

DIGITAL HEALTH

The Digital Health Revolution Begins Now

Canadians have embraced digital technology in almost all aspects of their lives, yet when it comes to health care, the system has been slow to adopt innovative technologies. This impacts access to health care and the quality of care Canadians receive. According to the Commonwealth Fund's 2017 survey of 11 countries, Canada ranked ninth in health system performance, and came in last place for certain indicators measuring access to care.

Currently, only 22 per cent of Canadians have access to their health information online, yet most would like access. They want the ability to renew prescriptions, view their health information, book appointments with their family doctor, and confirm specialist referrals, all online and from the comfort of their home.

Sparking action

It's critical that we change this trend and make it just as easy to access health information and digital health solutions as it is to shop, book flights, and connect with friends and family online. We need to spark interest and action in digital health innovation — Canadians expect and deserve better. But we can't do this in silos. That's why Canada Health Infoway launched ACCESS 2022, a movement to bring together innovators, industry, government, clinicians, and patients who share a vision of a better health system and are interested in collaborating to resolve challenges and scale digital health solutions.



Michael Green
President and Chief
Executive Officer,
Canada Health Infoway

This vision includes providing more Canadians with access to their personal health information and to digitally enabled health services anytime, anywhere, from the device of their choice. For Canadians, this means more informed decision making, strong privacy and security protection, and better access to health providers. For clinicians, the adoption and use of patient-centric technologies will lead to better patient outcomes and streamlined communication with clinical partners. The effective scaling of successful digital solutions will result in greater value for Canadians and Canadian industry.

Reducing barriers to access

Digital health innovations will reduce many of the barriers to access that exist in Canada. The benefits for Canadians and the health

system are hard to ignore. A recent study found that Canadians collectively reap about \$119 to \$150 million in value every year from adopting digital health technologies. This is due mainly to avoiding time off work, and travel and other costs associated with a trip to the doctor's office.

In addition, the current adoption of digital health solutions generates up to \$134 million annually in value to the health system. That's due mainly to the avoidance of unnecessary phone calls, in-person visits, and trips to emergency rooms, because patients can access their health information and connect with their doctor electronically.

Face-to-face visits will still have a place in primary care, but an in-person visit isn't always required. With digital health innovations, patients can spend more time at home getting well, instead of travelling to medical appointments.

Digital health is the future. The opportunity to revolutionize how we access our health system is upon us. We've already made tremendous progress improving our health system through technology, and with a team of passionate partners committed to better patient outcomes, Canada can reclaim its place as a global health leader.

Michael Green



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Health in a Digital World



Angela Copeland
Cancer Care Ontario,
Digital Health Canada
Board Vice President
2018-19



Gillian Sweeney
Newfoundland and
Labrador Centre for
Health Information,
Digital Health
Canada Board Sec.
Treasurer 2018-19

We asked digital health professionals Angela Copeland and Gillian Sweeney for their perspective on the Canadian digital health landscape and the opportunities presented by digital health innovations.

Mediaplanet What potential do digital health innovations have to increase patient access, improve quality, and reduce costs?

Gillian Sweeney Virtual care has the greatest opportunity to improve health care by allowing patients to interact with providers through virtual visits using computers, smartphones, and monitoring devices. Virtual care facilitates secure communications between health care providers. Ultimately, it increases access for patients to health care providers and services, and allows health care providers to deliver care in a more efficient manner.

Angela Copeland For years, increasing patient access, improving quality, and reducing costs have been fundamental goals for the majority of health care providers. In my 20-plus years in this field, there has never been a shortage of technology innovations with the potential to accelerate the achievements of these goals. Nor has there been a lack of interest in investment in these technologies. Why have we seen so little

signed to solve isolated health care pain points. Although this provided temporary relief, it did not necessarily have a broader organizational impact, nor did it benefit the patient themselves. I recently attended a site visit of Humber River Hospital (HRH) in Toronto, recognized as North America's first fully digital hospital. HRH has been able to demonstrate significant performance improvements by combining data real-time and applying predictive analytics to continuously interpret how effectively patients are moving through the hospital. This cohesive approach to people, process, data, and technology working in unison is the breakthrough innovation that will change the future of health care.

MP How would you compare the uptake of digital health solutions in Canada to the rest of the world?

