Provincial eReferral Initiative

Business Case

April 28, 2017 – v0.7

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1 Executive Summary

Background:

This business case considers options for introducing a framework for province-wide, interconnected electronic referral.   Access to specialists is an ongoing challenge for community-based primary care providers in Ontario. eReferral solutions have been emerging across the province to help providers find the right match of specialist expertise, availability, and location for their patients' needs. Locally-driven initiatives (within a region or health care centre, for example) may be effective for the short term, but the proliferation of systems across the province will create a downstream problem – especially in the context of new pressures for health system integration spurred by the *Patients First Act*.

This period of change presents an opportunity to develop a coordinated approach that protects the diversity of locally-driven solutions while supporting system-wide integration. **The goal of the Provincial eReferral initiative is to allow clinicians from across Ontario to electronically initiate, receive and manage specialty care referrals.** Referral patterns are often cited by Local Health Integration Networks (LHINs) as a factor in the configuration of their sub-regions. In practice, to secure the best outcomes for all patients, referrals are not (and should not be) limited by local boundaries. Given the

> Dr. Enrico Coiera has likened the broader health care system to the human body: "If information is the lifeblood of health care, then communication systems are the heart that pumps it."[1]

number of existing eReferral solutions and services, the challenge is how to leverage these investments, create alignment with foundational assets for digital health interconnectivity, and deliver quick wins as part of a comprehensive longer-term strategy. Success is dependent upon both change management principles and technical efforts. This proposal recommends the establishment of a set of provincial eReferral Shared Services governed by a partnership of regional stakeholders, and managed within a standards-based framework.

Recommendations:

This analysis articulates five key recommendations for eReferral in Ontario:

1. **Existing eReferral systems, as well as the related digital health systems and services** across the landscape that support and enhance clinician communications and interconnectivity, **are valuable resources that must be leveraged to their greatest extent**.

2. The **initial implementation focus must be on foundational elements that weave in connectivity, consistency and alignment**. Integration through a provincial health information exchange, a reliance on standard integration and registries, and a valid governance and standards framework will **ensure long-term scalability and sustainability** of this provincial asset.

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[1] Coiera E. *Communication systems in healthcare*. The Clinical Biochemist Reviews. 2006;27:89–98

3. Regional, local, and discipline-specific variances exist for a reason, but they cannot be permitted to impede provincial connectivity and impact patients' timely access to specialty care. Through standards and representative governance**, implement one coordinated approach for the province that supports variations that cater to specific needs**.

4. Recognize that **any successful eReferral initiative in Ontario depends on effective change management and adoption**. A "build it and they will come" philosophy will not suffice.

5. Disruption breeds resistance. **Focus on quick wins** for patients, providers, and all system stakeholders **to set momentum and ensure ongoing support**.

Outline:
This business case describes the problem of referral in the Ontario health system context, and why this approach to eReferral has been identified as a preferred solution. Opportunities for existing investments in digital health infrastructure to contribute to the *Patients First Action Plan* and align with the *eReferral Provincial Reference Model* are prioritized in this assessment to advance benefits to patient care through an efficient and rapid uptake of eReferral services. As a prerequisite for success, this document contemplates partnerships and stakeholder collaboration between OntarioMD, LHINs, eReferral system vendors, Electronic Medical Record (EMR) vendors, provincial health service providers and physicians. A current state analysis reveals gaps and the plans to address them inform the foundational requirements and guiding principles of an eReferral service for the province. Finally, the proposal presents a vision for an attainable future state and a strategy to achieve it including high-level considerations for project planning, risk management, cost, governance, and sustainability for the long term. This business case endeavours to present the imaginable future wherein patients, their providers, and the broader health landscape all benefit from the advantages of an integrated eReferral ecosystem built on a set of shared services.

2 Opportunity

2.1 Clinical Perspective: Needs and Benefits

Two years after the Alberta Health Service introduced a pilot eReferral program, more than two-thirds of clinical users said that "eReferral has improved the quality of care and continuity of care"[2]. This business case provides a proposal to ensure that patients in Ontario benefit from these same opportunities for safe, high quality care, through a provincial strategy for an eReferral solution that leverages existing investments and recognizes the clinical drivers for digital health initiatives with corresponding services to support best use.

> When **more than two-thirds** of clinical users say that **eReferral has improved the quality of care and continuity of care**, that's when you know you must be **doing something right.**
>
> - Dr. Allen Ausford

2.1.1 What is an eReferral? What are the benefits?

It is generally understood that a referral involves one health care provider requesting a service, care and/or support for a patient from another health care provider. In the most fundamental terms, an eReferral simply directs this request through electronic means. More specifically, "eReferral" has been defined as "a Referral made in an electronic fashion including the exchange of information between health care providers coordinated through a referral service."[3]. The idea of an *information exchange through a referral service* implies a fundamental shift away from the existing, disjointed manual processes, and toward an integrated solution that supports open communication among providers and a collaborative approach to delivering care to the patient, coordinated with the patient. To be clear, a comprehensive eReferral service is not a technologically enhanced parallel to existing fax-based processes, but rather an enhancement to the patient care journey that injects value to both patient and providers. This document proposes a roadmap toward a coordinated implementation of specialty care eReferrals across all the LHINs in Ontario. A first step in this journey is an eReferral solution that comprises a number of key components, as per Figure 1.

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[2] Alberta scores success with e-referral pilot program. Canadian Healthcare Technology, May 2, 2016; by Gary Folker
[3] eHealth Ontario, eReferral Specification, Interim Release, June 18, 2010

Integration with existing electronic services and systems (e.g., EMRs, eReferral platforms) to encourage ease of use;

Structured referral pathways to ensure that appropriate specialists / sub-specialists are engaged, comprehensive information is provided and investigations are completed prior to the appointment;

Tools to better coordinate care by managing and understanding patients' extended care teams, including clear recognition of the responsibilities of each provider;

Secure communication mechanisms linked to patient referral records which facilitate timely access to care by addressing additional information requirements and also promote a satisfying experience for providers as they determine in consultation how best to address patients' needs.[3]

Figure 1: Key components of an eReferral solution

Better access to appropriate specialty care and better coordination and communication among care givers are anticipated to lead to better patient outcomes and safer care. For patients, access to specialists may be accelerated by providing the referring clinician with the full spectrum of available resources. Patient anxiety while waiting for a follow-up appointment may be reduced through more clarity and better understanding of timelines and specialist responsiveness. Additionally, specialty appointments may be more productive with less risk of avoidable adverse events when appropriate and comprehensive preparation activities are fully understood and undertaken in advance of the appointment. Through these eReferral services, the burdens on patients to navigate the complex paths of the health care system will be reduced; patients will have their guides.

For referring clinicians, the benefits of using an enhanced and integrated eReferral service go beyond the satisfaction of delivering the best possible care. The right tools will provide referring clinicians with increased ease in determining the most appropriate specialist for a given issue, and a more streamlined approach to initiating a referral successfully the first time – without subsequent interruptions to address missing information and incomplete preparation/tests. Further, the capability to check in on the status of a referral (e.g., whether the patient has been seen) will permit referring clinicians to structure follow-up visits more efficiently and proactively, for the best possible patient care.

In addition to these primary focal points of any eReferral initiative, it is logically expected that system costs will gradually reduce over time as patients get appropriate care sooner, before conditions degrade and worsen. Treating more serious conditions is more expensive than preventive care.[4] While this business case does not propose eReferral based on a clear return on investment, it is important to recognize that system-oriented financial benefits may accrue nonetheless. A detailed literature review

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[4] Health care vs. sick care: Why prevention is essential to payment reform. The Boston Globe April 2, 2012. Menino, Thomas M and Johnson, Paula
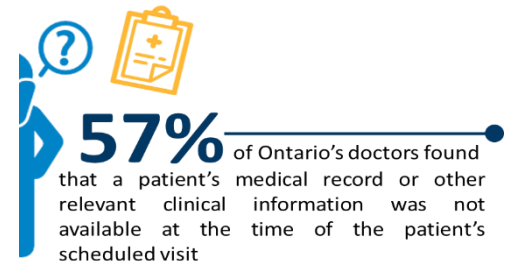
was conducted as part of the business case development which further demonstrates the benefits and costs savings of eReferral in Appendix F: Literature Review.

