The Canadian Medical Association (CMA) held its inaugural Health Summit in August 2018, sparking a national conversation about innovation and its potential to help build a future of better health.

Participants at the Health Summit explored how:

• Innovation can support culturally diverse, inclusive and accessible care;
• Technology can enable and promote patient-centred care, and better serve vulnerable populations; and
• Patients and physicians can prepare for and embrace bold transformational change.

The Summit was attended by more than 700 physicians, health care providers, patients, health care innovators, futurists, system leaders and other stakeholders who exchanged ideas, provocations, and questions about innovation as a key driver to a future of better health.

This summary provides an overview of many of the panel discussions that took place over the course of two days.
HIGHLIGHTS OF PANEL DISCUSSION

ADOPTING AND SCALING UP INNOVATION IN HEALTH CARE: WHAT IS HOLDING US BACK?

PANEL DISCUSSION WITH SENATOR KELVIN OGILVIE, PHILIP EDGCUMBE, AND ZAYNA KHAYA

Panelists explored key issues preventing Canada from adopting new innovations in health care, as well as how Canada can move beyond “the land of pilot projects” and scale up and spread successful innovations across healthcare systems. Real-world examples of how change occurred and how barriers were overcome were provided. There was also a powerful discussion about how the conditions for exponential thinking and change can be created in health care.

Panelists noted that many factors prevent new innovations in health care in Canada, including the lack of a coordinated health care system, and the dysfunction created by a collection of health care silos. There is also a need for an innovative culture to adapt innovations from other places or other systems. Panelists pointed out the weak collaboration within the system for service delivery, as well as the need for more leadership and collaboration among federal and provincial governments. Competition was also seen to play an important role in the spread of innovation. It was suggested that a national website of innovation and pilot projects would be beneficial to help share developments in our country and beyond. Panelists discussed the value of national strategies for particular areas that would benefit from innovation, such as dementia and obesity.

The experts suggested that physician innovators are essential to success. It is also necessary to design for spreading innovation, just as we have already designed for privacy in relation information and communication technologies and large-scale networked data systems. Pilot projects may be reasonable, however attention must be paid to the necessary infrastructure required for spread. Funding should be tied to spread plans, and scale may be more easily achieved by looking beyond the Canadian market. Panelists challenged participants to contemplate problems that could be solved with the right combination of people, technology, and capital, and consider going for 10x, not 10%.

Once we see the future with exponential thinking and a change in mindset, health care cannot go backwards. The panelists encouraged participants to commit to “playing in the future” and dedicating time to thinking about the future, recognizing we won’t want to go back once we’ve seen what is ahead.

Observations from attendees included carefully considering the role of ethics as we adopt and scale up innovation in health, and panelists agreed on the necessity for ethics experts today and in the future. There were concerns raised about competition at the expense of equity, as well as the need for evidence-based technological innovations.
Potential action items and take aways:

- Encourage innovation in health care by establishing “greenhouses” or creating separate spaces to experiment outside the confines of typical rules.
- Look at innovation through an equity lens, and also consider how managed competition may help to identify and scale breakthrough technologies.
- Maintain appropriate standards and ensure that innovation supports patient outcomes.
- Revisit physician remuneration models to provide the necessary incentives to achieve real quality improvement and savings in the health system.
- Consider appropriate privacy and confidentiality safeguards.
- Ensure that patients are empowered by technological advances.
- Support and assist physicians to strengthen their knowledge and skills in relation to new technologies.

COLLABORATION THAT LEADS TO INNOVATIVE PRACTICES IN CARE DELIVERY

Panel Discussion with Dr. Yanick Beaulieu, Lindee David, Dr. Sonny Kohli, Scott Livingstone and Amanda Whitewood

Panellists discussed the power of collaboration — from the point of view of government, health care institutions and business — and how to scale innovation to improve patient care. Physician entrepreneurs shared personal stories about how collaboration helped them build national and international humanitarian efforts.

