Ministry’s Submission to Mr. Clark on Digital Health

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Cover Letter from the Minister of Health and Long-Term Care

Ontario's government is working to create a more integrated, patient-centred health system through the work outlined in the *Patients First: Action Plan for Health Care* and the proposed *Patients First Act*. Success will depend on the dedicated efforts of our health care providers, patients and caregivers, health system planners, and more. Success will also depend on how well we can share information and communicate and collaborate in modern ways to better support patients and their families. We know that digital technology will be a core part of that transformation, in much the same way that digital technology has fundamentally changed the way Ontarians bank, access other kinds of government-funded services, and communicate with friends and family.

This is why our government began investing in digital health technology over a decade ago, building the foundation that healthcare providers need to exchange patient information in a safe, secure and private way. We are realizing value from those investments today, but we know there is more work to do – to apply the full power of digital technology to the health system, to change it in the way other parts of our economy and society have been modernized. This is also why my ministry began working on a new Digital Heath Strategy over a year ago.

Creating a new strategy requires having a concrete, objective understanding of what we have today, and expert advice on how to leverage it. I asked Ed Clark, in his capacity as Premier's Business Advisor and Chair of the Advisory Council on Government Assets, to provide me with advice to inform my ministry's draft Digital Health Strategy. The following pages provide a key input to Mr. Clark's work, illustrating in more detail my ministry's perspective on the current state of digital health and our current thinking – informed by consultations with over 850 clinicians, researchers, patients and other health system stakeholders – on where we need to go next.

The recommendations made by Mr. Clark will be critical to refining our thinking on the Digital Health Strategy. Upon receiving his recommendations, I intend to release a refined and improved strategy policy paper for feedback by Ontarians. The discussion we will have will help further focus our strategy and provide the direction and input we need to implement it. I look forward to that discussion and working with Ontarians to make our health system one of the most integrated, patient-centred and sustainable in the world.

1. Building on a Strong Foundation

Key messages:

- Ontario has one of the largest publicly funded health systems in the world, with an annual budget of over $50B. We are working to transform our health system to make it more integrated and more patient-centred.
- Digital health – which is all about making important information available to improve patient care – is a key part of our work to transform the health system, and we already have a strong foundation to build upon.
- Digital health can do many things, from helping healthcare providers manage their practices to storing and sharing patient health information to enabling healthcare providers to better communicate with each other.
- Nearly every Ontarian who has interacted with the health system has health records that are digitally stored.

In Ontario, the Ministry of Health and Long-Term Care (the ministry) has a mandate to steward the health system – ensuring that it works well, is sustainable and is meeting the needs of patients and citizens. The province is covered by 14 Local Health Integration Networks (LHINs) which act as regional health authorities that plan, govern and fund the delivery of many of the health services, such as hospitals and home and community care, that Ontarians use every day. Some services, such as ambulances, public health and care provided by doctors, are managed more directly by the ministry.

Ontario's health system by the numbers

- ❖ Nearly 14 million patients
- ❖ Over 29,000 physicians
- ❖ Over 150,000 nurses
- ❖ 156 hospital corporations
- ❖ Approximately 7,000 paramedics
- ❖ 36 public health units
- ❖ 76 community health centres
- ❖ 200 family health teams
- ❖ 23 active community labs
- ❖ 22 ambulance dispatch centres
- ❖ 14 CCACs providing home care to 650,000 people
- ❖ 600+ long-term care homes with over 77,000 beds
- ❖ 500+ community mental health and addictions agencies
- ❖ Coverage of 3,800 drugs for 3.5 million public drug plan recipients

In its role as steward, the ministry sets overall strategy and objectives. In *Patients First: An Action Plan for Health Care*, we've set out a plan to transform the health system into one that is more integrated and patient centred. A core part of that work is investing in digital health. Digital health is all about information: making patient health information available to patients and healthcare providers when and where they need it. At the same time, Ontario is committed to being the most open, transparent, digitally connected province in Canada through our Digital Government strategy. Digital health will be an important part of that work, helping to provide services that are centred around Ontarians and consumers, not government or providers.

We think that information sharing and a relentless focus on the needs of consumers is a really important part of running any kind of modern organization. We think it's an especially important part of running a modern health system because well-informed decisions are crucial ingredients in high-quality patient care. As a result, Ontario now has hundreds of digital health assets that span every sector of our health system, helping us to achieve the objectives laid out in the *Patients First: Action Plan for Health Care.*

***Patients First* Objective**	**The Current Role of Digital Health**
Access: Provide faster access to the right care	Provide more options for **patients to get care** that is timely and closer to home
Connect: Deliver better integrated and coordinated care in the community, closer to home	Enable more **integrated care** that supports patients to live at home more independently with technology supports
Inform: Provide the education, information and transparency people and patients need to make the right decisions	Put the **right information** in the hands of patients, providers and other experts to keep Ontarians healthier, longer
Protect: Make decisions based on value and quality to protect our universal public health system for generations to come	Ensure a **financially sustainable public health system** with more efficient ways to deliver care

There are two big components of digital health that need to be distinguished:

A. Digital health systems, and associated costs, for running Ontario's health system as a whole (sometimes called "digitizing" records). These systems provide functions and value separate and distinct from the Electronic Health Record (EHR), and are essential to the operations of health care organizations and clinicians; and

B. The EHR which connects, or is planned to connect, some but not all of Ontario's key digital health systems to provide a consolidated view of a

patient's health information. Not all digital health systems in Ontario will be, or should be, connected to the EHR, as they do not contain data that is clinically relevant enough to share through the EHR.