2.1.2 Why does the current state in Ontario need to change?

A patient's story:
I visited my family doctor in early August about an issue that had been troubling me for several months. My physician recommended a referral to a specialist, and the referral letter was faxed over before I left the office. In mid-September, I called my doctor's office as I hadn't heard anything from the specialist. I was told that my doctor was still waiting for a response and the office would call me as soon as they heard back. I followed up again in October and was told the same thing. At the beginning of November, I was back at my doctor's office for this same issue, and as we went through my record in the EMR, my doctor stumbled across a copy of the referral letter which had been faxed back from the specialist, with a note attached identifying next steps. The date of the fax response was August, and here I had been waiting more than two months since that response because the referral response was missed.

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Paper-based, manual referral processes, largely dependent on fax communications, are not only cumbersome for providers, but can also delay proper diagnosis and timely treatment, jeopardizing patient safety.[5] [6] Specialist clinics that receive referrals through faxes face challenges as referrals arrive late or are lost, are sent to the wrong providers, or are simply incomplete. These disruptions between referrers and specialist providers undermine the quality of care delivered to the patient. In addition to these frustrations and wasted

57% of Ontario's doctors found that a patient's medical record or other relevant clinical information was not available at the time of the patient's scheduled visit

efforts, providers risk medico-legal liability as a result of the existing, inefficient referral practices.[7]
For routine referrals, most physicians refer to specialists they already know. Indeed, the ability to identify other physicians for specialty care is "one of the most privileged pieces of information" that a physician knows. However, "the problem with [asking your doctor] is the answer will most likely be a colleague in the same hospital, which is rarely the right answer. Physicians stick to their own specialty, so it would be quite unusual for any doctor to know the national authority in a different discipline."[8] In addition, the increased need for patient access to a broader range of specialists and sub-specialists, taking into consideration geographic constraints on access, makes it challenging for providers to be aware of another specialist's services, availability, and his or her specific referral protocol and information requirements. This hampers the ability to match specialist services to the patient need the first time.

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[5] Deficits in communication and information transfer between hospital-based and primary care physicians. Implications for patient safety and continuity of care. JAMA 2007; 297(8):831-841. Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW.

[6] Comorbidity and the use of primary care and specialist care in the elderly. Annals of Family Medicine 2005; 3(3):215¬222. Starfield B, Lemke KW, Herbert R, Pavlovich WD, Anderson G.

[7] Guide to Enhancing Referrals and Consultations between Physicians, The College of Family Physicians of Canada and Royal College of Physicians and Surgeons of Canada, October 2009

[8] The Creative Destruction of Medicine. Topol, Dr. Eric. Basic Books 2012.

Notwithstanding these recognized deficits in communications methods and appropriate referrals matching, the number of referrals to specialists in Ontario is increasing.[9] Figure 2 illustrates common referral issues experienced in today's manual process.
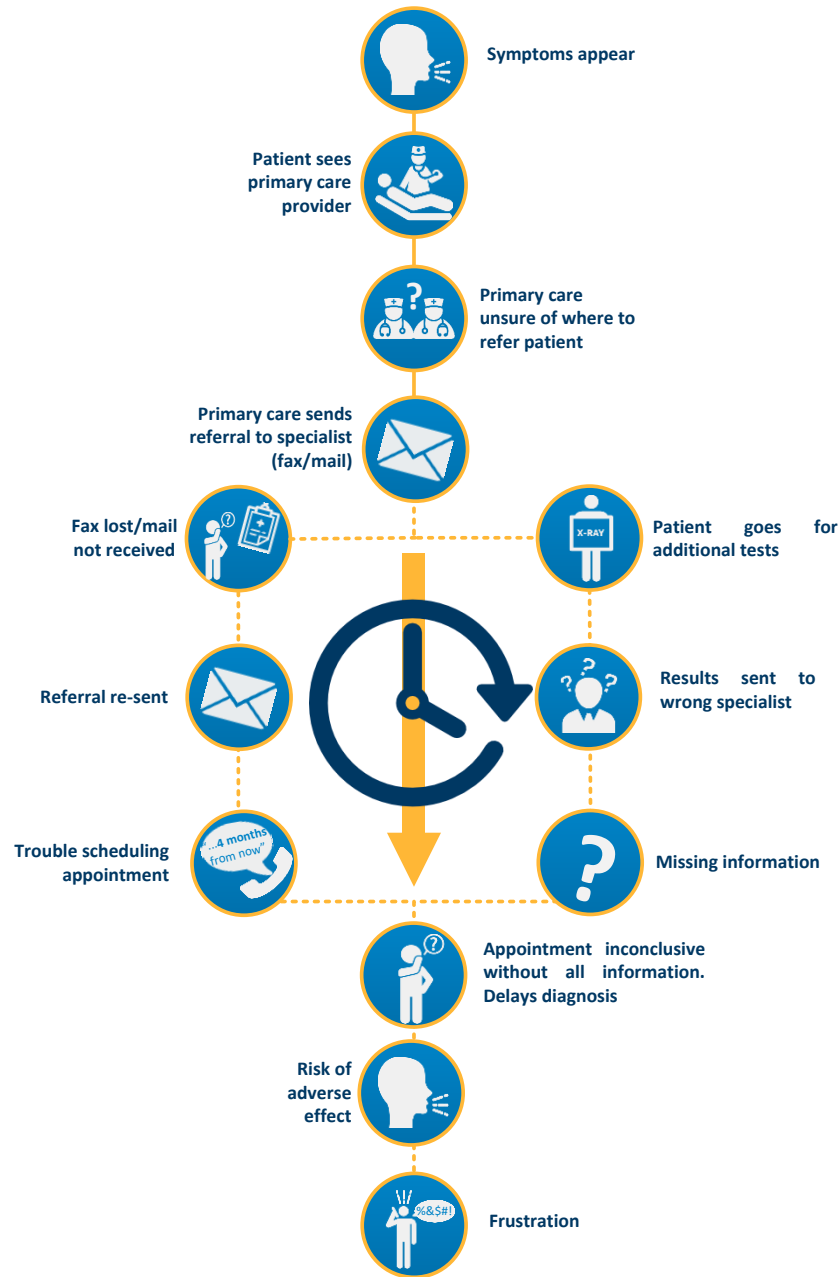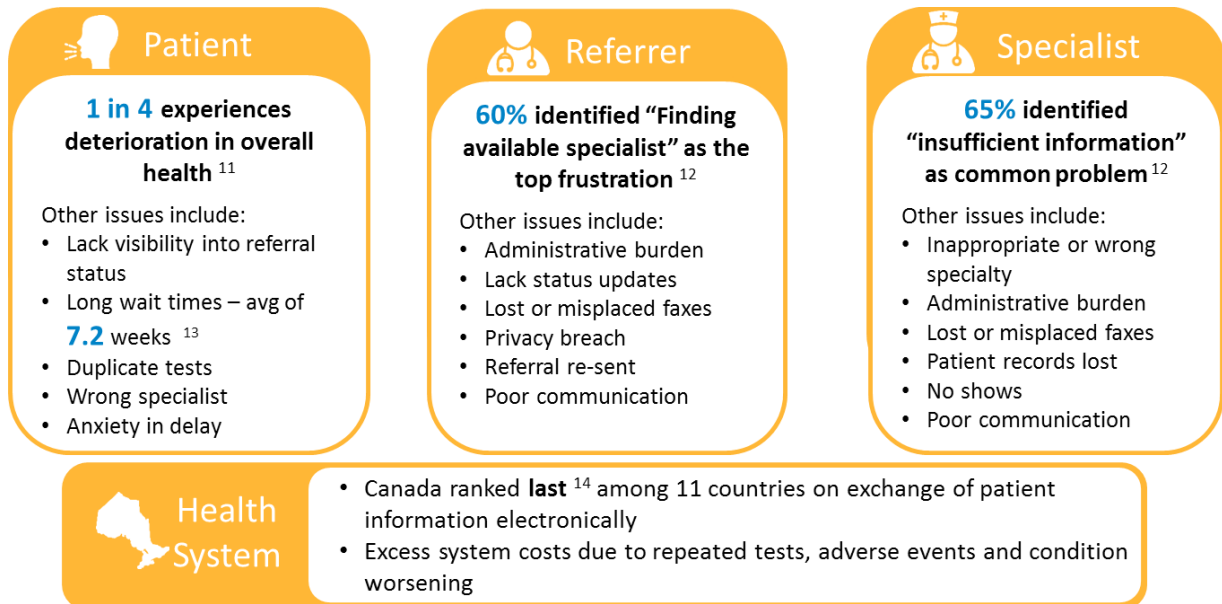

Figure 2: Common referral issues

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[9] Patterns of Specialty Medical Referral; Primary Health Care Research Rounds. Centre for Studies in Family Medicine 2011. Shadd J, Ryan B, Stewart M, Thind A.

