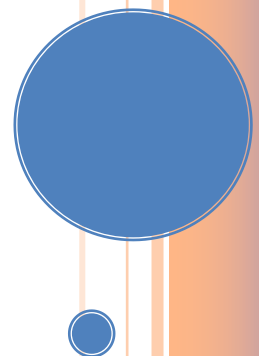# A Regional Approach to Maximizing the Value of Ontario's Existing Digital Health Assets and Future Investments:

Selected Themes and Perspectives from South West Ontario (SWO)

October 26, 2016

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1 Introduction and Background

Digital health (a.k.a. ehealth, health care information technology, etc.) has been seen by health care professionals and government policy makers as a cornerstone for a modern health system. Clearly, an integrated, multidisciplinary, community-based, patient-centred model of care requires an integrated information system that provides:

1. access to a patient's health information from across the continuum of care, and
2. solutions for:
   - enhancing communication and care coordination between providers and with patients;
   - enabling new modalities of care;
   - enabling patients to be involved and proactive in their health care;
   - enhancing decision support and performance measurement for clinicians and system managers; and
   - enabling innovation and dissemination of new and best practices at the front line of care and with patients (particularly in light of the emerging ecosystem of mobile and cloud-based clinical and consumer applications)

The first of these involves an integrated electronic health record and access channels such as portals, clinical viewers, and data download mechanisms. These are the initial focus of the digital health strategies of most jurisdictions because, in addition to providing significant clinical and system benefits on their own, they are the prerequisite to the broader array of digital health solutions required by patients and clinicians (listed above). They also represent a significant challenge. Although considerable personal health information is now captured and managed in digital form in point-of-service clinical systems, many thousands of these systems have been implemented independently by health service providers (HSPs) to various levels of maturity and in a non-standardized, unconnected manner (hospitals and primary care organizations are most notable). This has also resulted in significant variability in the quality and standardization of the data that is collected and managed by health care providers.

To this point in time, Ontario's eHealth Strategy and Blueprint has largely mirrored those of Canada Health Infoway, which were created ~17 years ago and focus on the electronic health record. The core of this approach was technology focused: architect, build and operate a massive, custom, province-wide, never-done-before system of data bases and integration services (i.e. health information access layer (HIAL) that would pull together personal health information from many thousands of front-line clinical systems. To date, several provincial repositories (e.g. Integrated Assessment Repository, Diagnostic Imaging Repositories, Ontario Laboratories Information System) and sector specific solutions (i.e. PANORAMA for public health, Client Health and Related Information System (CHRIS) for community care access centres (CCACs), Oncology Patient Information System (OPIS) for cancer care) have been created that demonstrably provide clinical and efficiency benefits (although they remain siloed and largely only accessible through

discrete, independent channels). However, it is increasingly acknowledged that after 17 years and significant investment, Ontario is still far from having the integrated information system the health system requires (including the prerequisite ability to share health information) and that the Infoway Strategy and Blueprint and eHealth Ontario's province-wide systems may not be the way to get there, at least in the short term. The reasons include:

- Ontario is simply too large and complex for a top-down, big systems approach to systems integration to succeed in a timely, cost effective manner.
- There are also the inherent risks of large, custom information technology (IT) system build and operate initiatives. This includes the ability to remain current and take advantage of technical advances and commercial innovations (which are continuing to progress rapidly in health care IT).
- It is not apparent that a business case exists to continue with this approach given:
    - the rapid advances that have been made in IT generally and the progress of commercially available digital health technologies and services more specifically; and
    - the successes that have been demonstrated by regional and local approaches that can subsequently be linked for the purposes of information exchange where necessary.
- It is also an imperative to address the long-ignored issues associated with the continued proliferation of unique instances of single provider, non-standardized point-of-service clinical information systems, beginning with hospital information systems.
    - Ontario hospitals represent ~75% of the provinces digital health capability;
    - The sector is on the verge of a major refresh of its clinical information systems (in the order of $2-3 Billion based on current trajectory); and
    - This represents an extraordinary opportunity for Ontario to significantly increase the value from its current and future digital health assets and investments from the perspectives of cost efficiencies, enhanced patient outcomes and health system integration.

South west Ontario (SWO) is a striking anomaly when compared to the rest of the province. Today, across the four local health integration networks (LHINs) in SWO, the ehealth landscape has matured and evolved to enable the implementation of a regional ehealth program. This includes:

- Current health information from across the continuum of care for 3.5 million residents is available at all points of care through the cSWO Regional Clinical Viewer, ClinicalConnect[TM], and the capability to download information into point-of-service clinical systems:
    - As demonstrated in, *Figure 1[1]*, more than 2700 health service provider (HSP) organizations and
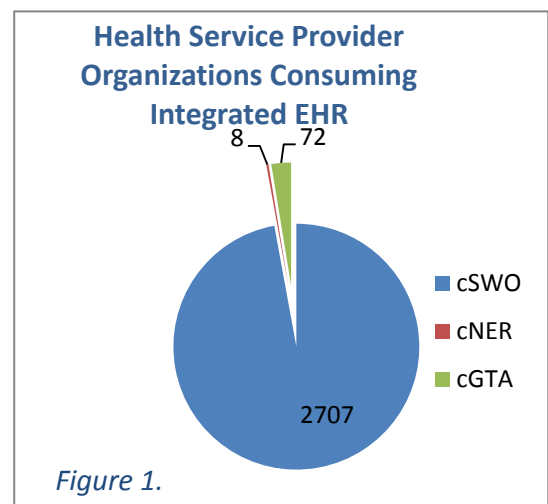
Health Service Provider Organizations Consuming Integrated EHR

8 — 72

2707

- cSWO
- cNER
- cGTA

Figure 1.

42,000 clinicians are registered for these services and currently access ~3 million health records per week; and

- o Significant clinical and health system benefits are being realized and documented through a best-practice change management program designed to drive adoption, meaningful use and innovation.

- A region-wide decision support system has been implemented to support health system planning and performance measurement.
- Hospitals are well down the path of "clustering" for the purposes moving to common clinical systems to facilitate enhanced patient outcomes, health system integration and economies of scale.
- The foundation has been created for rapidly adopting and utilizing a wide range of digital health solutions beyond the ability to access and share electronic health records:
  - o This includes a high level of readiness to integrate with, and deploy for immediate meaningful use, additional provincial digital health services as they become available (including eHealth Ontario's solutions for province-wide data sharing).

This has been achieved through a straight forward paradigm shift; a shift in focus away from creating a pan-Canadian or pan-Ontarian digital health electronic health record (EHR) and info-structure, to a focus on the urgent need to rapidly connect and enable information sharing among patient-centred communities of providers. (A shift that has been subsequently reiterated in the 2012 "Drummond Report"). In doing so, the technical complexities and challenges that are the focus of Infoway's and eHealth Ontario's blueprint are no longer a barrier; the digital health assets required to achieve the objective are commercially available and already exist in the province (local, regional, provincial; people, processes, technology, information), ready to be appropriately leveraged.

Accordingly, the near-term objectives for digital health in SWO have been:

1. Leverage existing digital health assets to rapidly create and deploy an integrated EHR and clinical viewer to communities of health care providers in support of urgent LHIN and HSP priorities, leading to early and measurable clinical and health system benefits.
2. Undertake the above with a view to establishing a sustainable, scalable, change-ready capability to address the broader and rapidly growing/changing digital health requirements at the local, regional and provincial levels on an ongoing basis.

By focusing on deployment and benefits realization, the immediate challenges needing to be addressed were not related to technology but rather related to governance, funding, strategy, and execution (i.e. planning, privacy and data sharing policies, alignment with clinical and business priorities, service and project management, HSP and clinician engagement, adoption, change management, meaningful use, benefits realization and benefits measurement). These challenges became tractable at a regional scale and were addressed by a systemic, programmatic approach, currently manifested as the connecting South West Ontario Program (cSWO).

The balance of this paper provides a background and rationale for the cSWO Program and the outcomes being achieved. It concludes with a selective summary of observations and recommendations for moving forward with maximizing the value of existing digital health assets and future investments in Ontario.

2 A regional approach makes sense for south west Ontario (and other regions of the province)

The benefits of digital health are only fully realized when the full circle of care of any given patient or community is connected and securely sharing personal health information. In SWO, patients rarely receive care outside of their LHIN or an adjacent SWO LHIN. Thus, the patient population and health care provider community of SWO represent a logical and meaningful scope for addressing digital health requirements. Furthermore, the challenge is also tractable with respect to size and complexity:

- there is a fair degree of homogeneity in the characteristics of the environment and health care system across SWO (SWO, Northern and Eastern Ontario(NEO), Greater Toronto Area (GTA) are quite different, each requiring an approach to digital health that reflects their uniqueness)
- a population of ~3.5 million, 69 hospital sites and ~3000 community-based health service providers is an appropriate size from the perspectives of feasibility and maximizing economies of scale

The adoption and meaningful use of digital health solutions such as an integrated EHR and clinical viewer is most successful (i.e. benefits are maximized) where communities of care providers have come together to collaborate on integrating or improving the quality of care for their patients. This is achieved by supporting these groups with digital health solutions that are aligned with their requirements and change management services that imbed the meaningful use of these solutions as part of the design and implementation of new models of care.