The panellists agreed that a multitude of stakeholders need to be involved to build a culture of innovation, including patients, physician leaders and physician innovators. Multiple perspectives are necessary to drive a culture of innovation, and collaboration with others is vital. Joint forums that include all major stakeholders can be very constructive. There is value in speaking the same language, and this will help innovators gain traction within the health system. Having a common voice regarding what digital health means and what it can do is important.

The experts on the panel agreed we have to learn from those who have gone before. We must also recognize that there will be successes and failures. Failure is constructive when we extract learnings and build on these. Innovation is also encouraged when we move away from conducting pilot projects and adopt an approach where we learn as we build, and we iterate as we move forward. Vision is needed to get beyond common concerns related to infrastructure (e.g., insufficient bandwidth for web-conferencing). We must reinforce — with politicians and health care stakeholders — that these are not just IT projects.

The panellists noted that many innovative practices will not save money, but they can significantly improve the quality of care, enhance access and improve health. We should talk about how we can apportion the pie more appropriately. The panellists discussed opportunities to entrench innovative approaches and entrepreneurial thinking in education, including medical education. It was also suggested that innovation platforms, driven by patients and physician innovators, are necessary to drive the health care system toward determining if we are providing value in every aspect of our work.
A culture of sustainability and equity for innovation may also be strengthened by protecting innovation hubs. It was noted that innovation may not be equitable for a period of time, and this may be necessary in the short term. The full continuum of stakeholders need to be engaged in this conversation and be satisfied with the approach. The panellists pointed out that innovation can also happen in low-resource settings, and these advances can also be leveraged (e.g., high-value, low-cost innovations in other countries). Non-technological social and system innovations are also essential.

**Potential action items and take-aways**

- Convene groups from across the health system — including payers, physicians, teams and innovators — to obtain the multiple perspectives needed to drive a culture of innovation.
- Encourage a multitude of stakeholders to be involved in building a culture of innovation, including patients, physician leaders and physician innovators.
- Consider creating environments where we learn as we build, to move beyond the pilot-project mindset.

**EMPOWERING BETTER CARE FOR INDIGENOUS PEOPLE**

**Panel Discussion with Dr. Alika Lafontaine and Dr. Cara Bablitz**

Panellists explored novel solutions and approaches to advance Indigenous health and health care in Canada. The inequities in health and social services that Canada's Indigenous children experience were described, and opportunities to ameliorate them were discussed. The panel examined practical strategies to close the health status gap between Indigenous and non-Indigenous Peoples in Canada and assessed the potential for new approaches such as virtual care to improve health care for Indigenous Peoples in remote communities.

It was noted that many issues affecting Indigenous health are not unique; however, they are magnified in Indigenous populations. These include issues pertaining to communication, trust and the exchange of information. Physicians and other health care providers should focus on the validity of truth and also on trauma-informed change. Many Indigenous patients may be ready to share their trauma and their previous experiences with the health care system, and physicians need to be prepared to receive these stories and to be more at ease with history that is uncomfortable.

Panellists challenged the audience to understand the definition of equity. It was posited that equity is an intent; it is a state of mind. We all have an intuitive sense as to whether there is equity. While technology can be leveraged to support equity, it was noted that only equity can lead to equity.

Innovation in Indigenous health is more than technology such as remote patient monitoring, it is about changing the way people feel about Indigenous patients. From a system perspective, it was noted that physicians often use workarounds to meet the needs of Indigenous patients, for example, to obtain medical equipment. It is important to acknowledge these problems and address them head on. The momentum can change when physicians speak out about existing inequities. There are Indigenous health norms that we accept that are not, in fact, normal. Examples include the lack of clean drinking water in many Indigenous communities (why is this the case?) or the aim to eliminate tuberculosis in Canada’s North by 2030 (why not sooner?).
While cultural competence is important, the panellists indicated that health care providers often get caught up in ignorance and competence. It is necessary to ask patients what they want, give them options and give them (and Indigenous communities) space to decide what they choose. This approach blends science and art.