In summary, patients and physicians are frustrated with the current state in Ontario. Multiple studies[10] over the last several decades have repeatedly identified inefficiencies in referral process. With over 4 million referrals per year in Ontario, quality of care suffers, clinicians are frustrated and health system costs increase.

Patient
1 in 4 experiences deterioration in overall health [11]

Other issues include:
- Lack visibility into referral status
- Long wait times – avg of **7.2** weeks [13]
- Duplicate tests
- Wrong specialist
- Anxiety in delay

Referrer
60% identified "Finding available specialist" as the top frustration [12]

Other issues include:
- Administrative burden
- Lack status updates
- Lost or misplaced faxes
- Privacy breach
- Referral re-sent
- Poor communication

Specialist
65% identified "insufficient information" as common problem [12]

Other issues include:
- Inappropriate or wrong specialty
- Administrative burden
- Lost or misplaced faxes
- Patient records lost
- No shows
- Poor communication

Health System
- Canada ranked **last** [14] among 11 countries on exchange of patient information electronically
- Excess system costs due to repeated tests, adverse events and condition worsening

2.1.2.1   Business Drivers for eReferral

A thoughtfully constructed eReferral system that integrates critical referral functionality into reliable and familiar electronic systems while incorporating supportive services can improve communications and referrals management. At the same time, the eReferral system enables the referring clinician to accurately select a medical specialist with the right scope of practice and provide the complete patient information he or she requires. Further, an eReferral system can provide a foundation for standard, repeatable processes, and can automate processes to facilitate status updates and secure communication. Key business drivers for an integrated, provincial eReferral system include:

1. The growing number of disparate systems primary care providers need to navigate to deliver patient care, and clinicians' corresponding interest in:
    a. Working within familiar systems;
    b. Reducing the number of passwords to remember; and
    c. Relying on standard and recognizable information sets and processes (e.g., referral information requirements, agreements, etc.).
2. Technical and workflow complexities resulting from bilateral and regional integration efforts as well as specialized niche systems.

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[10] Epstein 1995; Gandhi et al. 2006; Lee, Pappius, and Goldman 1983; Williams and Peet 1994
[11] Canadian Institute for Health Information - Health Care in Canada, 2012: A Focus on Wait Times
[12] Canadian Medical Association - Referral Survey, 2011
[13] Fraser Institute report - Waiting Your Turn: Wait Times for Health Care in Canada, 2016
[14] The Commonwealth Fund - A Survey of Primary Care Doctors in Ten Countries Shows Progress in Use of Health Information Technology, Less in Other Areas, 2012

3. Increasing specialization among, and demands upon, medical specialty providers resulting in a challenging array of decision points in referring to the best possible provider.

These business drivers correspond with the requirements and principles articulated in Section 3.3 Requirements and Guiding Principles of an eReferral Service.

Ontario's widespread and currently inefficient referral processes are not benefitting from digital health tools. The broad implementation of a modern eReferral service will bring benefits to providers and patients resulting in improved care and potentially better outcomes.

2.2 Provincial Alignment

To be successful on a provincial scale, it is critical that the eReferral capabilities align with Ontario's strategic priorities and recognized methodologies. This business case considers key opportunities for this kind of synergy; specifically, it considers the Ontario Ministry of Health and Long-Term Care's (MOHLTC's) *Patients First: Action Plan for Health Care*, and existing standards and models that support integration with the provincial digital health landscape. A detailed literature review was conducted as part of the business case development which further demonstrates the alignment of eReferral with the *Patients First: Action Plan for Health Care* in Appendix F: Literature Review.

2.2.1 Patients First: Action Plan for Health Care

eReferral advances every priority in Ontario's *Patients First: Action Plan for Health Care*.

01 access
patients can get care when and where they want it
- Allowing faster access to specialty care and reducing wait times
- Giving family physicians easy access to a wide range of specialists outside their known networks

02 connect
integrated care that supports better outcomes and improves patient experience across the care continuum
- Providing a venue for secure and effective dialogue among providers sharing in the care and treatment of a patient, and
- Improving the patient experience by enabling seamless transitions in care.

03 inform
right information in the hands of patients, providers, and public health experts to keep Ontarians healthier, longer
- Improving access to information and status throughout the referral process, and
- Providing fast and convenient consultation reports to family physicians, allowing timely follow-up appointments with patients.

04 protect
fiscally sustainable public health system with more efficient ways to deliver care
- Reducing unnecessary or inappropriate testing and referrals,
- Reducing the administrative effort, coordination and potential for errors, and
- Improving workflow and convenience for both referring and consulting physicians.

2.2.2 eReferral Provincial Reference Model and a Standards-Based Approach

In an effort to avoid creating regional eReferral silos and continue to support a scalable, standards-based, interoperable digital health system, this business case recommends that the provincial eReferral system incorporate a reliance on eHealth Ontario's eReferral Provincial Reference Model (PRM). The current version of the PRM is reproduced in Appendix B: eReferral Provincial Reference Model.

The PRM was developed as an extension of the provincial blueprint to articulate workflow representations, data standards, and a framework for privacy and security. It is intended to help

maximize provincial investments in digital health by establishing common, reusable approaches to eReferral development and implementations. The PRM adheres to the following core principles:

1. Promoting a common understanding and approach;
2. Providing reusable patterns;
3. Offering a framework to guide building or procurements;
4. Leveraging provincial electronic health record (EHR) assets;
5. Building systems today that can be integrated in the future; and,
6. Supporting standards that are aligned with the digital health industry direction.

As a living document, the PRM anticipates modification based on the real-world experiences of eReferral initiatives. The Provincial eReferral Initiative is expected to both enrich, and be enriched, by the PRM.

One of the key values of the PRM is that it positions an eReferral solution as more than an automation of existing manual processes. The emphasis on reusable, scalable systems and broad integration across the digital health industry highlights the advanced functionality – beyond the referral letter – of any eReferral service. While these proposed enhancements to the referral process introduce a number of benefits relating to patient care, clinician workflow, and the broader health care system, they may also engender resistance among providers to changes in the way things have been done. Section 4.2 Project Definition delves into further details on the change management and adoption efforts that will comprise a part of the Provincial eReferral Initiative.

eHealth Ontario's Architecture, Standards, and Planning Division has been consulted extensively through the development of this business case to ensure that the principles herein are aligned with the PRM. It is recommended that eHealth Ontario continue to be involved as a key stakeholder throughout the duration of the proposed Provincial eReferral Initiative.

2.3 Leveraging Investments in Digital Health Infrastructure

Existing Ontario investments in digital health solutions comprise a valuable foundation for implementing a provincial eReferral system. As a fundamental component, the widespread adoption of electronic medical records (EMRs) – used by over 14,000 community-based physicians and nurse practitioners in Ontario[15] – provides participating physicians with a primary tool for collecting patient information and accessing integrated digital health services. Further, vendor-based regional referral solutions either have been implemented, or are being implemented, in several of the Local Health Integration Networks (LHINs). Provincially, the Client Health Related Information System (CHRIS) is used in all the LHINs to manage referrals and coordination for home care and long-term care.

Figure 3 illustrates the current landscape of eReferral services available in Ontario.

Figure 3 - Current Specialty Care Referral Landscape in Ontario

In addition to "hard" assets relating to systems and infrastructure, an eReferral service will benefit from investments in the conceptual designs and supports for digital health tools. While the eReferral PRM provides one such investment in terms of an architecturally-oriented model, the *eSafety Guidelines* published by COACH: Canada's Health Informatics Association (see Appendix C: COACH eSafety Guidelines) have been developed to foster the development and adoption of safer digital health systems. These, and other publications, provide fundamental principles to inform an eReferral service.