Together, along with the right safeguards to protect patient privacy and the security of personal health information, these two types of digital health systems make it so that patient health information can be appropriately shared between healthcare providers when patients transition between care settings, such as when they're discharged from hospital or need to see a specialist. Protecting patient privacy is critical to the success of digital health initiatives, and Ontario's *Health Information Protection Act, 2016* defines requirements for anyone – including the ministry – who is handling, using or sharing patient health information in a way that ensure patients can depend on the safety and security of their data held in Ontario's digital health systems.

A. Digital health systems for running Ontario's health system as a whole include the front-line systems that healthcare providers use every day to manage appointments, run their organizations and store detailed patient records that go beyond the information that's included in the EHR. When Ontarians visit their doctor or have an appointment at a hospital, their care providers are most likely using front-line systems to make their visits safer, faster and more effective. For the most part, these digital health systems are bought, owned and run by individual healthcare providers such as hospitals and doctors' offices. Digital health also includes a number of specialized tools that help healthcare providers communicate and collaborate with each other, such as systems that send hospital reports directly to primary care providers or telemedicine – a secure form of videoconferencing used by healthcare providers.

B. Ontario's EHR has been created based on a common digital health "blueprint" developed for the provinces by Canada Health Infoway, the federal/provincial body responsible for investing in and guiding Canada's digital health agenda. According to Infoway's definition[1], the EHR is a secure, integrated collection of a person's encounters with the health care system, usually including:

- Laboratory test results;
- Diagnostic imaging test results;
- Prescription drug records;
- Immunization records;
- Systems to identify patients, providers and EHR users and protect patient privacy; and

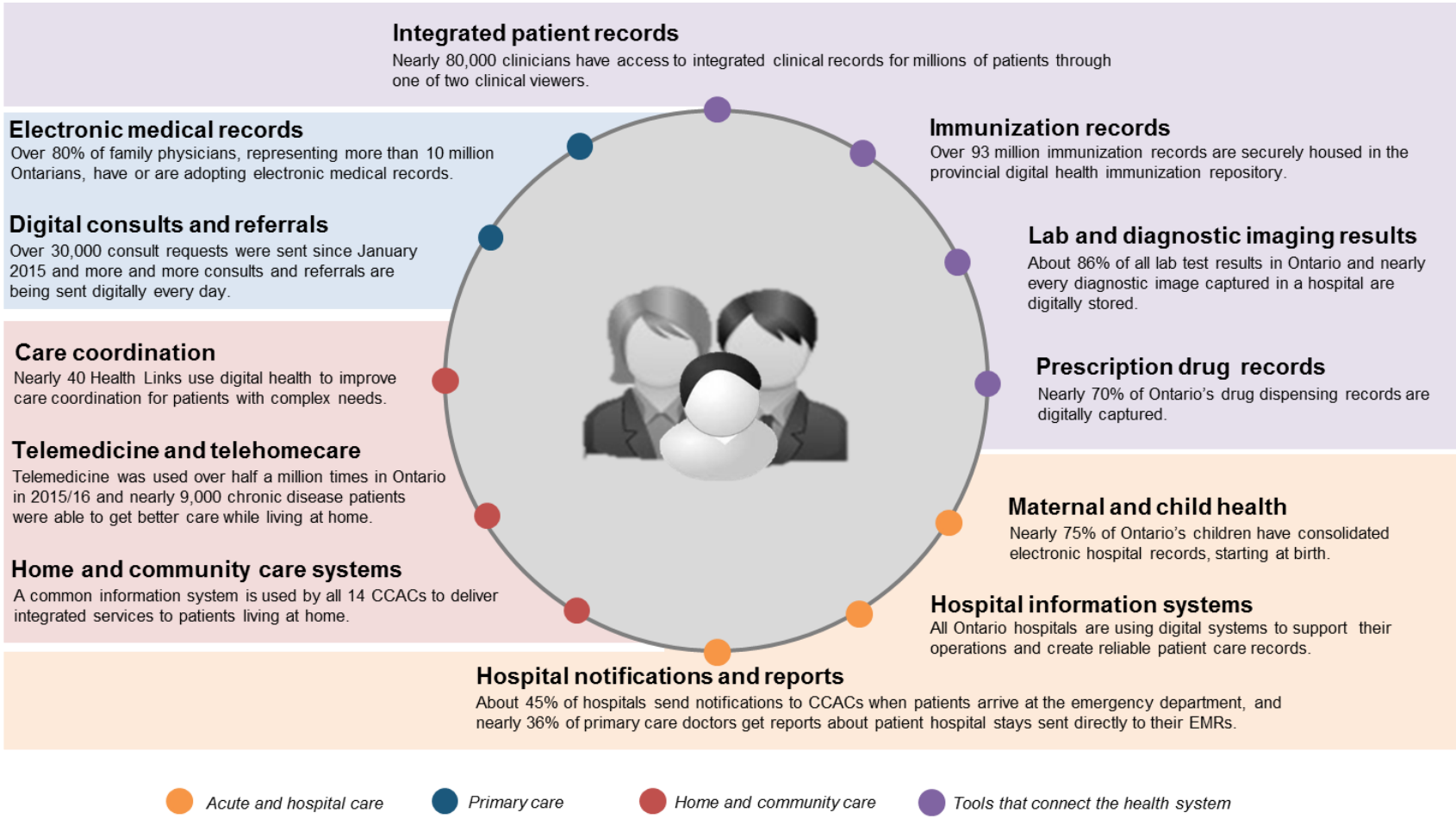
[1] https://www.infoway-inforoute.ca/en/solutions/electronic-health-records

