustainability of changes arisen from research positions and what mechanisms of the positions have the greatest impact.</p> <p>A significant limitation of this systematic review was reported as the widespread use of self-reported surveys and participant interviews.</p>	2015	7/10 (AMSTAR rating from McMaster Health Forum)	0/8	0/8	0/8

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
Examining the application of quality-improvement methodologies from the manufacturing industry to surgical healthcare (55)	<p>This review included 34 studies examining the application of quality-improvement methodologies from the manufacturing industry to surgical healthcare.</p> <p>There was great variation in the application of QI methodologies to surgical patient care, from settings to aims to study designs and interventions. Infection control, complication reduction, delay reduction, antibiotic use, cost, length of stay, and pain were some of the major areas in which they were applied.</p> <p>QI methodologies from industry can have significant effects on improving surgical care, from reducing infection rates to increasing operating-room efficiency. The evidence in this review is generally of sub-optimal quality; rigorous randomized multi-centre studies are needed to bring evidence-based management into the same league as evidence-based medicine.</p>	2010	5/10 (AMSTAR rating from McMaster Health Forum)	0/34	0/34	0/34
Examining policy options to improve leadership of middle managers (40)	<p>A narrative synthesis of 153 studies examined various policy options to improve the leadership of middle managers in the Australian residential aged-care setting. The issue of Australia's aging population in combination with an increasing prevalence of chronic diseases calls for an informed and capable aged-care sector.</p> <p>The review found several key findings. A positive staff perception of the leadership of a middle manager (e.g., care manager, deputy/director of nursing, care director) was associated with higher job satisfaction, retention of staff, and provision of quality care, and these in turn were suggested to reduce costs, such as turnover costs. Education programs improving the quality of leadership and management were shown to increase staff productivity and performance.</p> <p>The review compiled the essential attributes of leadership common among good leaders, which included: 1) hands-on accessibility and professional expertise in nurturing respect; 2) recognition and team building; 3) effective communication; and 4) flexibility. All studies emphasized a similar range of desirable leadership skills, which included openness, enthusiasm, respect and consideration, role modelling, and mentoring and supervision. These attributes all contributed to peer and organizational networking, identified as an essential function of leadership.</p> <p>Another factor that had an impact on successful leadership outcomes was organizational leadership. By providing structural (i.e., resources) and psychological (i.e., culture and protocols) supports to leaders, the framework promoted effective leadership and the delivery of high-quality care. Such resources included an adequate skill mix of staff, clear HR practices and administrative support, free flow of information and communication policies, and attractive incentives.</p> <p>From the literature, the review provided a list of potential policy actions and options for the enhancement of leadership and management. These included: 1) development of an aged-care specific leadership and management qualities framework; 2) development of a leadership and management program; 3) establishment of a partnership approach; 4) establishment of an aged-care leadership and management centre; 5) careful consideration of the relevance of clinical qualifications</p>	Not reported	3/9 (AMSTAR rating from McMaster Health Forum)	Not reported	Not reported	Not reported

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Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on leadership
	<p>in aged care; 6) promoting movement between leadership/management levels; 7) setting up a National minimum dataset (MDS); and 8) creating a national aged strategy.</p> <p>Currently, the theory development research in aged-care leadership is limited. A lack of clear guidelines and assessors for performance and leadership skills have ensured an inadequate preparation of middle-management leaders. Very few clinical leadership programs are dedicated to targeting the development of such leaders, and as a result, the effectiveness of such programs is unknown. The most supported framework as of now is the transformational model, which proposes the dynamic, inspirational leader who pairs reward and reinforcement with motivational empowerment. Overall, the review calls for a national strategy promoting a common approach that is congruent with person-centred care and sector appropriate for aged-care leadership and management development.</p>					
Examining the role of medical leadership (36)	<p>A systematic review of 34 studies examined the different conceptualizations of medical leadership, roles and activities, and personal- and context-specific features. Medical leadership is primarily defined by two types, either as physicians with formal managerial roles or physicians who act as informal leaders in daily practices. Generally, they are individuals who perform general management/leadership activities. Arguably, they are considered necessary for overcoming the divide between professional and managerial logics.</p> <p>The review summarized the common activities and necessary roles performed by medical leaders. These were divided into two major types: straightforward general management and leadership, and balancing between management and medicine. The latter involves creating linkages within and between organizations, monitoring and reporting information of interests back and forth, and aligning the interests of both aspects. Other roles included influencing multiple viewpoints (e.g., peers, managers) and dealing with tensions.</p> <p>Personal features of medical leaders were ordered in prevalence as credibility, skills, knowledge, attitude, and experience in management. The importance of credibility was demonstrated by the reputation of clinical excellence, commitment to clinical work, and respect and trust by peers. The most often cited required skills for medical leaders were communication, empowering others, resolving conflicts, administrative skills, and collaboration skills. The attitudes that should be possessed included motivation, assertiveness, cooperativeness, and integrity. On the contrary, barriers include competing logics (e.g., quality of care versus efficiency, working autonomously versus being a subordinate), role ambiguity, lack of time and lack of support.</p> <p>Further research is recommended, especially in terms of understanding the informal roles of medical leadership and identifying the identity and institutional work performed by medical leaders.</p>	2017	5/10 (AMSTAR rating from McMaster Health Forum)	2/34	0/34	0/34



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