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[15] OntarioMD website: https://www.ontariomd.ca/portal/server.pt/community/our_organization/731

A successful eReferral service on a provincial scale will embody the following:

1. Investments in eReferral will be directly in support of clinical benefits to patients and/or improved services to providers, and not driven by technology principles;
2. Build on the functionality of EMRs and OntarioMD's EMR specification process so that community-based primary care providers (e.g., physicians and nurse practitioners) can access and document eReferral services within their existing foremost digital health tools;
3. Build on the functionality of existing eReferral and Resource Matching & Referral (RM&R) implementations (the latter have thus far been largely focused on the pathways between institutional care and community or home health care sectors) so that investments in services, workflow processes and infrastructure can expand with minimal interruption and user familiarity; and
4. Wherever possible and beneficial, leverage existing infrastructure and common services such as Health Information Access Layer (HIAL)-based connectivity, provincial services directories, reliable authentication and security.

For specific details around how this business case proposal could rely on existing provincial digital health assets, please see Appendix E: Delivery Appendix E: Delivery Partner Model.

Beyond those existing services that will directly contribute to an eReferral system, related digital health assets must be considered for the long-term, integrated eReferral service. For example, the provincial eConsult service may provide alternatives to referrals, and Health Report Manager (HRM) already delivers the consultation notes that are the result of many referrals to specialists at hospitals and specialty clinics. For further detail on how these additional assets may contribute to the provincial eReferral solution, please see 3.2.2 Current State: Related Solutions.

While an existing foundation of available digital health services can be leveraged to the benefit of a provincial eReferral system, this is a proverbial double-edged sword. One of the chief concerns of the Pan-LHIN Referral Management Working Group (which convened for the purposes of this business planning) is that a provincial eReferral system is being envisioned even as five of the fourteen LHINs already have eReferral solutions, and other LHINs are in the process of evaluating vendors or acquiring a system. This business case is sensitive to the substantial change management efforts and additional costs of creating and implementing new eReferral solutions, further reinforcing the principle of leveraging Ontario's existing regional and provincial investments to realize clinical benefits and better patient outcomes.

3 Ontario Context

3.1 OntarioMD Proposal

This core document addresses the principles, benefits and constraints around a comprehensive eReferral service for Ontario. This includes an analysis of the current state in the province, as well as a future state vision that serves as a target for direction-setting. In addition, this core assessment includes high-level project planning, deliverables timelines, and risks that may impede progress. A more granular view is provided in the document with regard to planning, and proposes specific project partners and detailed roles and responsibilities. The timelines included in the core document are dependent upon these partner assumptions and business case approvals, and thus are subject to change if the partnerships, project deliverables or approval timing shift.

With the exception of these specific project estimations (e.g., costs) that are influenced by partnerships, this business case proposes that such core considerations are fundamental to the development of a successful eReferral system on the provincial scale.

3.1.1 Mandate and Approach

OntarioMD was directed by the MOHLTC to develop a business case for a provincial eReferral system, with a specific focus on the pathways from community-based care[16] to specialty care. OntarioMD's relationships with, and knowledge of, the community-based clinician sector, as well as EMR vendors and products, enables a holistic view of the system needs and proposes a collaborative strategy to fulfill the aims of clinical benefit. Further, through stewardship of the provincial EMR Specification and the corresponding certification process, OntarioMD is a key contributor to this initiative; experienced and well-positioned to develop and oversee EMR integration requirements.

OntarioMD initiated eReferral planning activity from October to December 2015, conducting an environmental scan of existing and planned eReferral assets in Ontario. This included identifying key stakeholders in the LHINs and determining their regional priorities for eReferral. This was followed by an analysis phase from December 2015 to March 2016 to draw out the future state. This included the review and validation of the OntarioMD Electronic Referral Business Requirements (2012), including a high-level gap analysis between the target state requirements and the current state. This information was used to develop and refine a business case with the Pan-LHIN Referral Management Working Group and other key stakeholders from March to November 2016.

To support the referral patterns of community-based clinicians (as illustrated in Figure 4), the broader scope of eReferral functionality needs to include varied and different pathways, including acute care settings to continuing care, patient self-referrals into medical programs (e.g., diabetes management) or paramedical treatment (e.g., chiropractic care), as well as access points to community services (e.g., Meals on Wheels). This project focuses on referrals that originate from community-based providers and enlist the services of medical specialists; this includes referrals enacted by primary care providers for specialist care, as well as when one specialist refers a patient to another specialist. As a secondary element, and in response to stakeholder interest, referrals from community-based care to non-physician specialty services (e.g., Adult Day, long-term care) are included in the scope for the project. Refer to

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[16] In this document, community-based care includes both primary care providers (family physicians and nurse practitioners) as well as community-based specialists.

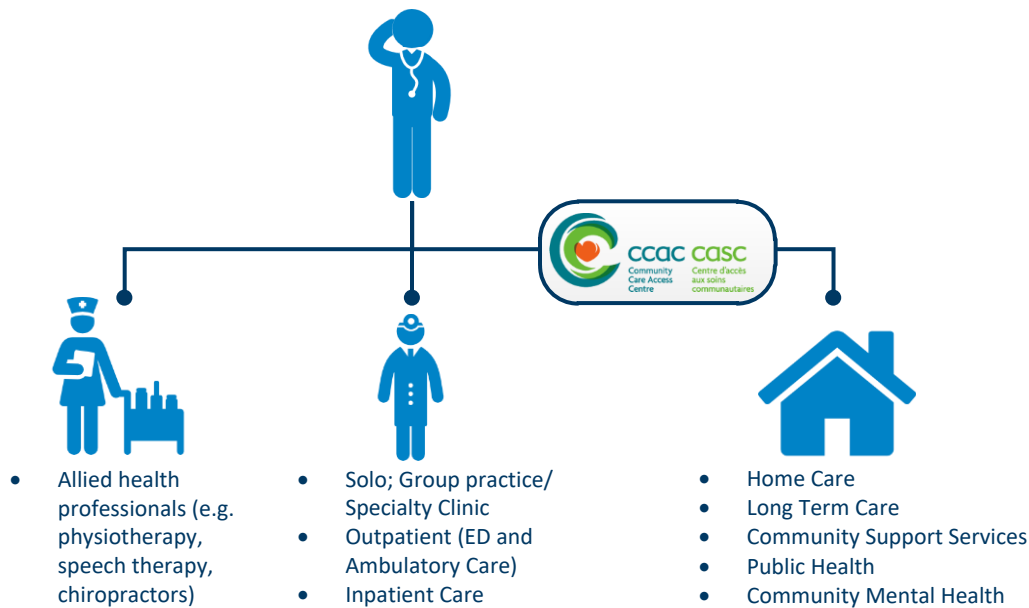Section 4.3 Implementation Planning for the project scope and proposed pathways to be included in the project.

Figure 4 - Primary Care Referral Patterns

- Allied health professionals (e.g. physiotherapy, speech therapy, chiropractors)
- Solo; Group practice/ Specialty Clinic
- Outpatient (ED and Ambulatory Care)
- Inpatient Care
- Home Care
- Long Term Care
- Community Support Services
- Public Health
- Community Mental Health

The project aims to optimize the referral and consultation process for community-based physicians, their care teams and their patients. It conceptualizes an eReferral ecosystem consisting of both EMR-integrated and web-based access, including services such as provincial directories and standards that support advanced functionality and interoperability, that leverages current investments in health information technology.