- The infrastructure needed to ensure the information described above can be shared quickly, easily and securely (e.g. Connecting Ontario).

A snapshot of some key digital health assets is provided on the next pages (see appendix for a more detailed snapshot). Every day we see examples of how digital health and better access to information are improving patient care. One example comes from a recent event involving our public health information systems that helped avert a potential outbreak of measles:

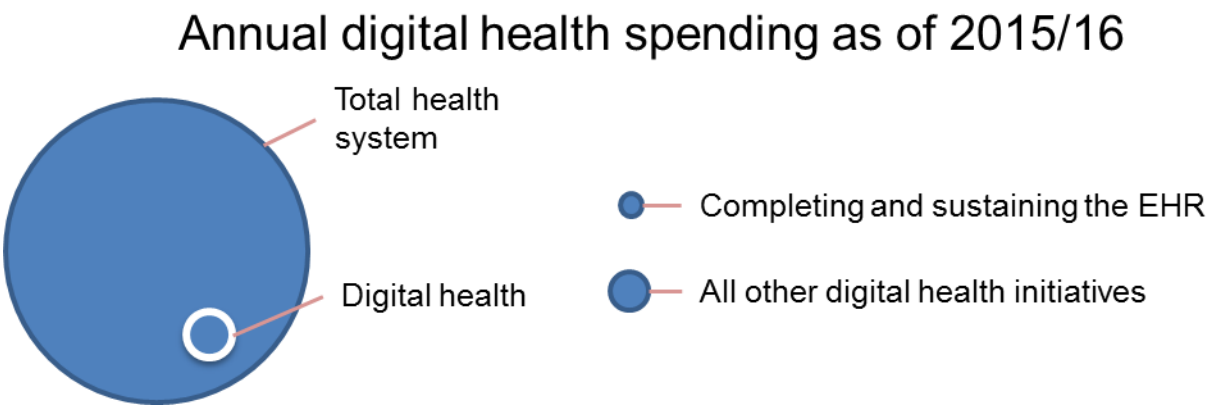
> *News of a positive measles test came at 4:45pm. Public health staff were able to use Panorama, a digital health tool for immunizations, to search over 1,400 records to find 25 students who may not have been vaccinated against measles.* ***Public health staff were able to contact those kids' parents and the school principal to help stop the spread of measles. This timely and accurate information would not have been possible previously.***

Snapshot of key digital health assets in Ontario today

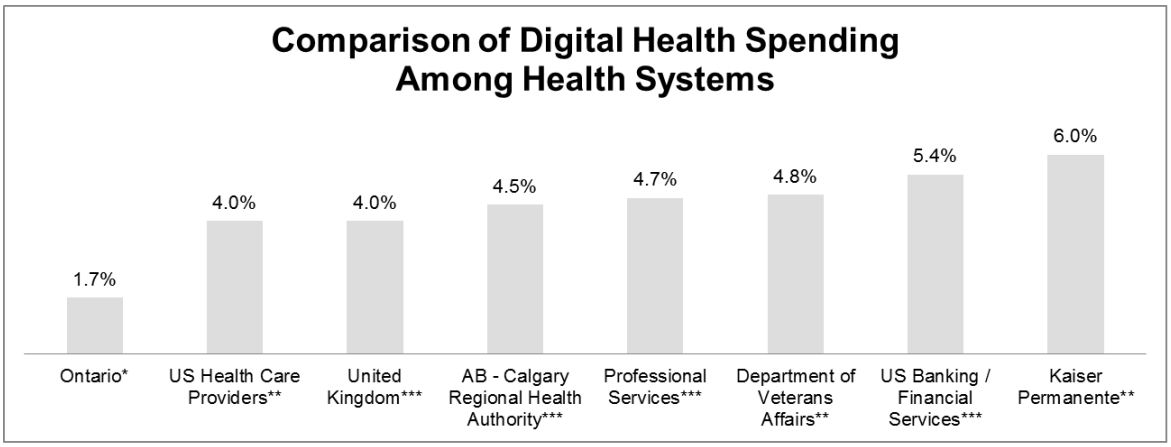


The strong digital health foundation that Ontario now enjoys is the result of investments made in many different parts of the health system over more than a decade. As described above, this ranges from creating and then operating the EHR to systems that help run Ontario's health system as a whole, such as front-line systems that our health care providers use every day, our telemedicine network, digital health tools used for cancer care and special digital health systems for pediatric care. Creating and implementing the EHR was an important undertaking and the result of approximately $1B in investment since 2008/09. An additional amount, approximately $2.2B, was invested to operate and sustain the EHR, along with a number of other activities of eHealth Ontario and its predecessor, Smart Systems for Health Agency (e.g. creating a secure email system for health care providers).