There are two common health systems transformation priorities across the four SWO LHINs that have activated communities of health care providers to come together to collaborate on change, thereby creating a strong regional business focus, demand, and clear set of requirements for digital health services:

1. Improve the transitions and pathways from acute care to community-based care; and
2. Establish integrated, multi-disciplinary, community-based care networks focused on high-needs patients (now referred to as HealthLinks)

Furthermore, these two priorities are significant from the perspectives of:

- enabling meaningful engagement with most clinicians and HSPs across the region;
- requiring a meaningful and substantial set of personal health information from the perspective of both contributors and users;

- establishing a governance tied to LHIN and HSP governance and accountabilities; and
- establishing targets and timelines and measuring outcomes and benefits

There are two large academic health science centres in SWO (Hamilton Health Sciences - HHS and London Health Sciences Centre - LHSC) whose service areas together span the entire region. More importantly, both organizations have long demonstrated leadership and a willingness to leverage their deep digital health capability and general IT capacity to provision digital health solutions and undertake the necessary systems integrations across SWO. The efforts of these organizations in driving early initiatives (i.e. Integrated Decision Support System; Diagnostic Imaging Repository) have created an environment of trust and experience with digital health collaboration among stakeholders in the region, the lack of which can be a significant barrier to progress.

3   The pioneering work of Hamilton Health Sciences with ClinicalConnect laid the groundwork to move forward with a regional approach to digital health in SWO

During the period that Ontario's EHR Blueprint and Strategy were emerging, there was significant demand for HHS to provide a new portal for affiliated physicians (hospital and primary care) to view hospital data. Using a commercial-off-the-shelf solution that utilized pragmatic integration solutions and did not depend exclusively on repositories and registries, ClinicalConnect was created as a "proof-of-concept" but quickly expanded to the other hospitals in Hamilton. The demand from physicians for additional information was immediate and CCAC information from CHRIS was integrated into the portal.

Because of the positive response from physicians, the Hamilton Niagara Haldimand Brant (HNHB) LHIN invested additional funds to integrate additional HNHB hospitals and deploy ClinicalConnect more broadly. Also, expansion into neighboring WWLHIN began with "innovation" funding from Canada Health Infoway. This forced "maturation by fire" in the region with respect to the complexities associated with governance, data sharing agreements, access policy and privacy policy and the importance of stakeholder engagement in arriving at workable solutions.

There was a high demand for ClinicalConnect among community-based providers. However, onboarding was quickly constrained by the capacity of a single, hospital-based team to fulfill the demands from all sectors across the two LHINS for processing applications, registering and credentialing users, undertaking privacy assessments and certifications, executing data sharing agreements and user training. It also became apparent that a focus on change management was needed to maximize the potential clinical and system benefits of ClinicalConnect. Resourcing and delivery models that span the continuum of care did not exist, and even today represent a challenge.

From these challenges came the recognition of the need for a regional, programmatic approach to sector-wide connectivity and information sharing (well beyond the technical capability which was well established at HHS). This was further reinforced by the growing demand to extend ClinicalConnect into the other two SWO LHINs.

At this point in time, eHealth Ontario began to formulate strategies and approaches to deploy the not yet fully developed and unproven provincial EHR solutions. The digital health leadership of SWO proposed the establishment of a regional digital health program and the continued expansion of ClinicalConnect (including the integration with existing provincial data repositories of valuable health information that were not readily available to clinicians), as this would:

- advance the government's commitments related to creating an integrated EHR for all Ontarians,
- create a ready environment for the deployment of provincial solutions and, most importantly,
- deliver significant clinical and health system benefits quickly.

The Agency initially rejected this approach citing that the technology underlying ClinicalConnect did not meet provincial standards and was not scalable. The architects of ClinicalConnect respectfully disagreed. However, it was successfully argued that achieving high levels of adoption (i.e. all the heavy lifting related to governance, registration, data sharing, privacy, change management) and the realization of clinical benefits were far more important than the technical issues the Agency presented. Furthermore, it was emphasized that any or all of the technical components of ClinicalConnect would be willingly replaced if more suitable solutions (those promoted by the Agency or others) became available.

In the Fall of 2012, after significant engagement with clinicians and health system managers from all sectors across SWO, the business case and implementation plan for cSWO was approved for funding by eHealth Ontario's Board of Directors. A summary and description of the cSWO Program is provided in Appendix 1, cSWO Regional eHealth Program Description.

4 Driving benefits realization through adoption and meaningful use of ClinicalConnect by patient-centred communities of health service providers is the core mandate of the cSWO program. The significant benefits that were anticipated are already being realized, measured and documented

As part of the cSWO Program planning and design phase, the Clinical Advisory Committee identified many benefits that can be realized and should be measured (summarized below in *Figure 2*). Evidenced-based,

conservative estimates of only four tractable benefits suggested that a positive return on investment (ROI) can be achieved in less than three years, post-implementation as indicated in *Figure 3*, below:

Figure 2. cSWO Program Benefits Framework

IMPROVED ACCESS:

- *Improve the breadth and depth of information available for patients across the continuum of care*
- *Better access to services through enabling improved navigation across the healthcare system*
- *Improved provider communications & care transitions across the continuum*

IMPROVED VALUE:

- *Improved patient and user experience*
- *Reduced duplication of laboratory & diagnostic tests*
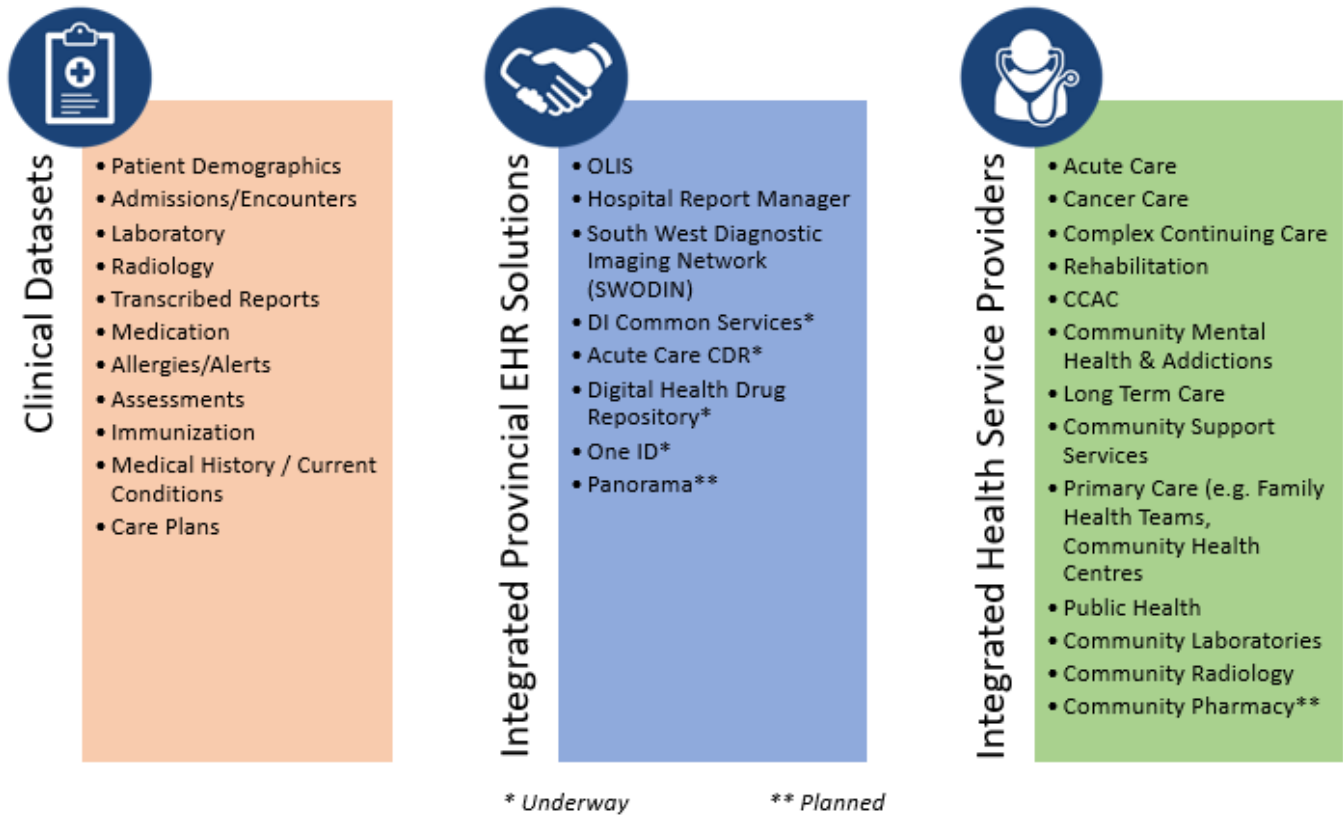- *possible cost savings*

IMPROVED SAFETY:

- *Improved access to important infection control information to protect clinicians and patients*
- *Fewer medical errors*
- *Reduced exposure to inappropriate and duplicate procedures/tests, medication errors, etc.*

Figure 3. Excerpt from cSWO Business and Implementation Plan (July 2012), Prepared by KPMG in consultation with cSWO Clinical Advisory Committee

#	Metric	Near-Term Savings	Post Implementation Estimated Annual Savings (conservative)
1	Reduction in Lab Tests	1.5% Reduction ($5,100,000)	3% Reduction ($10,200,000)
2	Reduction in Diagnostic Imaging Studies	1.5% Reduction ($5,600,000)	3% Reduction ($11,200,000)
3	Reduction in 30 Day Hospital Re-admission Rate	2% Reduction ($2,100,000)	4% Reduction ($4,200,000)
4	Reduction in time spent scanning records into EMRs (primary care)	25% Reduction ($5,500,000)	50% Reduction ($11,000,000)
	TOTAL	$18,300,000	$36,600,000

Providing access to a critical mass of clinically relevant health information is prerequisite to adoption and meaningful use. Clinicians have guided a significant and ongoing expansion of content available through ClinicalConnect (*Figure 4*):