3.1.2   Collaboration and Partnerships

This business case has been developed in collaboration with the Pan-LHIN Referral Management Working Group (see Appendix G: Pan-LHIN Referral Management Working Group for a list of members), eHealth Ontario and the Ontario Telemedicine Network (OTN) through a series of workshops (March to November 2016). This ensures that the business case represents the collaborative vision of all delivery partners. Figure 5 illustrates the workshop series conducted, which includes a socialization and feedback cycle with key delivery partners.
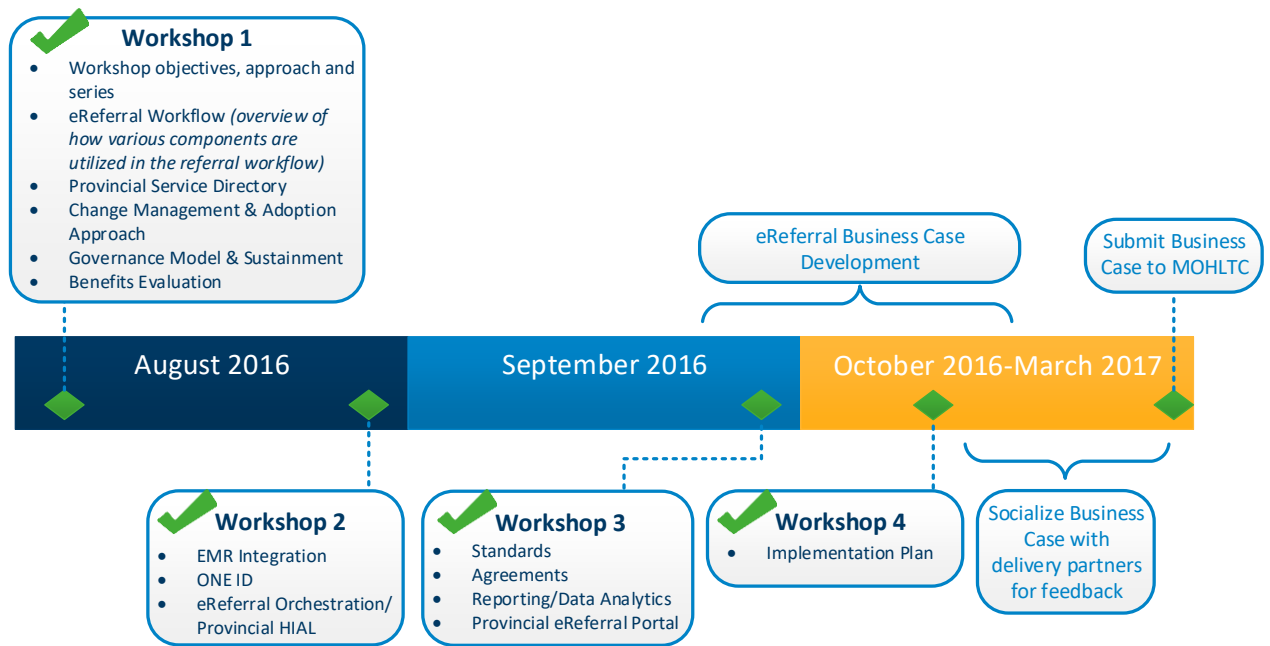
Figure 5: Planning and development timelines for eReferral Business Case

3.2 Current State

A provincial eReferral service currently does not exist for referrals from community-based providers to specialty care in Ontario. However, as per Figure 3 in Section 2.3 - Leveraging Investments in Digital Health Infrastructure, a number of commercial off the shelf (COTS) electronic referral solutions either have been implemented or are being considered on a regional basis by the LHINs. These eReferral solutions have mainly focused on the pathways between institutional care and community / home health care sectors, e.g., Strata Pathway for RM&R. For referrals to home and community care, Client Health and Related Information System (CHRIS) is used provincially both for referral and case management. For referrals to medical specialists and programs, some organizations and clinics are offering the ability make electronic referrals, e.g., SickKids' electronic Child Health Network (eCHN), Sunnybrook's Odette Cancer Centre – GI Cancer referrals, Ontario Bariatric Network. These online "systems" are primarily focused on allowing the referrers to submit referrals electronically, and for some, even provide the ability to track referral status. However, they are general lacking most features required to be considered a comprehensive referral management system as is the case for the COTS-based eReferral solutions.
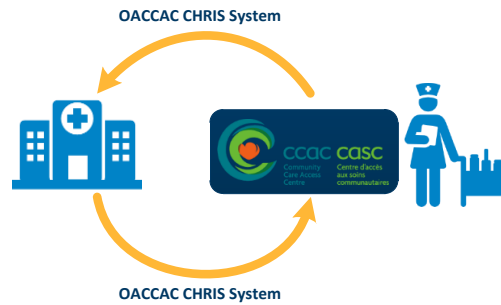
Figure 6: The OACCAC CHRIS system currently supports acute to community/homecare pathways, lacking in EMR integration.

This proliferation of limited-scale and limited-scope referral solutions means that any given referral depends on a largely unstructured process defined by an individual medical specialist, a specialty group, or a regional body. While a referring clinician may be able to compose a referral letter in his or her EMR, for the most part, the processes are manual, are not based on repeatable standards, and operate outside of a provincially-integrated model. Figure 7 demonstrates the complexities and opportunities for prolonged wait times during a regular referral workflow.
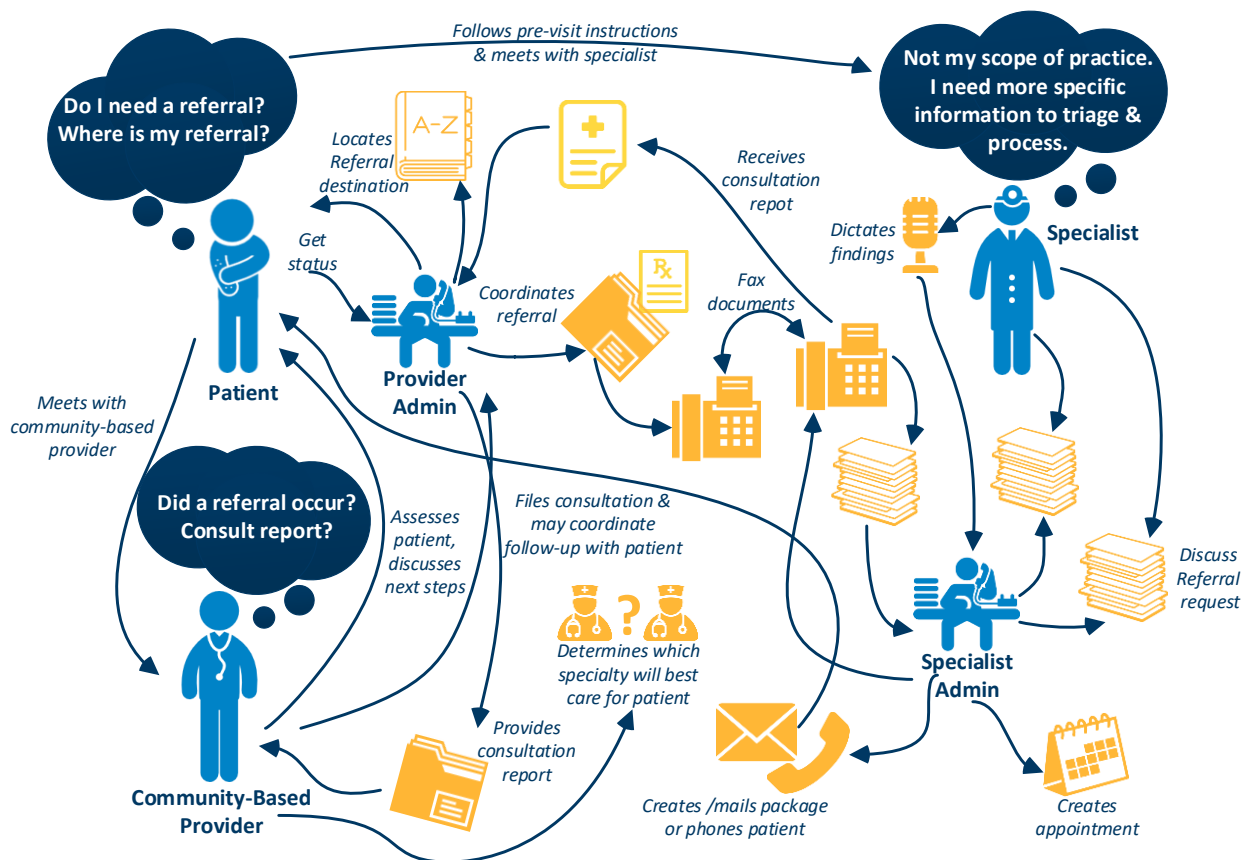

Figure 7: Current State - Referral Workflow

The widespread reliance on fax to communicate means that referral requests can be misdirected or lost, also making it difficult to track actions and outcomes. Notifications back to the referral source can be insufficient or non-existent, even to the point where referral rejections by the referral destination can

remain unknown to the referral source. Post-consult communications, including both to the referral source with respect to the completed consultation, as well as to the referral destination to inform them of the efficacy of the treatment plan, face similar challenges in a fax-dominated referral environment. All of these factors culminate to impede the health system to provide patient-centred care.

While solutions focused on patient referrals between institutional care and community / home health care sectors are maturing, more recent regional initiatives have begun to address referrals from community-based primary care to specialty medical care. These nascent implementations are thus far relatively limited in terms of scale and scope; however, they highlight opportunities to resolve some of the challenges in the existing environment, as represented in Figure 7: Current State - Referral Workflow. The following table presents a sampling of key functionality for provincial-scale success, and regional solutions that have begun to introduce such enabling features. (Note: This table is not intended to provide an exhaustive list of the functionality provided by each system. eReferral systems deliver additional functionality that is not articulated below, and the systems identified below may not be the only ones that offer such features to their clients. This table is intended to introduce the reader to the variety of services already available in some form; not to imply limits on the functionality or implementations of the existing ecosystem.)