The amount noted above to create and implement the EHR was a one-time investment. Completing and sustaining the EHR, along with all of the province's other digital health assets, while also allowing us to build new ones that respond to evolving needs, requires ongoing investment. On an annual basis, this means that Ontario spends about $0.8B of its $50B+ budget on digital health each year. Some of that is spent on operating and sustaining the EHR and the majority is spent on all other aspects of digital health, including the front-line systems that health care providers use every day, our telemedicine network, and more.



Spending about $0.8B each and every year on digital health means we spend approximately 1.7% of Ontario's overall annual health system budget. While that may sound like a lot, it's less than the 4% - 6% of overall budgets that many other leading organizations spend on digital technology. That shows that Ontario is delivering great value in return for well-managed investments in digital health relative to other health systems, but it also demonstrates an opportunity to invest more to keep up with our peers.



* Ontario's percentage is calculated based on 2015/16 spending

** KPMG Jurisdictional Scan, completed for Ministry of Health and Long-Term Care

*** *EHR 2015 – advancing Canada's next generation of healthcare*, Canada Health Infoway

2. Value to Ontarians

Key messages:

- Digital health investments are generating value for patients, providers and Ontario's health system.
- Value has been demonstrated in a number of studies by Canada Health Infoway and others, showing big benefits from assets such as telemedicine and electronic medical records.
- While much value has been created in Ontario, more can be done to unlock the full potential of digital health.

The value of healthcare spending comes in many forms – faster access to care, improvements in patient health, more convenient healthcare experiences – that can be difficult to measure. One approach taken by Canada Health Infoway has been to try to put a dollar figure on these different forms of value. For example, a report that Infoway shared with the ministry earlier this year[2] said that Ontario's digital health investments in electronic medical records, telemedicine and diagnostic imaging yielded nearly $0.9B in value for Ontario's health system in 2015-16 alone.

While this analysis provides a helpful overall sense of the value of digital health, we know that value in the health system often can't be measured in dollars. The same is true of the value of digital health. Rather than talking about value simply in dollar terms, the ministry often considers four types of value from digital health based on how digital health can advance *Patients First*:

- **Value to patients** from having new ways of being able to *ACCESS* care, to *CONNECT* care teams to deliver more integrated care, and having more information available to *INFORM* decisions made by patients and their providers;
- **Value to the health system** from having tools and data that *PROTECT* it by improving the quality of care, research and health system planning that will;
- **Value to innovators and the economy** by creating demand for new digital health products that can be create, bought and sold; and
- **Value from commercial opportunities** created by exploring innovative relationships with other provinces, countries or third parties. For example, at

[2] Report from Canada Health Infoway. http://www.health.gov.on.ca/en/common/ministry/publications/reports/digital_health/digital_health_briefing_note.aspx

least one other province has already expressed interest in licensing Ontario's digital health immunization tools for use by that province's public health system.

The ministry, Infoway and others undertake studies called *benefits evaluations* when new digital health projects are launched to measure the value being created and to understand how to increase that value over time. The key results of a few of these benefits evaluations are summarized below – these aren't the only studies we could share, but they are ones that provide a clear picture of the value of digital health assets that exist in Ontario today.

What the study showed…	***…and what it means for patients***
Diagnostic imaging systems have been estimated to create a 30-40% improvement in test turnaround times, meaning that clinical decisions, and subsequent treatment of patients, can now occur 10-24 hours sooner.[3]	**Digital health means patients and their care teams can learn the results of diagnostic tests faster and make treatment decisions sooner.**
Electronic Medical Records are estimated to save physician offices 2 - 4 hours per physician per week on administrative tasks, freeing up more time for patient care, quality improvement and other higher-value activities.[4]	**Digital health means patients can benefit from care in doctor's offices that are more efficient and focused on patient care, not administration.**
Telemedicine saves travel and inconvenience for patients in northern and remote locations and reduces the environmental impacts of the health system, eliminating over 121 million km of patient travel in North East and North West LHINs alone.[5]	**Digital health means patients can get access to care in the communities in which they live, avoiding unnecessary travel away from home.**
The Emergency Neurosurgery Image Transfer System (ENITS) enables clinicians at any hospital in Ontario to send diagnostic images to neurologists for consultation. Before ENITS, 48% of emergency neurosurgery consults were	**Digital health means patients with urgent injuries can get access to specialized care regardless of where they live.**

[3] Report from Canada Health Infoway. https://www.infoway-inforoute.ca/en/component/edocman/resources/reports/330-diagnostic-imaging-benefits-evaluation-report-summary

[4] Report from Canada Health Infoway. https://www.infoway-inforoute.ca/en/component/edocman/resources/reports/benefits-evaluation/1224-the-emerging-benefits-of-electronic-medical-record-use-in-community-based-care-full-report

[5] Report from Ontario Telemedicine Network. "Ontario Telemedicine Network Final Year End Program Report, FY 2015/16". Received September 1, 2016.