The panellists indicated that Jordan's Principle is an example of a successful legal innovation. There are many other signs of progress toward empowering better care for Indigenous Peoples, such as Indigenous health programs that deliver primary care on reserves and Métis settlements. Physicians were encouraged to use their voices to advocate for Indigenous health, including the determinants of health. Physicians must examine the value they can bring to efforts to address health inequity.

Physicians who encounter Indigenous patients who resist engagement must step back and consider Indigenous trauma and trauma-informed care. Indigenous patients who display anger, for example, are probably upset by their life experiences, not their physician. With practice and experience, physicians’ ways of interacting with Indigenous patients will change.

Potential action items and take-aways

- Blend science and art when it comes to health for Indigenous people — ask patients what they want, give them options and give them space to decide.
- Support virtual groups (such as the CMA Communities of Interest) to create a safe place for learning and sharing.
- Encourage health providers to learn more about managing trauma as well as coping with secondary trauma and compassion fatigue.
- If you are a physician, get to know your community and its needs and lend your voice to the critical issues.
- Review The Truth and Reconciliation Commission of Canada website and health-related Calls to Action (#18–#24), and choose one Call to Action to advance right now.
- Support learners and trainees to better serve Indigenous patients. Medical schools should consider offering relevant experiences and resources to students so that they can better understand and care for Indigenous Peoples.
- Encourage Indigenous medical students to remain in their medical programs. Medical schools must make efforts to improve the representation of Indigenous learners in medical programs.
AUGMENTED INTELLIGENCE IN CLINICAL CARE

PANEL DISCUSSION WITH DR. CHAITANYA DAHAGAM AND DR. GIGI OSLER

Panelists described how cognitive systems are supporting clinicians in research, treatment recommendations and patient monitoring. They explored how physicians are responding to the impact of augmented intelligence (AI) in their clinical setting, including how AI is being used to support clinicians in research and patient care, and how to evaluate the impact of AI. The panellists also anticipated some of the ways that AI could be used in practice to reduce administrative burdens and enhance patient care.

Panellists noted that this collection of technologies can perform administrative and health care functions, and these should be leveraged particularly to carry out impersonal tasks (e.g., data abstraction) and support physicians to focus on caring for patients and families. AI offers many promising solutions (robot-assisted surgery, administrative workflow improvement, virtual care assistants, preliminary diagnosis, medication dosage error reduction, clinical trial participant identifier, etc.) and can help to support patients to become true partners in care.

Panellists recognized that many physicians practising today still rely on legacy technology such as fax machines, and physicians have noted that electronic health records often add to physician workload and possibly physician burnout. It was agreed that physicians and other clinicians need to be more involved in the design of technological solutions, so that these fit in to physician workflow as opposed to the opposite.

The panellists were concerned about the digital divide and explored the economic and social inequity with regard to access to, the use of and the impact of technology in health care. It was noted that most patients want new health care technologies, and these innovations must inform and engage patients. The data patients are gathering, such as sleep data and raw genetic data, need to be translated into relevant and personalized information to help support patients on their health care journey. Patients want to securely share these data and connect with physicians to receive evidence-based guidance, and they will probably gravitate toward providers who allow them to integrate their data and partner with them.

Participants from the audience noted that changing technology also affects physicians' soft skills, such as the ability to capture the patient story while using an electronic medical record or electronic health record. Patients shared the benefits of patient portals, particularly for self-management. Effective patient portals can also help physicians be better health care providers and help patients become true partners in their care.

From a health policy perspective, the challenge of achieving health care technology interoperability was explored. The ability of multiple systems to talk to each other and integrate data to improve care is fundamental, as is the necessary infrastructure and policy to get there. There is also a need to capture exogenous data from outside clinical systems and to have the ability to integrate various data sets.
**Potential action items and take-aways**

- Involve physicians and other clinicians in the design of technological solutions, so that these fit in to physician workflow as opposed to the opposite.
- Seek feedback from physicians regarding the impact of AI in their clinical setting as well as opportunities for improvement.
- Make recommendations to government and technology providers to address the gaps and concerns associated with the range of new technologies available.
- Provide guidance to help in the uptake of new technologies, as well the regulation of new innovations.
- Convene all key stakeholders (e.g., clinicians, health system leaders/administrators and IT developers) to address technology needs and culture: we must all be on the same page to move forward.