GS Canada has made great progress in the last two decades with the implementation of digital health solutions such as electronic health records and telemedicine, which has been utilized since the 1970s here in Newfoundland and Labrador, when the late Dr. Maxwell House started to use telephone technology to interact with patients in remote regions of the



tient-centric digital solutions and services.

AC It is no surprise that the United States continues to be the global leader in health technology development. However, Canada, the UK, China, and India are also making investments in digital health, as they realize the potential contribution to sustainable economic growth. There has never been more potential for fast uptake of digital solutions, because of the shift to consumer driven health care and the fact that most of the world's population now has access to a mobile phone and signal. Texts are being used to educate people and provide them with best-practice health information; test results can be quickly transmitted; specialists and patients can be connected even in remote areas; and anyone can maintain a personal health record wherever they go.

“ This cohesive approach to people, process, data, and technology working in unison is the breakthrough innovation that will change the future of health care. ”

impact on achieving these common goals? The answer is simple — technical solutions were independently developed and often de-

province. However, compared to our counterparts in Europe, for example, Canada is lagging and needs to increase access to pa-

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 **Digital Health**
CANADA

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Educate

The Future of Health Care Lies in Digital Transformation

Picture a health care system centred on all aspects of the patient's wellbeing — physical, mental, emotional, social, and spiritual.

In this system, precision interventions can get ahead of most diseases, most diagnoses can take place at home using sophisticated tests and tools, and patients own their health data. That's what Canada's health system can look like by 2040, according to the latest report from the Deloitte Centre for Health Solutions, entitled *Forces of Change: The Future of Health*. Key to achieving this new model of health care will be digital transformation and data liberation.

Benefits and barriers to digital consumer-centred care

"We have seen the benefits of delivering health care enabled by digital tools and methodologies in different global jurisdictions," says Mary Sanagan, Partner in Deloitte's Digital Care Practice and Digital Health Canada Board Member. "These benefits include faster access to services, better health outcomes, greater patient engagement, and reduced health care costs." Achieving these benefits requires a holistic approach, which considers the journey of a consumer across the health system, beyond the walls of any singular organization or physician's office.

However, certain structural barriers act as disincentives to realizing these benefits. "In Canada, the health care system is often set up to fund activities by organization or by provider, rather than following the patient journey," says Sanagan. This results in disrupted transitions in care and misuse of the system services. Additionally, in many countries there are not many incentives geared towards proactively reducing illness and disease. "They're much more focused on delivering care than on early detection and prevention, and changing the health culture," says Anatoli Zurablev, Head of Deloitte Digital Health and AI for Canada. As for digital technology adoption, many health care organizations are struggling with reduced budgets, and have little or no money to spend on innovation. "All of these factors make the provision of health care increasingly unsustainable," says Zurablev.

Digital transformation on a global scale

Technology can play a vital role in overcoming these challenges, and Deloitte is helping organizations around the world do just that



Mary Sanagan

Partner, Deloitte's Digital Care Practice and Digital Health Canada Board Member



Anatoli Zurablev

Head of Deloitte Digital Health and AI for Canada

by focusing on a few signature issues, such as providing easier access to health care, enabling care models focused on early screening, detection, and prevention, while bringing care closer to home.

"In New Zealand, for example, we're looking at new models of detecting cancer at earlier stages, as well as more effective patient engagement to reduce costs," says Zurablev. In Israel, Deloitte is working with Clalit, a health management organization, to deliver an integrated health care model across different touchpoints — primary care clinic, hospital, pharmacy, and health insurance provider. Furthermore, in the United States Deloitte is working with several organizations to change how Medicare is delivered for patients at home, including through virtual care, to provide better care with greater efficiencies and reduced costs.

Closer to home, Deloitte is helping Canadian organizations implement smart hospital enablers such as clinical information systems and shared back office solutions, helping re-imagine care delivery space, and working with the health care workforce to prepare for the disruptive elements of AI, digital platforms, and the tsunami of data. "As health care shifts from responding to illness to sustaining wellbeing, we must consider the impacts on the workforce in terms of role automation, augmented service delivery, and re-examine where and who can deliver services" says Sanagan.

As we enter the Fourth Industrial Revolution — at the intersection of machine learning, big data and innovation in the biotechnology and bioengineering spheres — there is a tremendous opportunity to change health care for the better through digital innovation. "Health care is one of the sectors that's going to be most impacted, and aspects of big data are going to play a significant role in how we optimize and deliver health care," says Zurablev.