What the study showed…	*…and what it means for patients*
referred or transferred to neurosurgical units. Last year, only 28.4% of patients were transferred after an ENITS consultation. [6]	
Preliminary studies of the telehomecare program have shown an approximately 50% reduction in emergency department visits and hospital admissions that are sustained until at least 6 months after patients are discharged from the program.[7]	**Digital health means more patients can live more independently at home with fewer unneeded hospital visits.**
A number of hospitals have started to use digital technology to make ordering medications safer and easier. One study showed that implementing a digital medication order-entry system reduced ordering errors – a major patient safety risk – by over 40%.[8]	**In both of these cases, digital health means patients receiving medications in hospital are safer and protected from avoidable errors and adverse drug events.**
In a study of 400 patients at a hospital using the Drug Profile Viewer, use of DPV and better inter-professional medication checking reduced the number of patients at risk of potential adverse events from 30 out of 100 patients admitted for elective surgery to 1 out of 100 admitted patients.[9]	
The majority of study participants who used a patient tool called MyChart at Mt. Sinai hospital agreed that it was valuable in enhancing how they managed disease and recover. Over 70% agreed that MyChart improved communication between them and their care providers.[10]	**Digital health means patients can have more direct access to their own health information and more convenient ways to talk to their care providers.**

The studies above show that most of the work done to date to measure benefits from digital health investments is about understanding value for patients and healthcare

[6] Report from eHealth Ontario.
[7] Mierdel, S., and Owen, K. (2015). Telehomecare Reduces ER Use and Hospitalizations at William Osler Health System. *Studies in Health Technology and Informatics*.
[8] Zamora, N., Carter, M., Saull-McCaig, S., and Nguyen, J. (2006). The Benefits of the MOE/MAR Implementation: A Quantitative Approach. *Healthcare Quarterly*.
[9] Fernandes, O. Report on use of Drug Profile Viewer to the ministry. 2016.
[10] Report from eHealth Ontario. Benefits Realization Update 2016.

providers. However, we are also starting to realize benefits related to the other types of value of digital health assets:

- By having access to EMR data, scientists at Ontario's Institute for Clinical Evaluative Sciences have been able to do new research that helps us better identify patients with diabetes, improve quality in primary care, and measure patient access to specialist care.
- The Narcotics Monitoring System (NMS) provides a powerful data platform to support providers and the province in ensuring narcotics are used appropriately. The NMS captures information about all dispensed narcotics and controlled substances (monitored drugs) which yields a complete profile of the prescriber (speciality, location, types and amounts of monitored drugs prescribed), dispensing pharmacy, and patient (demographic characteristics). Using this rich data, the ministry and others can understand drug dispensing patterns and associated harms like overdoses, support investigations, develop quality improvement strategies, and evaluate the impact of broad education efforts to reduce the overall rate of opioid prescribing in the province. The NMS ~~can~~ also enables focussed efforts to reach out to physicians and pharmacies in an effort to educate and change potentially inappropriate prescribing patterns.

Two further examples provided below show how we are leveraging past investments to improve care for Ontarians – and in some cases, other Canadians – today:

Using prescription drug information to improve patient care

The benefits of past investments are coming online as the benefits of digital health continue to expand. This year ***clinicians*** *for patients in the Guelph area will be able to* ***securely*** *see electronically all the* ***publicly funded and monitored*** *drugs that have been dispensed to a patient in any pharmacy in Ontario. This ability will help patients recall and clarify with their individual* ***clinicians*** *what medications have been dispensed to them; the healthcare system will no longer rely on a combination of fragmented systems and a patient's memory. The Guelph hospital, Guelph Family Health Team, and Community Health Centre are early adopters, and this important capability will expand into other areas of the Province during 2017.*

Benefits across the country from Ontario's leadership in digital health immunization technology

We know that our investment in digital health technology for immunizations is already generating value for Ontarians. And now we have evidence that Ontario's investments are ***now providing benefit to other jurisdictions, such as British Columbia****. The BC Centre for Disease Control has recently reported that a made-in-Ontario digital health asset is now helping BC public health authorities complete school immunization clinics nearly* ***16 hours per school faster*** *than before, with improved data* ***quality and security****. This means that* ***students can get immunized more quickly and efficiently*** *than before, freeing up valuable time for clinicians. Sharing technology between provinces is particularly helpful to Canadian families who may move between provinces and need to ensure children are appropriately immunized.*

These examples and more show how digital health assets are generating value for patients, providers and Ontario's health system. But we know there's more we can do to unlock the full value of digital health assets as we work to create a health system that is more integrated and truly patient-centred.