Key Functionality	Current Implementation	Additional Details
EMR integration with the eReferral system	Ocean by CognisantMD is deployed in the Waterloo Wellington LHIN with opportunity to expand to additional LHINs	The Ocean solution was initially built with direct, tight integration with TELUS' Practice Solutions EMR. Enhancements have established Ocean integration with QHR's AccuroEMR and OSCAR EMR's OSCAR.
eReferral system integration with provincial systems	Strata Health in the North West LHIN integrates with CHRIS	Strata Health provides eReferral services to both medical specialty providers directly, as well as to community services through CHRIS.
Listing of available specialists	ConsultLoop is available in all LHINs, though has primarily been adopted in the Greater Toronto Area	The ConsultLoop solution provides users with a validated listing of specialists along with contact information and other specialist details (e.g., language(s) offered, sub-specialty, etc.).
Servicing multiple disciplines (e.g., medical specialty and allied health)	Strata Health and Novari in NW and CE LHINs, respectively; Ocean is in Proof of Concept at WW LHIN	All three COTS eReferral solution vendors can accommodate referrals to multiple disciplines.
Comprehensive reporting and business intelligence tools	Novari implementation in the CE LHIN; Strata Health in NW, TC and Central LHINs	Both Novari and Strata Health's eReferral solution include native reporting and business intelligence tools to support and inform stakeholders and health system stewards.

3.2.1 Current State Challenges

Just when you are at your weakest and least able to make all the phone calls, traverse the maze of insurance, and plead for health-care referrals is that one time when your life may depend on it.[17]

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Ontario lacks a provincial strategy on eReferral for community-based providers. The profusion of regional solutions, start-up offerings and proprietary portal offerings used by hospitals or other large treatment centres to obtain consistent referral information and simplify data entry from the referral sources, is likely to compound the existing challenges to referrals as each portal requires that its custom entry template is used by the referring clinician. The introduction of an EMR-integrated eReferral service, as part of a province-wide strategy, is required to counter this concerning trend of independence where consistency and continuity are needed.

Patient communication is another area where the inconsistent approaches among specialists can leave the referring clinician unclear as to his or her role in preparing a patient for the referral. A comprehensive catalogue providing community-based providers with the scope(s) of practice / sub-specialization; referral requirements; provider preferences; and fundamental details of a specialist (e.g., whether a provider is accepting new patients) is simply not available to referral sources at this time.

Summary of Risks in Continuing on the Current Path

Duplication, Fragmentation and Inability to Scale Provincially
- Will result in duplication of efforts including defining clinical referral requirements /pathways across multiple platforms
- Will result in gaps in implementation
- Will result in islands of systems that cannot interoperate
- Clinicians will still end up with solution(s) that are limited in who they can refer to and having to manage multiple identities
- EMR and eReferral solution integration approaches that are not scalable, which will lead to performance issues and adoption issues

Delays and Poor Adoption
- Poor adoption by clinicians due to uncoordinated or ineffective change management approach
- LHINs and health service providers may lack the sufficient capacity to implement specialty care eReferrals, in a timely manner
- Lack of a coordinated, cohesive plan that can address all specialty care types, and provide consistent interactions with existing solutions, e.g. CHRIS, eCHN

Increased Costs for the Province
- Due to duplications across the different eReferral projects
- Due to longer than required project timelines

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[17] The Lassa Ward: One Man's Fight Against One of the World's Deadliest Diseases. St. Martin's Press 2009. Donaldson, Ross I.

3.2.2 Current State: Related Solutions

There are a number of existing digital health solutions that are not intrinsically a part of an eReferral solution, but that relate to referrals processes. These can be incorporated into, or aligned with, the provincial eReferral ecosystem for the benefit of patients and providers. The following list considers some of these assets, and the value they can impart. (This list is not exhaustive.)

1. eConsult: The provincial eConsult service has the potential to improve patient care and reduce the long-term reliance on referrals[18]. The development of integrated eReferral functionality should consider ready availability of eConsult to encourage optimal use.

2. Health Report Manager (HRM): Clinical documentation, such as consultation notes that result from referrals, and assessments that pertain to referral investigations, is already electronically delivered to providers from those hospitals and specialty clinics that rely on HRM. Leveraging this functionality in the near term and/or aligning eReferral and HRM for the long-term strategy may contribute to coordinated information flow.

3. eNotifications: Related to the HRM service, eNotifications are brief, non-clinical alerts that inform providers of their patients' status. Currently, eNotifications relate to admissions or discharges from hospital inpatient units, and discharges from emergency departments. Additional alerts related to eReferral (e.g., appointment complete, etc.) may enhance the overall clinical value of the integrated service.

4. ConnectingOntario Viewer: Meant to provide aggregated access to a comprehensive patient history, the ConnectingOntario Viewer already provides users with access to data in the digital imaging, laboratory results, and clinical document repositories. Incorporation of the provincial eReferral ecosystem to the provincial digital health environment may enhance the existing value of the ConnectingOntario Viewer while supporting the delivery of optimal patient care.

A detailed assessment of how these and other digital health services should integrate with the provincial eReferral system is not included in this business case. The purpose of this document is merely to recognize that such related solutions exist, and that further consideration must be given to the best use of such solutions during the project planning phases.

3.3 Requirements and Guiding Principles of an eReferral Service

This business case is informed by consultations with LHIN representatives and other system stakeholders. Through assessments of the current state and consultations with the LHIN partners, key requirements and guiding principles of a provincial-scale eReferral system have been identified.[19]

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[18] Evidence from a regional eConsult solution in Ontario demonstrated that 40% of eConsults avoid referrals that would have otherwise been necessary. Source: Building Access to Specialists through eConsultation. Liddy, Clare, Keely, Erin et al. 2013

[19] For clarity, the consideration of a requirement in this document does not mean that the proposed eReferral service will address it in the immediate term. Some requirements (e.g., standardized referral intake) will be incrementally implemented.

3.3.1 Requirements

Requirement	Description
EMR Integration	• The ability for a provider to launch and manage an eReferral from within the EMR without having to provide new login credentials and while maintaining context management • Bilateral exchange of communication among EMRs, eReferral systems, and related systems (e.g., eReferral status registry) • Engagement with the EMR vendors and clinician users in the development and adoption processes • ***Note:** EMR integration has been identified as a key priority for advancing referrals management*
Provincial Service Directory	• A directory of specialists that contains information for making referrals (e.g., wait time, contact information, area(s) of specialty, referral requirements) to specialists across the province
One Single "Front Door"	• A single and consistent access mechanism for community-based providers to make specialist referrals (either from EMR or the web) • Integration through a Health Information Exchange (HIE) such that one connection point supports integration with all related services
Standardized Referral Information	• Standardized information required for a referral (e.g., per specialty, per central intake)
Common Identity Service (Single Sign-On)	• Leveraging a common identity to access eReferral-related services
Referral Orchestration / Cross Platform Referrals	• Facilitate the communications among regional/local eReferral solutions • Make it easier to connect to service providers and to leverage existing assets (e.g., Telehomecare, CHRIS)
Agreement Framework	• A consolidated, common/standard agreement framework for participating in referrals
Scalability and Sustainability	• The introduction of common services (e.g., services directory) to enable scaling up of existing implementations • A standards-based approach to pathways implementation for sustainable growth
eReferral Platform Coverage	• Ensure access to eReferral in LHINs without an existing, scalable eReferral platform • Establish prioritization and governance for the identification and development of pathways

3.3.2 Guiding Principles

This document is premised upon the following considerations as articulated and advanced through consultation with the Pan-LHIN Referral Management Working Group:

Integration – A critical success factor is to achieve interoperability amongst EMRs, provincial assets and regional eReferral solutions. The initiative has to consider the variations of eReferral implementations across the province and how the integration approaches will impact the users.

- All referrals flow through the regional referral solution if it exists.
- Pathways developed would be available in all regional eReferral solutions as part of the strategy.

Leverage - Utilize existing systems and infrastructure and their functionality. Avoid duplications or introducing new capabilities (e.g., procuring eReferral systems), unless necessary. This principle needs to be incorporated into various aspects of the initiative including governance, design, implementation and ongoing support.