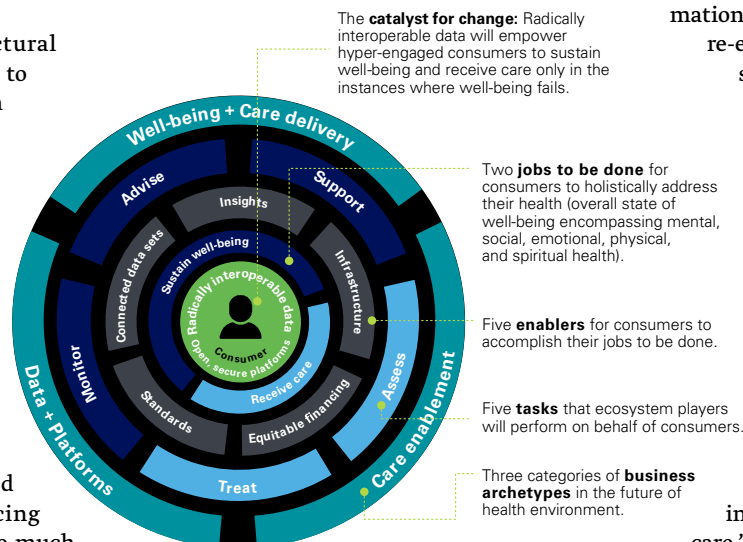
The challenges will be in the execution.

With a breadth of understanding of the complexities of digital challenges in health care, along with its extensive execution experience worldwide, Deloitte can be a valuable partner to Canadian health care providers, organizations, and consumers in making a successful digital transformation.

Anne Papmehl

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Tips to Create a Data-Driven Culture

Canada's health care system is expensive, representing 11.3 per cent of the country's gross domestic product (GDP). The growing infrastructure and personnel supporting that system also comes with an opportunity to utilize big data to ensure industry sustainability. Cerner Canada president Jim Shave weighs in with steps to shift to a data-driven culture.

1. Establish an environment with a tolerance for change

There's been a tremendous collection of data in the process of digitization of health care that we didn't have at our disposal before. Firmly planted health care stakeholders should be open to adopting that change, even at the grassroots level. But in order to do that, those at the top in leadership positions have to endorse and embrace it first.

2. Assess the data and analytics team's skills and tools

Technology's growing role in health care has made analytics and intelligence key to data collection and access. But it's no longer just about analytics. Current and newer visualization experts and consultants are entering the job market that would have the ability to handle the necessary technical transition to a system-wide, data-driven culture.

3. Shift from specialized to system-level thinking

With so much data available, accessing it should be viewed from a system-wide approach, not a siloed one. System-wide means coordinating intelligence across the continuum, including the patient from primary, specialty, acute care, and back out to the community or home health.

Ted Kritsonis

Cerner is focused on optimizing the patient's journey through the health system, from the time they enter the hospital through the discharge and subsequent placement across the continuum. Learn more at cerner.com/solutions/hospital-operations.

Digital Solutions Empower Family Caregivers

More than eight million Canadians are caregivers for a family member or friend with aging needs, a disability, or a long-term health condition. That number is expected to continue growing as Canada's population ages. Taking care of a loved one can leave family members stretched thin, and unable to juggle caregiving with their own daily life. Many feel the stress of racing to complete tasks, keeping on top of medications, and coordinating a circle of care around a loved one.

There are a number of programs and tools aiming to help tackle this challenge. One is the CareRelay mobile app, which helps caregivers coordinate help for their loved ones. Mediaplanet spoke with CareRelay founder and CEO Dan Brody about his story.

Mediaplanet *How did you come up with the idea for CareRelay?*

Dan Brody Shortly after my father passed away, my mother slipped and fell, hurting her ankle. She was an active, 66-year-old woman, and that accident really had a domino effect on her medical condition. Our family began looking after her, but I became her primary caregiver. I was carrying a huge binder with her medical information, appointments, and pick-up and drop-off schedules. As a "techie," I built my own small online management system for tracking tasks, appointments, and medications. That's really where the idea for CareRelay was sparked.