**INNOVATIVE APPROACHES TO IMPROVE ACCESS AND REDUCE HEALTH INEQUITIES**

*Panel Discussion with Dr. Tara Kiran, Dr. Kendall Ho, Dawnmarie Harriot and Dr. Kevin Pottie*

Panellists contrasted the differing and emerging health care requirements of a range of vulnerable groups, and they analyzed new and inclusive approaches to meeting their needs. They described innovative strategies to bridge the gap between hospital and community care, and they assessed how these strategies can be applied in physician practice.

The panellists argued that access to health care could be improved by strengthening the public health system, particularly outside of hospitals and physician services. They also maintained there must be heightened focus on health outcomes for different groups of people, and a move beyond averages (e.g., average life expectancy). When prioritizing areas for improvement that disproportionately affect particular groups, an equity approach was suggested. And it was noted that some groups may need different innovations than others to achieve the same outcomes.

Consideration should be given to four levers related to growth in health care technology as it pertains to increasing access to care. These are identifying clinical care gaps today and making appropriate innovations; partnering meaningfully with patients; generating and curating data to support the future use of artificial intelligence (AI); and advocating for digital health literacy to strengthen authentic patient engagement.

The experts suggested that when it comes to marginalized communities such as refugees, the homeless and those living in poverty, it is important to get these populations from emergency departments to stable housing, jobs and community primary care. On a related note, it is advantageous to work with people with lived experience to learn about the challenges they face with their personal health and with the health system. We must strive for a health care system that bridges people and resources, builds trust and links patients and physicians. This includes acknowledging individuals and groups, making space for them to speak, being flexible around their needs and providing the tools and resources for them to participate effectively. A co-design approach is often preferred. The experts on the panel noted that partnerships and
collaboration among patients, physicians, other health professionals, researchers, policy-makers and the business community should be leveraged to advance technologies to improve health. The notion of durable relationships in health care innovation was supported.

Comments from participants pertained to the integration of health services with other sectors such as housing and education. It was noted that health providers should be particularly aware of barriers to access to mental health services among marginalized and vulnerable populations, and more attention to this is necessary in medical education. It was posited that patient involvement in the design of health care at every level should be vastly enhanced. Physicians must hold themselves accountable by measuring patient experience, particularly as it pertains to access and patient-centredness.

**Potential action items and take-aways**

- Address health equity by also addressing the social determinants of health; poverty has an exponential impact on health.
- Become familiar with the [CMAJ Evidence-Based Clinical Guidelines for Immigrants and Refugees](#).
- If you are a physician, seek out the supports and resources available, build strong rapport with your patients, avoid making assumptions, listen with an open mind and have supportive conversations.
- Work to vastly enhance patient involvement in the design of health care at every level.
- Apply a health equity lens to current or new policies on health.
- Encourage physicians to use their platform to advance initiatives to improve access and reduce health inequities.

**HEALTH DATA — REVOLUTION OR EVOLUTION**

**PANEL DISCUSSION WITH DR. PETER VAUGHN, ARANKA ANEMA**

Panellists explored the potential for big data in the health field. The experts on the panel considered the extent to which digital health technology will disrupt the status quo in health care delivery, and they evaluated opportunities for real-time information and “big data” analytics to improve the timeliness and effectiveness of health care. The panellists also examined how emerging technologies will enable patients to protect their privacy and exert control over their personal health information.

It was noted that Canada’s health care system (or systems) has evolved over the past 100 years, and that many structures are aged. Digitization is ushering in a global era of social transformation, and this is a major disruption to our system. It was argued that health care big data holds the key to unlocking value in health care, and integrating large health data sets creates tremendous opportunity and is an essential step in a value-based health care system.