Consistent User Experience – Aim to provide a consistent user experience regardless of pathway or location.

Patient Access and Use – The initiative should consider the access and use of the referral solutions by patients as part of the business case and architecture. It needs to distinguish between referral solution, system access and navigation models. Key patient interactions include access to referral information including booking and scheduling, providing information, self-referral and navigation.

Standardization – The initiative needs to support the development of standards and best practices. There needs to be flexibility in development of pathways where LHINs or groups can take the lead and have the pathways evaluated through proof of concept. The work can feed through evaluation into a broader governance process, including a provincial-level governance structure and clinical working groups. Initiating pathways developed by LHINs can set initial standards, and have one or more leading the development. LHIN CEO champions can provide advocacy at the LHIN and provincial levels. This principle includes the development of a centralized service directory for provincial use.

Sustainability – A referral management system must have a strategy to be sustainable and must include components such as costs, oversight, support and transformation of the solution requiring flexibility and ability to generate and progress locally and spread provincially.

Governance – A model that includes bi-directional local and provincial support and input should be integrated into the overall provincial eHealth governance structure, e.g., Digital Health Council. The model should also consider patient and clinical needs and requirements along with support for other principles such as sustainability, standards and best practice for matching.

Matching – The referral workflow needs to provide matching for appropriateness and correctness to the appropriate specialists.

3.4 Future State Vision

An integrated electronic referral system, leveraging the existing widespread use of EMRs, could improve information continuity and process efficiencies, and support shorter time to treatment.

An EMR-integrated eReferral service can be expected to improve satisfaction and outcomes for both patients and providers by:

- easily identifying and engaging with the proper medical specialist at the outset,
- reducing the number of patient visits to prepare for consultations, and inconvenience to patients, and
- supporting meaningful communications among providers regarding a consultation.

At the same time, the future state concept needs to acknowledge the existing proprietary referral mechanisms, as well as physicians who do not have EMRs, or whose EMRs do not interface with the eReferral solution.
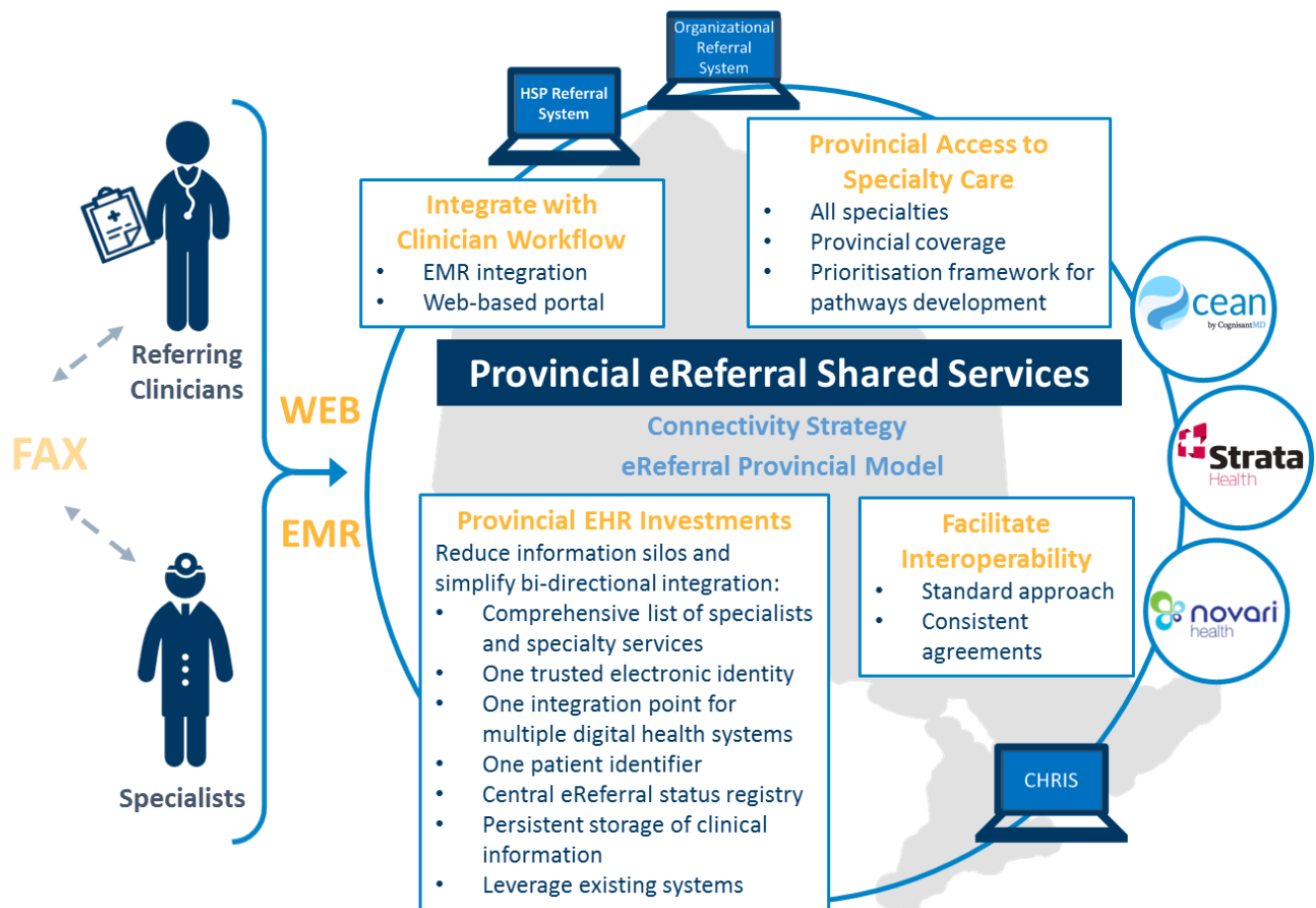

Figure 8 – Future State: eReferral ecosystem

As depicted in the Future State diagram above, Figure 8, the proposed future state for community-based eReferral is an interconnected, ecosystem leveraging provincial, regional and institution-based assets. At the heart of this ecosystem is a set of Provincial eReferral Shared Services:

- to enable standard-based connectivity between clinician point-of-care systems (EMR and portals) and eReferral management systems, e.g., eReferral vendor solutions, sector-based and institution-based systems (e.g., CHRIS, eCHN)
- to provide the governance model and change management support for different stakeholders (LHINs, Health Service Providers, Community Care Access Centres/Health Shared Services Ontario, solution vendors, etc.) involved in eReferral implementations to adopt the shared services and to prioritize and coordinate the specialty care eReferral implementations

The four pillars of the shared services (Provincial access to specialty care, Integrate with clinician workflow, Facilitate interoperability, and Provincial EHR investments) are grounded in the principles of the eReferral PRM and HIAL-based connectivity. Specifically, a referrer will be able to access the eReferral service from within his/her existing workflow (EMR-integrated or through existing web-portals); seamlessly connect to the appropriate eReferral solution using a consistent electronic identity and centrally-integrated connections through the province's Health Information Exchange; and engage with any participating specialist or specialty group in the province, including selection, communication, and status updates (e.g., appointment booked/completed, etc.) throughout the referral process.