MP *What solutions does CareRelay offer?*

DB Our mission is to relieve stress and empower Canadian caregivers with reliable and accessible information. The CareRelay app is a collaborative platform that helps

How Technology Is Helping to Improve Diabetes Foot Care



Dr. Karen Cross
Co-Founder and
CEO, MIMOSA
Diagnostics



Dr. General Leung
Co-Founder and
Chief Technology
Officer, MIMOSA
Diagnostics

Dr. Karen Cross got the idea for MIMOSA while completing her surgical residency in Toronto. Her grandfather in Newfoundland — who has Type 2 diabetes — stubbed his toe and developed a serious foot ulcer. "Here I was, an expert in diabetic foot ulcers, and there was no way for me to make my expertise accessible to him," says the Co-Founder and CEO of MIMOSA Diagnostics.

In the meantime, Dr. General Leung, a physicist and now MIMOSA's Chief Technology Officer and Co-Founder, had been working on a more mobile and accessible technology for predicting heart attack and stroke. A blind coffee date between the two scientists led to a hallelujah moment. "The technology that I was using to predict heart attack and stroke was the same one Karen was using for wound prevention," says Dr. Leung. MIMOSA Diagnostics was born.

Foot ulcers, if untreated, can lead to amputations and even death for people with diabetes. The MIMOSA handheld

device can be used as a remote triage tool to determine which foot ulcer warrants immediate specialist care. "That streamlines not only the care process for the patient — but also the work process for doctors who treat them," says Dr. Leung. "By empowering patients and their caregivers with a device they can use at home, we're helping to save lives and cut costs," says Dr. Leung.

Anne Papmehl

Learn more about how MIMOSA can save lives and limbs by visiting mimosadiagnostics.com and signing up for their monthly newsletter.

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care teams communicate and coordinate help for their loved ones.

MP *How does CareRelay empower caregivers?*

DB We like to describe it as a tool for life project management. The app's AI helps schedule medical appointments, track medications and centralize patient records, while keeping everyone up to date on the patient's progress. But it also acts as an end-to-end wellness platform for all life events, even beyond health care. There's a function for storing legal documents, including estate planning and wills. There's also a financial module, where you can upload statements and capture caregiver expenses.

Melissa Vekil

To learn more about CareRelay, visit www.carerelay.com and download the app

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How One Company Is Making Health Care Convenient

Imagine being able to see the doctor of your choice at a time and place that is convenient for you. No more waiting for hours in a walk-in clinic, or weeks on a waiting list to see your family doctor. Thanks to virtual care technology and companies like Tia Health, now you can.

While millions of patients worldwide are taking advantage of virtual care solutions, Tia Health's philosophy is different from that of other providers. It believes in the

importance of a doctor-patient relationship and consistency of care. That's why you can choose the doctor of your choice. One who speaks your language and who you're comfortable with. And you can see the same one for all your virtual visits.

Putting patients first

Tia Health is bringing customer service to health care. It works on any device, and you choose a time that is convenient for you. You can have your appointment by video or phone. The doctors

are Canadian, and you'll feel confident knowing that patient data is encrypted and stored securely in Canada.

Many of us delay seeking medical care, because getting an appointment at a doctor's office isn't always convenient. Now we can get care when we need it and from any place. Prescriptions, test requisitions, specialist referrals, and sick notes are just a few of the things a Tia Health doctor can do for you — about 80 percent of medical issues can be solved safely and effectively

through virtual care, instead of requiring an in-person visit to a family doctor or clinic.

Tia Health is helping to change the way we access health care, and its reasonable prices (fees are covered for those who have a BC Health Card) will have you wondering why you haven't considered virtual care before.

Ken Donohue

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A Dose of Technology Is a Prescription for Better Health Care

There is a growing movement in Canada towards digital health solutions, and PrescribeIT™ is one example of how technology is helping to create a more efficient health system, with improved outcomes and a better experience for both patients and clinicians.

"PrescribeIT™ is an electronic prescription service created by Canada Health Infoway to eliminate the need for paper prescriptions and safeguard patient health data," says Dr. Rashaad Bhyat, Physician Leader, Canada Health Infoway. "Some doctors are handwriting prescriptions, others are printing from an electronic medical record, and others are still faxing prescriptions. PrescribeIT™ modernizes the prescribing process and gets rid of the paper and faxes."

Canada Health Infoway is an independent, federally funded organization dedicated to accelerating the adoption of digital health solutions.