Figure 4: Scope of information available to clinicians through ClinicalConnect

Clinical Datasets
- Patient Demographics
- Admissions/Encounters
- Laboratory
- Radiology
- Transcribed Reports
- Medication
- Allergies/Alerts
- Assessments
- Immunization
- Medical History / Current Conditions
- Care Plans

Integrated Provincial EHR Solutions
- OLIS
- Hospital Report Manager
- South West Diagnostic Imaging Network (SWODIN)
- DI Common Services*
- Acute Care CDR*
- Digital Health Drug Repository*
- One ID*
- Panorama**

Integrated Health Service Providers
- Acute Care
- Cancer Care
- Complex Continuing Care
- Rehabilitation
- CCAC
- Community Mental Health & Addictions
- Long Term Care
- Community Support Services
- Primary Care (e.g. Family Health Teams, Community Health Centres
- Public Health
- Community Laboratories
- Community Radiology
- Community Pharmacy**

* Underway   *** Planned*

Providing appropriate change management and adoption (CM&A) support is also fundamental to driving adoption and meaningful use. Significant change management adoption capacity has been established at the front line of care in SWO (~40% of cSWO Program implementation funding). An HSP was selected in each LHIN to become a cSWO CM&A Delivery Partner that had:

- demonstrated leadership in the adoption and utilization of ehealth solutions
- knowledgeable about, and active in the LHINs priority integration and transformation initiatives
- proven change management capacity.

These cSWO CM&A partners lead the full engagement life-cycle with HSPs in their LHINs, as they:

- manage initial engagement through to benefits measurement and assessment;
  - initial focus on communities of HSPs that are collaborating on priority health care integration/transformation initiatives. This is where readiness for adoption and potential for meaningful use is the greatest (e.g. HealthLinks),
- ensure that cSWO activities and services are aligned with each LHIN's priorities; and
- work with HSPs on ancillary challenges such as improving the quality and standardization of the data they collect and manage.

Each CM&A Delivery Partner also plays a role as a regional subject matter expert (SME) with respect to a specific sector (primary, community, acute, shared services)

Through its change management and adoption services, the cSWO Program has achieved the critical mass of adoption required to enable communities of HSPs to advance meaningful use and clinical transformation. Benefits evaluation is underway and will be ongoing. Evidence indicates that significant and pervasive benefits are already being realized.

The Benefits Realization Program (Figure 5) is formally integrated with change management and adoption. It builds on existing relationships with HSPs and is intended to identify and measure organizational and clinical benefits at both the individual HSP and broader HSP-sector and cross-sector levels. It includes:
- adoption/usage metrics
- usability/satisfaction surveys
- case development that explains how clinicians/staff use the EHR in their workflows and how access to information results in improved patient care
- surveys to assess how access to system-wide information improves clinical relationships across organizations.

This information is being used to:
- inform change management and adoption efforts,
- identify gaps and opportunities in the SWO EHR offering,
- support alignment of cSWO planning with Ministry of Health and Long-Term Care and LHIN priorities, and
- inform both the cSWO roadmap and the evolution of the provincial digital health services.

Figure 5: cSWO Benefits realization and measurement approach

Benefits Realization Cases
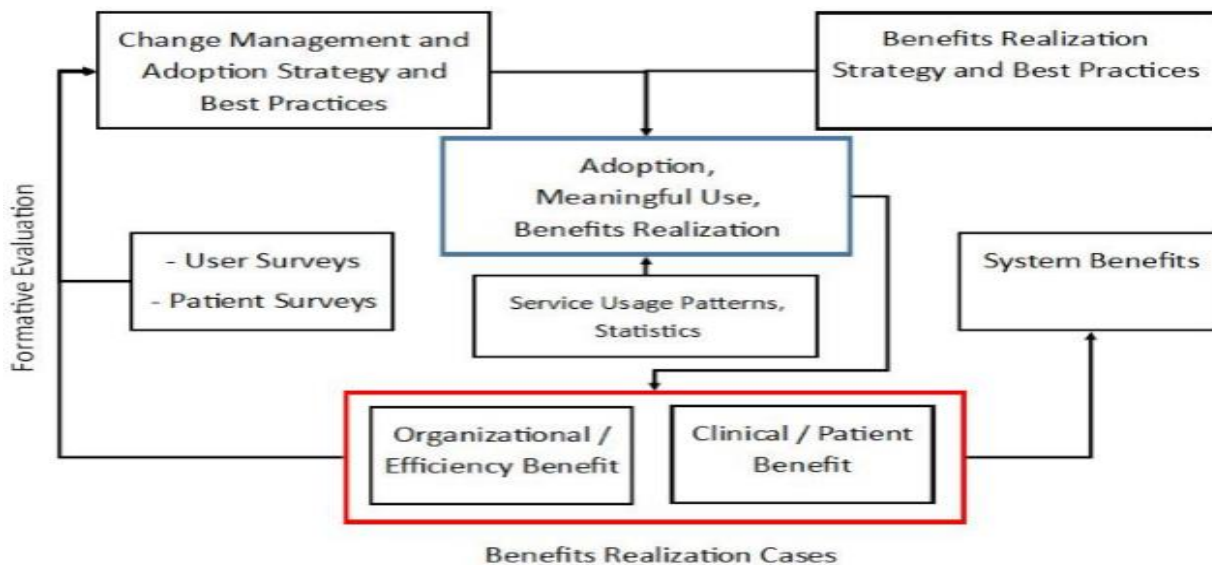
A sample of case studies illustrating how health service providers are using the data and information in ClinicalConnect to support clinical decision making to improve the quality of care and enhance patient outcomes is provided in *Appendix 2. Selected cSWO Benefits Realization Cases.* Several highlights from these are summarized below:

- Long-term care home
  - Significant year-over-year improvement in identifying patients returning from a hospital stay whose condition had changed and required reassessment, resulting in a modified care plan (from 18% to 74%). There was also a corresponding reduction in hospital readmissions (from 5.4% to 1.6%)

- HealthLinks Team
  - Implemented new processes for identifying high needs patients, developing multi-disciplinary care plans and coordinating care. This has resulted in a ~50% reduction of ED visits and hospital admissions.

- Emergency Department
  - Over a period of 9 shifts, it was determined that ~5-10% of cases were complex and required additional patient health information.
  - In almost all of these cases, the information available through ClinicalConnect was of clinical value.
  - In some cases, hospital admission and diagnostic testing were avoided.

- Secondary Heart and Stroke Prevention Clinic
  - 9% reduction in time to first visit for urgent cases
  - increase in referrals with prerequisite CT scan already completed (from 57% to 95%)
  - referrals increased from 77/month to 95/month without a need to increase staff

- Diabetes Central Intake Program
  - Have demonstrated the value of ClinicalConnect in increasing the number of patients with diabetes receiving care within the appropriate clinically-based wait time.
  - Also, contributes to improved accuracy. Tracking over a one month period showed usage changed the urgency of the referral (6), improved facilitation of specialist consult (6), and accelerated referrals to Diabetes Education (1).

- Community Mental Health- Early Psychosis Intake Program
  - Early treatment of psychosis is significant with respect to patient outcomes and health system costs.
  - Patients that are discharged from hospital after a first psychotic episode are now engaged immediately in the treatment intake process, which often did not occur for a week or longer because of the inability to access the patient health information required for assessment

Access to data and information through ClinicalConnect has also opened the door for clinicians and HSPs to tap into the burgeoning ecosystem of value-added digital health technologies and services. There is broad-based innovation occurring that the cSWO Change Management and Benefits Realization programs are just beginning to document and disseminate.

5 Selected observation for moving forward with digital health in Ontario in manner that maximizes the value of current assets and future investments

SWO and its cSWO Program are positioned to rapidly advance digital health beyond connectivity and data sharing. The foundation has been laid to address the broader set of requirements of patients, clinicians, care networks and LHINs. However, there is currently no context in Ontario for this progression to advance.

1. Ontario's emerging Digital Health Strategy must take a holistic, programmatic approach to digital health that goes beyond the historical emphasis on technology solutions (not unlike the role of Cancer Care Ontario with respect to Ontario's cancer system). Only when all dimensions of the challenge are addressed in a manner that engages all stakeholders at all levels can an integrated digital health system be achieved and the value of existing assets and future investments be maximized. This is a long-term journey that requires sustained focus and orchestration. Digital health must become a core competency of all levels of the health care system (including patients) that needs to be sustained and evolved on an ongoing basis in response to changing needs and new innovations.

2. The cSWO Program has demonstrated that regional digital health programs and regional service delivery are an effective means to:
   - connect and enable information sharing at a relevant scale (i.e. communities of HSPs that that serve a common patient population);
   - leverage, integrate and deploy local, regional and provincial digital health assets (including commercial-off-the shelf solutions);
   - ensure that digital health services are aligned with local and regional HSP and LHIN clinical and health system priorities; and
   - drive value and benefits realization through adoption, change management and outcomes measurement approaches that are:
     - focused on meaningful use,
     - imbedded within the front lines of health care delivery, and imbedded within the front lines of health care delivery, and

- o fully integrated with and supportive of priority clinical and health system transformation initiatives

Regional programs should be promoted and formalized as an integral part of Ontario's digital health strategy and program.

3. The design and evolution of Ontario's Digital Health Program should be done in conjunction with current and future strategic health system transformation initiatives of the Ministry, such as LHIN Renewal, Shared Services Restructuring, Health System Funding Reform etc., not only to ensure alignment and relevance, but to influence them with respect to the requirements of an integrated digital health information system and associated digital health program.