3. What's Worked Well and How We Can Improve

Key messages:

- Ontario has had both successes and challenges in digital health. Taking stock of these is an important part of developing a new digital health strategy.
- Lessons learned from Ontario's experience, and similar ones in other provinces and countries, are already improving how we deliver digital health. These lessons will also inform our new digital health strategy.

One of the most important responsibilities the ministry has as the steward of Ontario's health system is to understand what's working well and what we can do better, based both on what's happened in Ontario and also in other health systems around the world. The same is true with digital health, where we have over a decade of experience and where many other places have had similar experiences.

What Ontario has done well:

- Connect data and share it between clinicians, such as having nearly 86% of all provincial lab test results available to over 100,000 clinicians.
- Connect systems between different sectors to enable information to follow patients, such as the integrated records available to nearly 80,000 clinicians through connecting South West Ontario and connecting Greater Toronto Area.
- Provide local solutions that meet the needs of individual providers, such as the adoption of electronic medical records by approximately 12,000 clinicians.

What Ontario can do better:

- Give patients and families better access to information and innovative technology. We want to use technology to open up whole new ways of caring for patients, rather than just making small improvements to "business as usual".
- Help health care providers put the digital health tools that they already have to better use. We can do this in part by increasing the use of enhanced features that leverage existing data to improve clinical decision-making. For example, we could help primary care providers who want to provide better care for their entire roster of patients see dashboards of key indicators of patient health so that they could more easily order follow-up care.

- Do more with the data we have at a health system-level, such as using it for analysis and research that helps patients, providers and health system planners make better decisions that improve people's health.
- Design new projects to be simpler and deliver value early on, avoiding the kinds of large, complex projects that are more risk. We want to encourage new ideas and approaches to be tested early on so that when and if they fail, the financial impact is small and we can focus on learning how to improve.

The challenges that we have experienced are not unlike those of other leading health systems. For example, while many large health insurers in the United States now have mature digital health programs, they have only achieved that as a result of time, big investments and "course corrections" along the way. Kaiser Permanente, as one case, now conducts a large amount of primary care visits over videoconferencing. This has only been possible through major investments – approximately 6% of its annual budget goes to digital health – in technology, creating the right incentives for providers to use new technology and recognizing the failure of a major, near half-billion dollar project.

The lessons we've learned – whether it's to evaluate investments that are still in-flight and make course corrections, to focus on integrating digital health into the day-to-day work of healthcare providers, or to be more open to innovation and be less reliant on government-run projects – are already changing how we approach digital health.

Using prescription drug information to improve patient care

Through the Comprehensive Drug Profile Strategy, we are making patient prescription drug data available to clinicians. Our current strategy is different from the one we had in 2012 when we thought Ontario had to buy a brand new drug information system. We changed course when it became clear that buying a new system would be too expensive and too risky.

Now, with nearly 70% of drug dispensing records already captured digitally by the ministry's information systems, we are putting this information to better use through an incremental and much lower-cost approach. Starting in November 2016, following our live pilots, we will be making some of this information available to clinicians in south western Ontario. We will then continue to roll-out this data, making it available to more clinicians while also working towards having all drug dispensing records available.

This approach shows that we can give patients and providers the information they need without breaking the bank – a key commitment of our new digital health strategy.

Another great example of taking new approaches to get more value for patients out of existing digital health assets comes from the work of the Hospital Information System Renewal Advisory Panel (the Panel). Established in 2015, the Panel studied how to do a better job of sustaining the digital health assets of hospitals and ensuring that they

were generating the most possible value for patients. The Panel delivered a report to the ministry in 2016 with specific recommendations that, among other things, ask hospitals to partner together when renewing these important front-line digital health tools that are the backbone of a modern hospital. The recommendations, once implemented, are expected to free up over $1B in investment potential for Ontario's hospitals over the next decade.

With so much already built, we can shift away from simply building more technology and start leveraging what we have more strategically. We need a greater focus on patients, families and caregivers, and that requires new approaches. We need to do more to encourage innovation by opening up access to information responsibly. Combined with the right levers and supports for patients and health care providers, digital health will become so common as to be almost invisible: information will just be there when patients and their healthcare providers need it, and new ways of connecting would support and enrich the relationships between patients and their providers.

4. Putting Patients at the Centre of Digital Health

Key messages:

- A renewed vision for digital health is a core part of our *Patients First* work to transform Ontario's health system into one that is truly patient-centred.
- Achieving this new vision will require new approaches to digital health that are better suited to meeting the needs of patients and consumers.
- A new Digital Health Strategy will enable Ontario to leverage our digital health investments to bring the same kinds of advances that have changed the way we interact with our banks, shops and friends, and apply them to healthcare.

Ontario's government, through the *Patients First: Action Plan for Health Care*, is working to transform our province's health system into one that is truly patient-centred. While the digital health foundation that has been built to date has focused on sharing information between healthcare providers, our new approach to digital health will be a driving force of patient-centred transformation.