However, large-scale change and new technologies also bring risks. Accordingly, pan-Canadian digital health legislation for the 21st century is necessary, and this requires strong leadership and courage. Moreover, rapid developments in digital health and the convergence of biology and technology require the re-imagining of the Canadian health care enterprise. It was noted that the General Data Protection Regulation is the European Union’s most important change in data privacy regulation in 20 years, and it will reshape the way data are handled across every sector, including health care.
The experts on the panel indicated that we all leave a digital footprint, and our imprints on the Internet contain valuable information. There is ongoing work to build out machine learning algorithms to enable mining of big data online, including social media data. We have learned that informal data are useful to clinicians and public health officials, including for early warning signal detection for pandemic outbreaks, food safety events and adverse drug events. When we combine social media data with situational data, we can get a rich understanding of health risks. At the same time, the tsunami wave of data presents opportunities and challenges to parse out the meaningful data amid the noise. It is important to design now for the future and to learn from best practices.

The experts on the panel explored the question of adopting exponential technologies in the context of health care settings and public health settings. It was noted that the amount of work and capacity required to mine health data for even one patient can be daunting. While excellent technology exists, it is not often patient-friendly and there is much work to do to enable adoption that is patient-centric. In addition, clinicians need support and education to understand and use new technologies, and they are an important part of the co-creation process. The panellists stated that we must plan now for working with exponential technologies such as artificial intelligence (AI), data science, digital biology and biotechnology.

It was suggested that one of the greatest opportunities is allowing individuals to have access to their electronic medical record. In Australia, My Health Record is an online summary of a person’s key health information. Similar initiatives in Canada were discussed. The concept of “the quantified self” was also considered, and the idea of using technology to acquire data on aspects of a person’s daily life and health was explored. These advances can put an individual’s data within their control in a way that empowers them to engage meaningfully in their health.

Important questions were raised in relation to ethics and values. It was noted that there may be a polarized understanding of what we can do with informal, publicly available data. Must all information be de-identified? What if the data are an indicator of depression or suicidality, for example? Should such data be actionable? It was suggested that Canada should be nimble in its structures and governance to accommodate the changes occurring. We require specific mechanisms to ensure that the data that we capture allow for meaningful intervention, whether at the population level or to inform an individual health care practitioner. This is not really about technology, it’s about society, and ethics issues will persist.

The panellists noted that with the emergence of block chain technology, there is the opportunity to design data transmission and communication systems differently and more securely. With electronic medical records, for example, block chain can be an important mechanism by which data can be transferred and shared between patients and clinicians in a manner that enhances cybersecurity.

Potential action items and take-aways

- Consider the opportunities and the risks of big data (e.g., unregulated algorithms) and ensure strong leadership on how to govern data within this new environment.
- Take the opportunity, as Canadians, to learn from other countries and to adapt best practices.
- Consider developing a list of apps and innovations to assist clinicians, who can find it challenging to know what innovations and technologies to recommend to their patients.
- Encourage appropriate legislation and regulation, along with clear accountabilities.
HIGHLIGHTS OF OPEN DIALOGUES

Participants at the Health Summit were invited to participate in two Open Dialogues to reflect on and discuss ways to improve health systems and population health.

Participants identified the following opportunities:

HEALTH SYSTEM REFORM & REDESIGN

Participants identified the need to reform the Canadian health system. In particular, some specified the need to develop a national health system, be it through reducing and eliminating provincial barriers to accessing care for patients, addressing barriers to practice and communication for providers, or developing national quality standards. Some participants specified the need to develop a system that provides equitable, high-quality care to all Canadians. Participants noted that existing silos in Canadian health systems (e.g., between health care and health information systems, provinces, institutions) hinder communication and thus the provision of timely and high-quality care.

Participants identified several innovations to eliminate or mitigate silos in current health systems, including:

- **National electronic medical record (EMR) system**
  There was a resounding call to establish a single, national EMR system or to improve the inter-operability of existing EMRs. The EMR was envisioned as a real-time, central repository for various areas of care (e.g., clinical, diagnostics, vaccination, public health). Participants identified a national, linked EMR as key to improving communication between providers and across institutions and jurisdictions, which were frequently cited concerns. Moreover, EMRs were cited as a means to improve continuity of care (e.g., in an era when more patients use walk-in clinics) and reduce redundancies (e.g., duplicate tests) and thus shorten wait times. EMRs were seen as facilitating virtual care and enabling patients to access their personal health information (both discussed below).