4. Although not discussed in detail in this paper, a strategic approach to the issue of point-of-service clinical systems can be a key catalyst in the evolution towards an integrated health information system. The significance of common/shared clinical systems for patient-centred communities of HSPs is increasingly being understood with respect to enhanced patient outcomes, health system integration, cost efficiencies/avoidance and establishing a robust, mature digital health operational delivery capacity (the reader is referred the recent HIS Renewal Advisory Panel Report). Specifically, hospital information system hubs have the potential to evolve into strong regional digital health delivery organizations capable of delivering services to all sectors.

5. Organizations such as Institute for Clinical Evaluative Sciences and Health Quality Ontario should to be fully engaged in Ontario's digital health program at all levels. The cSWO Program has highlighted the importance of the adoption-> meaningful use->benefits realization cycle to maximizing the value of existing digital health assets and new investments. Outcomes measurement and the establishment of evidence-base best practices are central to this value cycle. The same is true for separating the "wheat from the chaff" in the important and growing wave of local innovations that are being fueled by accessible health information and emerging technologies. Furthermore, the emerging integrated digital health system in general (and the movement towards common/shared clinical point-of-service systems) will facilitate the identification and adoption of best practice standards of care, which in turn will enhance patient outcomes, are often the more cost effective and reduce inequalities in access to quality care across the system.

6. The delivery of provincial digital health solutions and related technology infrastructure requires significant restructuring.
   - A frank and transparent assessment is required to determine if the current path of trying to connect the health care system and enabling information sharing (beyond SWO) using eHealth

Ontario's immature provincial EHR solutions is feasible: timely, cost effective and sustainable. If not:

- o does this "info-structure" have a secondary use such as bridging connected communities such as SWO and/or the growing portfolio of other provincial digital health assets/services (discussed below)?
- o the other regions of the province need to adopt an alternative solution (ClinicalConnect or any number of other commercial-off-the-shelf solutions) and focus on the heavy lifting associated with adoption, change management and meaningful use through local engagement of communities of health care providers

7. The technology infrastructure (networks, data centres, operating and support capacity etc.) that the province has invested in needs to be bolstered and brought to bear in support of regional digital health services and the consolidation of point-of-service clinical systems (Hospital Information System hubs in particular). Health care information systems require extremely mature operating environments from the perspectives of availability, reliability, serviceability, privacy and security. Few (if any) of the many technology centres that have been created within health care currently meet the required level of maturity (indeed, most fall frighteningly short). Given their high cost and scarcity of skilled resources, Ontario cannot afford multiple instances. Much of the required capacity exists in the private sector and needs to be leveraged.

8. In addition to eHealth Ontario's mandate, with respect to a province-wide EHR and integrating "info-structure", accountability for the delivery of a wider array of provincial digital health solutions and services is currently distributed across numerous organizations and are being developed and deployed in siloes. There is significant duplication of effort and inefficient use of scarce resources, including:

- o multiple instances of different technologies being implemented to address similar requirements,
- o multiple data sharing and privacy frameworks, and
- o parallel and un-coordinated deployment and adoption activities.

Even an advanced regional program such as cSWO has found it challenging to align these services into consumable offerings for clinicians and HSPs (particularly with respect to a rationalized, business driven approach to adoption, change management and meaningful use). This situation needs to be addressed if Ontario is ever to achieve a comprehensive, integrated and business-aligned set of provincial digital health services.

9. A renewed, programmatic approach to digital health in Ontario, including a strong regional dimension, would provide the governance and business context for a restructured digital health delivery model capable of:

- addressing the full scope of ehealth at all levels of the system (POS, DSS, Advanced Clinical, EHR, care planning/coordination, performance/outcomes measurement, patient/consumer services, population health, medication management etc.);
- engaging and aligning with strategies and priorities at all levels of the system;
- leveraging and maximizing the value of assets and investments at all levels – local, regional and provincial (larger organizations such as health science centres represent a critical mass that must be harnessed;
- enabling and supporting change management and adoption at the front lines of care as an ongoing activity with imbedded capacity;
- addressing the fundamental regional differences in health care delivery that exist in Ontario, as well as recognizing that the sheer size and complexity of Ontario's health care system makes a top-down approach to eHealth not tractable;
- supporting ehealth and health information management as a core function of health care delivery and health system management, at all levels involving all organizations; and
- enabling local innovation by clinicians and patients.