***Patients First* Objective**	**The Future Role of Digital Health**
Access: Provide faster access to the right care	**Open up access** to personal health information online and receive healthcare services in modern and convenient ways, such as through videoconferencing, email, telephone or text messaging, where appropriate
Connect: Deliver better integrated and coordinated care in the community, closer to home	**Connect patients** to health care teams, especially for patients with complex needs and their families, through more services delivered at home and in the community, such as supported self-care and digital home visits
Inform: Provide the education, information and transparency people and patients need to make the right decisions	**Help patients inform themselves** by accessing and using their digital health information, from test results to prescriptions and immunization records, to help make the best decisions about how to stay healthy and live well
Protect: Make decisions based on value and quality to protect our universal public health system for generations to come	**Protect Ontario's universal healthcare system** by pioneering new, more sustainable ways of delivering healthcare while managing the investment of taxpayer dollars in digital health as wisely as possible

Shifting our approach to digital health and strategically embedding it within the health system as a tool to modernize the patient experience won't be easy. Public sector organizations can be slow to adopt consumer-centric approaches when they aren't readily at risk of losing their "customers" to competitors. Even when leading organizations do adopt more consumer-centric approaches, it can be difficult to quickly spread those new ways of "doing business" to other organizations because so much of our health system is locally planned and governed.

Based on research, consultations with nearly 850 health system stakeholders over the last 15 months, and reflecting on our lessons learned with digital health, we think we can make progress on a consumer-centric strategy by adopting some simple guiding principles that have helped other organizations and health systems succeed.

- We think it starts by **adopting a "Digital Health by Design" philosophy**. This means that when the ministry, LHINs or healthcare providers create new health policies or programs, they specifically think about how to achieve their goals using modern technology and ask "How can we do it with digital health?" While this may seem like an obvious thing to do, it isn't so easy in practice. Digital Health by Design means everything from re-thinking how healthcare providers get paid (for example, lab tests in Ontario can only be ordered on a specific "form" and this may not be interpreted by some to include a digital version of a lab test order) to what's permissible under the law (until recently, all prescriptions had to be "handwritten" which precluded prescriptions from being purely digital in most cases). Digital Health by Design also means innovative new approaches to creating tools, and realizing that in some cases that means having to be more agile or open to failure – in a managed way – than we have been in the past.
- We know we need to **be innovative and open to new ways of doing things** to solve our health system problems while ensuring that innovations support the public interest and better engaging the private sector to help find, create and adopt innovative solutions. Much of this work is underway already through the work of the Office of the Chief Health Innovation Strategist (OCHIS).
- We also need to **build on what we have already and manage our investments wisely** by leveraging existing digital health assets as a starting point wherever it's helpful to do so and adopting ever-more rigorous approaches to portfolio management, evaluation and governance to ensure that digital health investments yield ever-increasing value.

Our current thinking about a new digital health strategy

The ministry has taken the inputs from research and consultations and combined that with the guiding principles described above to develop a draft of a new digital health

strategy. We are ready and excited to share this draft strategy and recommendations with Ontarians. The major themes and highlights are provided below to provide a brief summary of what the draft strategy proposes.

First, we want to open up patient access to health information and services. In keeping with our efforts to ensure Ontario is the most modern and digital government in Canada, we want patients and their families to be able to better participate in their own health by accessing their personal health information and healthcare services, from routine visits with their primary care providers to better management of chronic diseases, in new and more convenient ways. We will do this by implementing **Digital Health by Design** across the ministry and LHINs, working to ensure that digital health is fully integrated with programs and policies as they are developed. Part of the work will include identifying promising digital health solutions that are ready for investment today and make them available to patients and families who would benefit most. Along the way we will seek advice and input from the Information and Privacy Commissioner to ensure that patient privacy is protected as we advance digital health.

Second, we want to use digital health to strengthen quality, effectiveness and accountability in the health system. Providers would have the supports they need to continue to deliver high-quality patient care, and the health system would have the tools it needs to ensure it is both sustainable for future generations and accountable to today's taxpayers. To do this, we would:

- Continue to invest in digital health solutions that support providers, while also using new levers to require providers to use digital health tools and to require providers to contribute data to provincial assets where there's a strong case for improving the quality of patient care;
- Implement all the recommendations of the Hospital Information System Renewal Advisory Panel and continue to enable Local Health Integration Networks to foster partnerships that maximize the value of these important assets;
- Modernize accountability agreements with providers to further encourage the high-quality, digitally-enabled services patients want;
- Further mature the existing provincial digital health governance structure, led by the Minister through the Digital Health Board, and formalize its role in making funding recommendations on all publicly-funded digital health activities; and
- Create a single point of accountability for oversight and management of digital health funding across the major activities of the ministry, agencies and broader public sector organizations (e.g. greater than $5M) to ensure investments are coordinated, effective and aligned with health system priorities.