- **National "Mayo Clinic"**
  Several participants suggested creating a pan-Canadian health authority that would oversee national standards and establish common, measurable health and quality improvement goals to promote best practices, akin to a national "Mayo Clinic."

- **National patient safety agency**
  Some participants suggested developing a national patient safety agency for reporting and sharing patient safety incidents and improving safety standards in medical workplace environments.

- **National licensure**
  Some participants identified the need for a unified regulatory body to support cross-Canada portable licensure for physicians and other health professionals to allow free movement of health care providers, which would improve access to health care in underserved areas and support a "national" health care system.
- **Virtual care**
  Echoing the calls for a national EMR, a number of participants identified virtual care as a significant innovation for improving access to primary and specialist care. Participants noted the ubiquity of electronic communication devices and called for the expansion of such services to underserviced areas and populations to enable virtual care.

- **Provincial accountable care organizations (ACOs)**
  A few participants cited the need for greater professional accountability, such as through a physician-led provincial accountable care organization for delivery of health.

- **Community health councils and community-led decision-making**
  Some participants suggested establishing local health councils to facilitate community-level decision-making concerning health care delivery and priority setting. Similarly, a participant suggested the need to support local health authorities to develop and implement local solutions.

- **Integration of artificial intelligence (AI) in practice**
  Participants mentioned AI several times in connection with enhancing the functionality of EMRs. Most often, AI was cited in reference to voice recognition technology that could be used to reduce the administrative burden on providers. Participants identified AI as a means to improve interactions with patients, thus (re)placing the patient–provider relationship at the core of the clinical encounter.

- **Ethical/social/cultural considerations**
  A few participants noted the importance of drawing on ethical, social and cultural thinking to help physicians navigate the rapidly changing technological space. They cautioned against allowing ethics to be only an afterthought in health care decision-making. Another participant asked what designing compassionate technological health care systems would entail.

- **Health care human resources**
  Some participants suggested the need to increase and/or reorganize the allocation of human resources, including by adopting responsive, evidence-based human resource planning. National licensure was identified as a means of facilitating more effective allocation of health care human resources in Canada.

- **Outcome-based allocation of resources**
  A few participants suggested allocating resources and compensation on the basis of outcomes to promote accountable, cost-effective and more objective resource allocation.

- **Provider payment models**
  A few participants suggested reforming provider payment models, including by remediating pay relativity across specialties, improving remuneration models for all providers to encourage treatment of complex and underserviced patients, and exploring alternatives to fee-for-service remuneration (e.g., through bundled payments).

- **Privatization of health care**
  A few participants suggested opening the medical insurance system to private practice to improve access and quality of care by reducing regulatory burdens to promote competition, considerations of cost-effectiveness, and physician-led innovation.
HEALTH SYSTEM INTEGRATION

Participants identified the need for greater integration of health systems. While few participants suggested increasing private sector involvement to address resource constraints, more participants cited innovative ways of integrating existing health systems and reorganizing existing resources (e.g., through improved processes for referrals) to address long wait times and resource constraints.

Some of the proposed solutions include:

**Integration of health and social services**
Several participants identified the need to integrate health and social services, recognizing that health is determined by factors beyond health care. Examples of integration included unifying funding deliberation for health and social services, integrating health care services into home and community services offered for seniors and vulnerable populations and transitioning toward a "One Health" model covering social, environmental, health and other public policy areas. Participants often suggested integrating health and social services in the context of discussing preventive care and the social determinants of health.

**Coordination of care and referral process**
Participants identified the need to better coordinate available care resources and referrals to reduce costs and wait times and improve access to physicians, especially specialists. Some suggested implementing a centralized referral process, which could connect patients and providers as well as collect relevant data concerning wait times and regional differences. Others noted the possibilities of leveraging technologies (e.g., using mobile and web platforms, EMRs) to facilitate better communication between primary and specialist physicians.