Figure 6: Illustration of a "straw dog" example of a provincial/regional coordinated digital health program/delivery model.
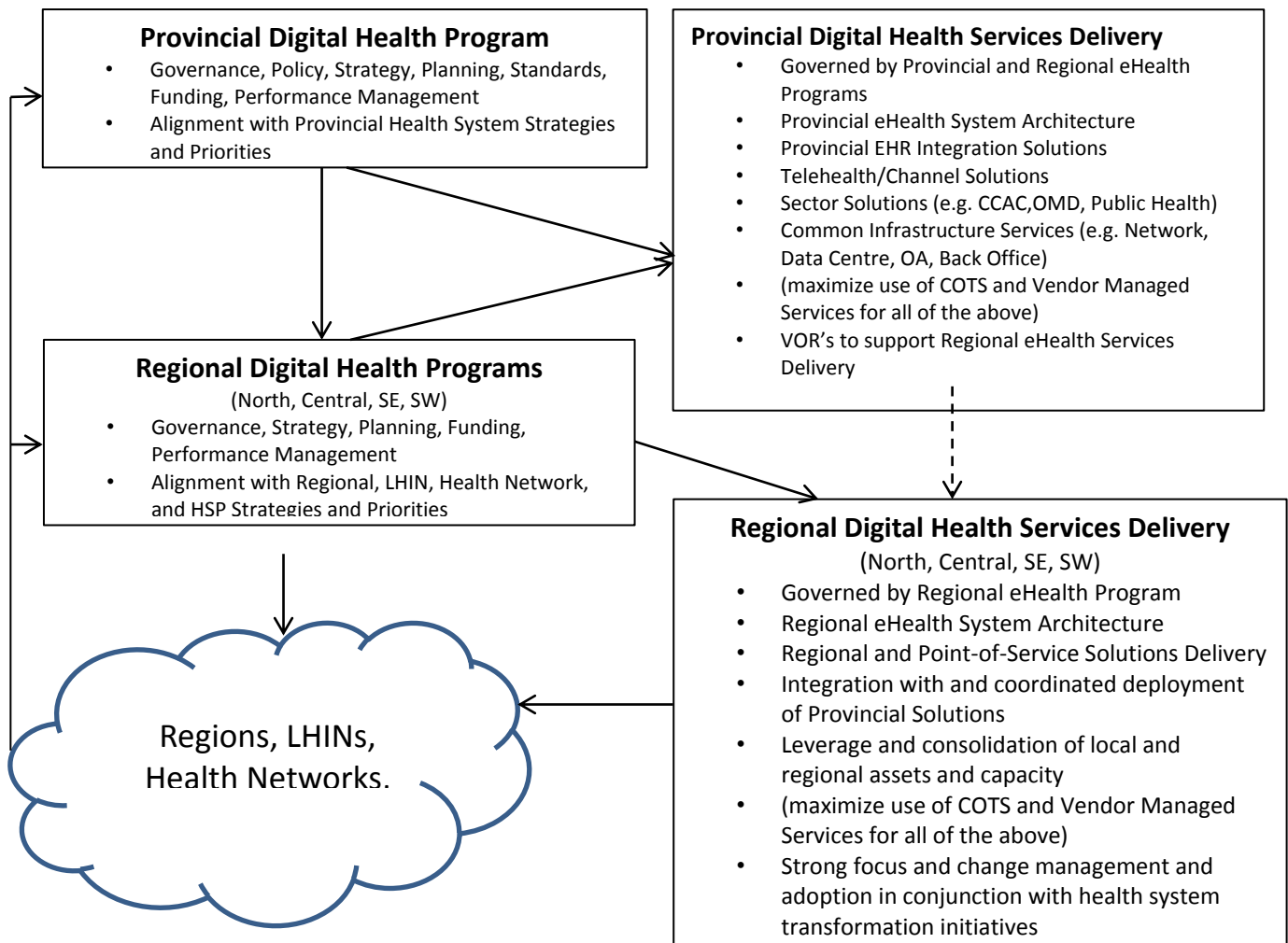
6   Appendix 1: cSWO Regional eHealth Program Description

This Appendix consists of the following:

1. cSWO Program Description - Fast Facts – Please double-click the icon below to launch the document:

Appendix 1 - cSWO
Program Description

2. cSWO Benefits Realization video: https://www.youtube.com/watch?v=HlRtO1jm7mo

3. cSWO benefits and testimonial videos:

   i.   https://www.youtube.com/watch?v=ChKblWwq_JI
   ii.   https://www.youtube.com/watch?v=7VCTy2lQwLU
   iii.   https://www.youtube.com/watch?v=g_uFEeucvCs
   iv.   https://www.youtube.com/watch?v=LPdb97RHmsg
   v.   https://www.youtube.com/watch?v=1DPlQWiRhKo
   vi.   https://www.youtube.com/watch?v=5neb6RJsfaU
   vii.   https://www.youtube.com/watch?v=hSzRpXB742k

7   Appendix 2: Selected cSWO Benefits Realization Cases

Please double-click the icon below to launch the document:

**Appendix 2 -
Selected cSWO BR C**

8   Appendix 3: Clinical Connect Description

This Appendix consists of the following:

1. Clinical Connect Overview – General Mar 2016 – Please double-click the icon below to launch the document:

    ClinicalConnectOve rview-General_Mar 2

2. ClinicalConnect Website: http://info.clinicalconnect.ca

3. ClinicalConnect training video:
    https://www.youtube.com/watch?v=NSmQU3PDfbU&feature=youtu.be

4. ClinicalConnect YouTube Channel:
    https://www.youtube.com/channel/UC2ptMpGav5wOXv0p_cKF45A