Dr. Bhyat adds that with the traditional system of prescribing, there is a lot of manual entry at

the pharmacy, which increases the risk of errors, and reading a physician's handwriting can also be challenging.

Safe and secure

PrescribeIT™ was developed with input from regulators, physicians, and pharmacists and utilizes a cutting-edge authentication process to verify who is prescribing, giving added confidence in the security of data. For clinicians and patients, the process is seamless and convenient. The doctor electronically sends the prescription to the pharmacy of the patient's choosing. The only thing the patient has to do is pick up the medication.

PrescribeIT™ is currently available in three provinces, but the goal is for it to become a national prescribing system. "It's a very exciting time," says Dr. Bhyat. "Tools like this are allowing us to provide better patient care."

Ken Donohue

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An Innovative, Future-Focused Approach to Health Care



Arslan Idrees
Digital
Transformation
Officer, SE Health

families, caregivers, and care providers across the health care continuum. "We recognize we have much to learn and teach each

For over one hundred years, SE Health has been providing quality home care services to Canadians. Building on its renowned history, knowledge, and expertise, the social enterprise is taking an innovative and future-focused approach to health care by embracing digital health resources. "We're bringing forward bold new ways of thinking and approaches to problem solving, creating an environment that attracts the best talent and using solutions that will help us serve more Canadians in a cost-effective manner, all while providing top-notch patient and caregiver experience," says Arslan Idrees, SE's Digital Transformation Officer.

"We're streamlining access methods, focusing on open solutions, which makes integration easier with partners upstream and downstream," says Idrees. SE Health has also invested in engagement with patients,

other in order to achieve the goal of a frictionless experience for everyone," says Idrees.

Digital health in home care

SE Health is using technology and data to better support clients and their families in new ways. Elizzbot, launched by SE Health's family caregiver brand Elizz in 2018, is one example. This friendly chatbot provides emotional support, information, and comfort to family caregivers through an interactive online conversation. SE Health is also harnessing the power of voice technology, using a digital assistant to support the aging population through daily voice check-ins and medication monitoring.

Anne Papmehl

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New Digital Platform Offers Convenient Mobile Access to Health Care Providers

It's no secret that digital innovations have had a profound effect on how we live over the last few years. How we travel, shop, and consume media has been completely disrupted — in a good way, courtesy of companies like Apple, Uber, Airbnb, TripAdvisor, and Amazon.

But when it comes to accessing health care, that same digital revolution has been lagging behind. We still have to go digging for information on medical professionals and services, from dentists to mental health practitioners, who can help us. It's time-consuming and archaic — kind of like listening to cassette tapes in your car or having to drive to the bank to deposit a cheque.

There has to be a better way. Having access to high-quality health care is crucial to our wellness. It impacts our ability to earn

a living, to enjoy life and do the things that bring us joy. And yet the health care industry has lagged behind others in terms of offering digital solutions for connecting Canadians to the most suitable resources. Fortunately, that is now changing.

A better way to access health care providers

Canadians know Sun Life primarily as an insurance provider, but it's also a leading provider of employee benefits. It covers millions of plan members for essentials like prescription drugs, medical equipment/supplies, vision care, dental care, and paramedical services like chiropractors and massage therapists. That vast experience has provided valuable insight and connections to more than 150,000 health care providers.

Backed by Sun Life's comprehensive understanding of what Canadians need and expect, and ratings from verified Sun Life plan members, the company was inspired to take health care to the next level with the launch of Lumino Health. This unique digital health network makes getting the resources needed quick and easy with a one-stop shop. It takes a TripAdvisor-like approach, with a database that includes information on health care providers ranked by criteria such as cost, ratings, and location.

The other great benefit is that you can connect with health care professionals instantly to request an appointment, see if a provider is accepting patients, or find a new, top-rated meditation app.

Michele Sponagle

Making informed health-care decisions with help from Lumino Health, Canada's largest health network

150,000+
providers
across Canada

10 Million+
supported credible
ratings

100+
Innovative
health partners

Finding a health-care provider is as easy as

1.

Visit

LuminoHealth.ca

2.

Search

for a provider

3.

Request

an appointment

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Help your mom find the **care** she needs.

Connect with a **therapist** if you're not feeling like you.

And, request an **optometrist** appointment...
Like, *right now*.



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