Third, we want to do more to stimulate innovation and growth in the digital health economy. We want Ontario to grow as a leader in digital health technology with a

vibrant market of innovators and leading-edge firms offering world-class solutions to patients. Growth in digital health would benefit the wider economy. While ensuring that patient privacy and the broader public interest is protected, we would help innovators access the data and technology they need to create new digital solutions that meet the standards for success. Using the right strategies to ensure promising innovations can be spread and scaled, we can benefit from transformative digital health approaches while reducing risks to taxpayers and opening opportunities to better inform patients.

What would this strategy look like in practice? What are the tangible opportunities to leverage our digital health assets? We know from other jurisdictions that strategies need to be grounded by a manageable number, probably no more than 10-12, of "signature projects" that will make a real difference in the lives of patients. We've proposed a few, select opportunities below that we think we can make progress on in the next two years, subject to what we hear from digital health experts and Ontarians.

- **Digital yellow immunization cards:** One way of adding value to digital health assets is to put existing information into the hands of patients. With digital yellow immunization cards, Ontarians could retrieve an electronic version of their own or their children's "Yellow Card" with full up-to-date immunization history. They would also be able to quickly and conveniently determine what immunizations they need in the coming months and enter new or missing immunizations online.
- **Online appointment booking and messaging:** Doing more with the front-line systems that are already in place will make them more valuable. Patients could be able to book appointments online and exchange secure messages with their healthcare providers through simple tools, such as online portals or email. Many of the solutions that enable these functions also make it possible for patients to view their health records, adding further value to this information.
- **Greater use of health data for research and analysis:** While we've noted the research capabilities that Ontario already has, there is much more that we could be doing with data that already exists. This could include expanding the amount of data available to ICES so that research can identified improvements on the full scope of patient journeys through the health system – from primary care to hospital visits to care provided at home and in the community.

The objectives, strategy approaches and opportunities described above are based on extensive research and consultation. But they are not set in stone. The ministry is looking forward to improving our current thinking to digital health through the recommendations that Mr. Clark will make and through the input that will be received when we consult with Ontarians on our draft *Patients First: Digital Health Strategy*.

Appendix

Existing Digital Health Assets

Core Infrastructure	Acute	Primary	Community	Other/Multiple	Consumer
•HIAL - Health Information Access Layer •One Mail •OLIS - Ontario Labs Information System •OneID •One Portal •Registries •Single sign-on •Consent and audit •DICS – Diagnostic Imaging Common Service •Clinical Data Repository •cGTA/cNEO Clinical Data Viewer	• WTIS - Wait Time Information System • POI – Physician Office Integration • HRM - Hospital Report Manager • SPIRE - South West Physicians Office Interface to Regional Electronic Medical Record • eNotification • TDIS -Timely Discharge Information System • Virtual Ward • Computerized Prescriber Order Entry (CPOE) for Systemic Treatment • ORN – Ontario Renal Network • Patient Order Sets • Cardiac Care Network • HIS – Hospital Information Systems • MyTOH	• BASE - Building Access to Specialists through e-Consultation • eConsult • QIDS - Quality Improvement Decision Support program • Hypertension Management Program • PFQ - Partnering for Quality • InScreen • ISAAC - Interactive Symptom Assessment and Collection • Central Intake • eReferral	• CHRIS – Client Health & Related Information System • HPG – Health Partner Gateway • RM&R – Resource Matching & Referral • Telehomecare • eShift • Drug and Alcohol Treatment Information System • Telepsychiatry programs (LHIN-led) • IAR - Integrated Assessment Record • Common Assessment Systems for Mental Health, Community Support Services, CCACs, and Long-term Care • Thehealthline.ca	• DPV – Drug Profile Viewer • Panorama • CCT – Care Coordination Tool • LHIN Collaborative Spaces, e.g. LHINWorks • eCHN – Electronic Child Health Network • BORN – Better Outcomes Registry & Network • Telemedicine • Telehealth Ontario • IDS – Integrated Decision Support • Regional Non-Urgent Transportation Application • SHIIP – South East Health Integrated Information Portal • HSP 360 BI Tool • Emergency Management Communication Tool	• SPARK
•cSWO program •cGTA program •cNEO program •Regional DI repositories •Clinical Connect	• Ambulatory EMRs • PRO – Patient Results Online	• CPCSSN - Canadian Primary Care Sentinel Surveillance Network • EMRALD - EMR Administrative Linked Database • Community Health Centre/Aboriginal Health Access Centre EMRs • Nurse Practitioner-Led Clinic EMRs • Public Health Unit EMRs • Primary Care EMRs - Electronic Medical Records • UTOPIAN – University of Toronto Practice-Based Research Network • Specialist EMRs • NORA - Non-Operational Reporting and Analytics		• Eclipse Portfolio Management Tool • IHF DI - Independent Health Facility Imaging and Archiving Tools • PMS - Pharmacy Management Systems	• OMAMA • MyCancerIq.ca • Cogniciti • MyChart • Medley • Medical question sites/apps, e.g. WebMD • Self-monitoring tools, e.g. FitBit • BREATHE • Bant • Medical information resources, e.g. UpToDate • Medical social networks • Communication tools, e.g. Medeo • PatientsLikeMe • Online/mobile care tools, e.g. ePocrates • Smartphone diagnostic tools, e.g. iPhone ECG

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