**Data collection and data sharing**
  - **Privacy**
    A few participants cited the need to develop secure communication technologies, especially for media that are already used widely and often informally (e.g., cell phones), to facilitate data sharing.
  - **Commercialization**
    A few participants cautioned against the commercialization of patient data. In particular, they raised concerns about the sale of data and its impact on health inequities, or the monopolization of data by a few corporations in ways that would limit the use of data to improve health outcomes for all Canadians.
SYSTEM-LEVEL HEALTH POLICY

ACCESS TO PRIMARY AND SPECIALIST CARE
Participants identified the need to ensure that all Canadians have access to high-quality primary and specialist care when they need it. Several participants specified the need to expand publicly funded mental health care services, especially therapy-based services and care for children; these proposals were rated as highly significant for improving population health. Participants also cited system-level reforms, including centralized referral systems, improved human resource planning, and virtual care and virtual triage, as ways to increase access to physician services.

Funding models
- **Basket of insured services**
  Participants discussed the need to expand the range of publicly insured services to include uninsured mental health services, access to allied health professions (especially dentistry), and home care, which was rated as highly significant.
- **Pharmacare**
  Numerous participants identified the need for a universal, publicly funded national pharmaceutical insurance program (pharmacare); pharmacare was also rated as having a significant impact on improving population health in Canada. Additionally, some participants suggested modifying pharmaceutical regulation to enable timelier inclusion of novel drugs on public formularies.

Infrastructure
- **IT and technology**
  A few participants identified the need to ensure that every patient and health care provider in Canada has Internet access and to expand IT infrastructure to support initiatives such as virtual care and EMRs.
- **Transportation**
  A few participants cited the importance of improving transportation to facilitate access to care for rural and remote communities. One participant emphasized improving transportation infrastructure to bring care to communities rather than requiring patients to leave their communities to seek care.

PUBLIC AND POPULATION HEALTH
Numerous participants identified the need to promote preventive care to improve population health. This is in keeping with public health goals and promotion strategies aimed at both the individual (behavioural) and societal (social determinants of health) levels.

Areas identified as requiring attention include:

Disease prevention and health promotion
- **Public education and resources**
  Participants identified the need to develop education initiatives to improve health literacy (e.g., through a Canadian health literacy curriculum, including in early education) and promote healthy behaviours (e.g., nutrition, exercise) to empower patients to optimize their health. Some participants suggested leveraging new technologies and media to facilitate education, especially for youth.
Addiction treatment (e.g., opioids)
Some participants cited the need to improve addiction treatment in Canada, especially for opioids. Several participants noted the need for publicly funded safe consumption sites and treatment facilities.

Child care
A few participants identified affordable child care as a way to improve population health (e.g., by reducing unemployment and school dropout rates).

Social determinants of health
Many participants indicated that addressing the social determinants of health, or upstream factors affecting health and healthy behaviours, would have a significant impact on population health in Canada. A few participants suggested developing a health equity assessment tool.

Poverty reduction
In keeping with the recognition that socioeconomic status is a significant indicator of health, many participants cited poverty reduction strategies as significant for improving population health. Most often, participants suggested adopting a universal minimum-income program.

Food security and potable water
Participants cited the importance of ensuring that all people in Canada have access to nutritious food. Water security received even greater attention and this issue was often raised in reference to Indigenous communities, many of which lack potable water. Securing access to food and water were cited as “low bars” for a country such as Canada.

Housing security
A few participants cited the need to ensure housing security and address homelessness in Canada.

Special populations
Participants identified sub-populations that face unique challenges (e.g., related to accessing health care and social services) and require particular attention to improve health outcomes:

Indigenous health
Several participants identified the need to address health inequities and poorer health outcomes among the Indigenous population, most often through improving basic living conditions and social determinants of health. One participant also suggested implementing self-governing health authorities for Indigenous communities across Canada.

Seniors health
Participants identified health care for seniors as an area requiring great improvement, especially related to access to long-term care and alternate housing, access to dementia care (e.g., by focusing resources on care, not just cures, and addressing stigma), support for patients and caregivers, and elder abuse. One participant suggested developing a comprehensive national or provincial care strategy for senior care.
**PHYSICIAN LEADERSHIP AND ENGAGEMENT**

**Culture of medicine and medical professionalism**  
Several participants identified issues related to the profession, including teaching professional values and attitudes, fostering a culture of innovation in medicine, and the need for the profession to redefine itself and rearticulate its commitments in the context of the new digital era. Several participants noted that the medical profession should be socially accountable (e.g., by ensuring that patients with complex health needs are served).

**Medical education**  
- **Curriculum (medical school and continuing education)**
  A few participants discussed changes in medical education. For example, one suggested introducing bias training to prompt reflection and reduce bias in health care delivery. Others noted the need to address certain topics that presently receive insufficient attention (e.g., addiction, Indigenous health).

- **Type of education (skills and competencies)**
  Several participants noted the importance of teaching communication skills (both provider–provider and patient–provider). A few participants suggested promoting a culture of innovation and leadership in medicine. Others identified the importance of teaching professional values and reflection.

**Physician health and wellness**  
Several participants discussed the need to address physician burnout and some emphasized learner and trainee health in particular. Participants cited both fostering resiliency, starting during medical education, and improving working conditions as ways to mitigate burnout.

**PATIENT EMPOWERMENT**

**Patient-centred care**  
Participants discussed the need to make care truly patient-centred and responsive to patient needs. Most often, participants identified better health system integration and communication as ways to facilitate responsive care (e.g., through linked EMRs, having thorough goals-of-care discussions in primary care settings). Some participants cited the need to support patients to effectively engage and communicate within the health care system so as to feel empowered to seek the best care for themselves.

**Patient access to and "ownership" of personal health information**  
Increasing patient access to personal health information, especially through EMRs, was frequently cited as a way of empowering patients. Some participants specified that portable EMRs (a "digital passport") could allow patients to control with whom their information is shared. Moreover, they could position the patient as the primary "owner" of the information, which some suggested would improve the accuracy and accountability of health information. One participant suggested that empowering patients with health information could support re-orienting the clinical encounter toward treating the whole patient and away from the present disjointed, "assembly line" model of medical care.
Patient engagement
Participants discussed the need to empower patients to be partners in their own health and health care, such as by incorporating patient voices in care decision-making as well as higher level policy-making. Some suggested leveraging technologies to capture a broader range of patient voices. Others noted the importance of drawing on patient and provider perspectives to assess whether new technologies or care delivery modalities (e.g., virtual care) are meeting their goals. Some participants also identified the importance of including patients and caregivers in medical education to support better communication and collaboration in care.

TAKE-AWAYS
Many of the identified issues intersect or overlap, reflecting the interrelated nature of health systems, policy and practice. Similarly, many participants noted that challenges or innovations at the level of health systems or system-level policy hinder or facilitate health care delivery, practice and outcomes downstream at institutional, professional and practice levels.

Participants most frequently cited poor health-system integration and communication (e.g., nationally, institutionally, between providers and between individual patients and their providers), poverty, and insufficient and inequitable access to care as the greatest challenges facing health systems and population health in Canada. The most frequently cited and highly rated innovations that participants identified included a national, unified or linked EMR, pharmacare, and addressing the social determinants of health (especially poverty reduction through minimum income). These innovations were often noted in reference to other, downstream issues, lending further support to their significance for improving population health or health systems in Canada. For example, EMRs were frequently discussed in relation to improving patient access to care and information. It is also worth noting that many themes, especially those that were cited most frequently and rated as highly significant, are consistent with current policy and practice initiatives, including ones that have been receiving significant public attention (e.g., pharmacare, minimum income). Others, such as the emphasis on developing a national health system, linking EMRs, and improving communication at all levels, point to ongoing challenges that health care providers and patients continue to face in Canada.