This eReferral future state is schematically represented in *Figure 9*, below.
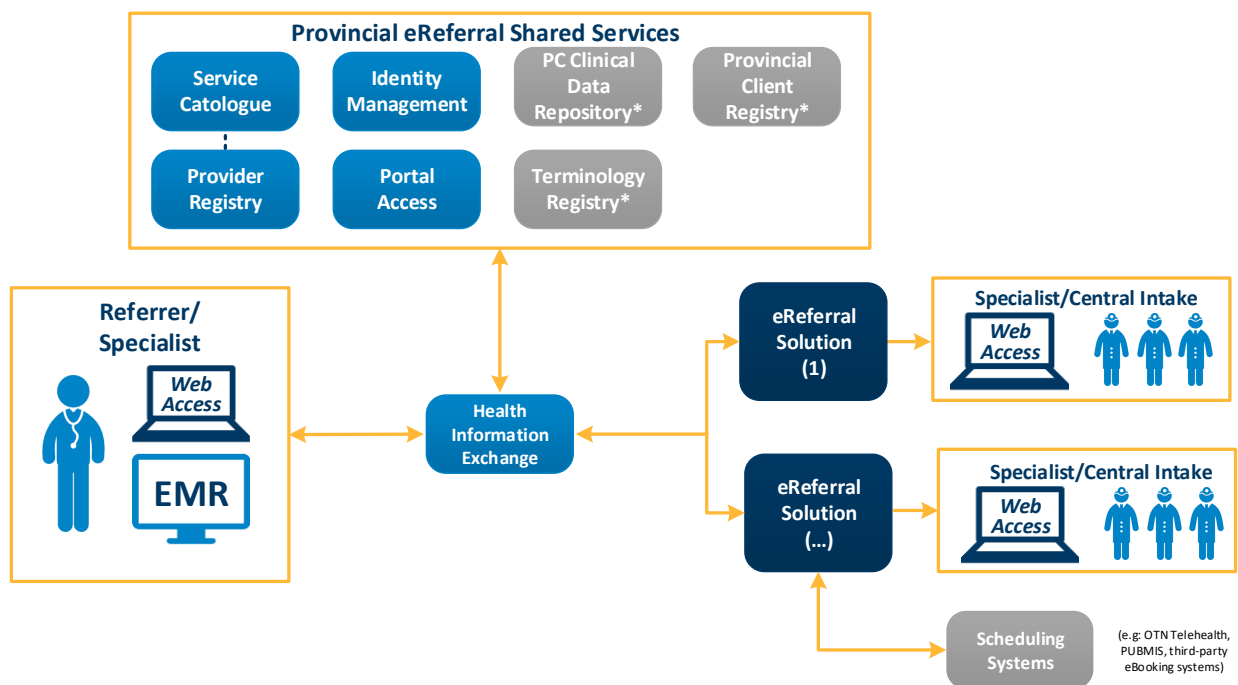

Figure 9: eReferral Future State Components

The lynchpin of this proposed future state is connectivity through a Health Information Exchange; in Ontario, this HIE functionality is a part of the provincial HIAL (alongside additional services such as securitization and authentication). This centralized interconnectivity is key to support the delivery of

critical information such as appointment scheduling and wait time information from eReferral solutions to clinician EMRs. Further, centralized connectivity permits a scalable integration infrastructure whereby end user systems (e.g., EMRs, eReferral systems, etc.) connect once to gain access to all aspects of the provincial eReferral ecosystem. The suite of eReferral Shared Services articulated in this proposal includes the promotion of certain elements on a provincial scale, such as access through one or more online portals (e.g., ConnectingOntario, ClinicalConnect, etc.). These provincial services need not replace existing services such as regional or system-specific online access, but will provide additional means of access.[20]

The eReferral solutions (regional, institution-based, sector-based) in the proposed future state will continue to play the central role in managing the journey of electronic referrals as they move through the various processing steps. This journey includes the step of managing the appointment information, which will continue to be a function handled by the eReferral solution or by an external system, e.g. PUBMIS (Procedure Utilization, Booking Management, Information System) which interacts with the eReferral solution.

This document anticipates that the future state will be fully realized over time with subsequent initiatives in coordination with the LHINs, building on the foundation proposed in this business case, and ensuring provincial coverage of eReferrals. For further details on the proposed strategy to realize this future state vision, refer to Section 4.1 Strategy for Specialty Care Referral.

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[20] Notwithstanding the elevation of certain features to a provincial service, in other cases this HIE approach reinforces the priority of certain functionality being retained in the end user systems. For instance, this proposal does not envision the development of a centralized scheduling service that would replace system-specific scheduling. Instead, the information exchange permits the delivery of information – such as appointment information – from one system to another.

4 eReferral Proposal Summary

4.1 Strategy for Specialty Care Referral

The goal of the Provincial eReferral Initiative is to allow clinicians from across Ontario to electronically initiate, receive and manage specialty care referrals. The end state picture once this goal is realized is introduced in Section 3.4 Future State Vision, where clinicians are able to refer to any specialist across the province, from their EMRs or from web portals, facilitated by an integrated eReferral ecosystem consisting of regional and provincial digital health assets. Taking into account Ontario's current eReferral landscape and experience in advancing the use of electronic medical records by physicians, OntarioMD recognizes that achieving the stated goal cannot be achieved through a one-time initiative. The journey will take time, and will require long-term funding and collaboration amongst stakeholders. The proposed strategy is to proceed with an important first step of building a *Foundation*, upon which, future work in A*doption and Expansion* can fully realize the envisioned end state for specialty care eReferral in Ontario.

4.1.1 Building a Foundation and Building in Benefits

Implementing an integrated eReferral ecosystem, consisting of EMRs, provincial digital health assets and eReferral solutions, is a significant undertaking requiring careful management and engineering, and involving a number of stakeholders. The initial strategic emphasis will be on the infrastructure and standards (including EMR integration), leveraging the existing eReferral pathways to test the feasibility of the provincial-scale architecture and processes in order to mitigate risks associated with a large-scale implementation. This proposal is not about procuring new eReferral systems; rather, the focus is on establishing a set of shared services that permit existing systems to interact within an integrated environment, and support sufficient flexibility for enhancements to the ecosystem.

A foundation of standards and repeatable, scalable processes and technology is a logical precursor to rapid expansion. Otherwise, the risk exists that recently established norms for eReferral are changed when assumptions regarding the structure are reversed through early experience. Furthermore, those LHINs and/or services that have yet to articulate an eReferral strategy can use the time while the structural elements are being introduced to determine how best to shape and implement their strategies to take most advantage of the developing provincial services.

The following are the key elements of the **Foundation** stage:
- Establish a set of Provincial eReferral Shared Services to create an interconnected eReferral ecosystem:
    - EMR Integration and Web Portal Access - Supporting clinician workflow by providing these access channels into eReferral solutions
    - Provincial EHR assets – Reduce the integration effort and complexity by leveraging provincial assets in alignment with the eReferral Provincial Reference Model: ONE ID Federation, Provincial HIAL, Provincial Service Directory, Provincial Provider Registry
    - Standards and Agreements – Promote interoperability and standardization through the creation of common referral forms, message exchange standards, reporting standards, and agreement framework for eReferral.
- Engage with delivery partners, such as the LHINs, Health Shared Services Ontario (HSSO), to advance their eReferral implementations, and to shape the development of the shared services

- Create an operating model and long term plan to sustain and grow these services, including a governance model that takes into account LHIN-level and provincial-level structures, continual development and maintenance of standards and an agreement framework, and adoption and change management to ensure long-term viability of these shared services.

The scope of this business case is to realize the **Foundation** Stage of the proposed strategy.

4.1.2   Adoption and Expansion towards Provincial Coverage

Once the Foundation Stage is complete, this initial scalable structure of common services will be able to support eReferrals across the province. The remaining journey in the proposed strategy, referred to as **Adoption and Expansion** Stage, will seek to expand on the coverage of specialty care pathways and to enhance the capabilities of the ecosystem through additional shared services and system integrations. The robust operating model and change management strategy developed during the Foundation stage will be critical in ensuring success in the adoption and expansion of eReferral across the province. The pace and scope of how and when these activities during the Adoption and Expansion Stage will be rolled out will need to align with business strategies at the provincial level, the LHIN and sub-region levels. The ultimate objective is to achieve the end state vision where all patients seeking care from medical specialties, specialists and ancillary services can realize the benefits of eReferral.

The following activities that should be undertaken during this stage to ensure **Adoption and Expansion:**
  o Expand the scale and coverage of eReferral by the adoption of available pathways and implementation of new pathways for medical specialists
  o Adoption of eReferral by both referrers and specialists
  o Expand the scope to cover the other referral services required by primary care providers, such as referral to allied health professionals and the remaining home and community care services
  o Enhance the offerings of the Provincial eReferral Shared Services through the addition of the Provincial Client Registry and Primary Care Clinical Data Repository
  o Integration of eReferral with other systems and solutions to further automate the clinician workflow and to improve patient care, such as eConsult, eVisits, eRequisition
  o Patient access to eReferral information

4.2 Project Definition

The proposed project scope of this business case is to support the implementation of the **Foundation** Stage. This business case proposes an initiative whereby a community-based health care provider will be able to seamlessly initiate an electronic referral to the most appropriate medical specialist anywhere in the province, while working within an existing, familiar context; specifically, from the provider's certified EMR or a frequented web portal, such as regional provider portal and portal provided by a regional eReferral solution. The provider will be able to electronically check on the status of a referral to monitor when referral requests are accepted and appointments are made, and to communicate with the specialist throughout the referral process. Using this service, the specialist will receive all critical patient information pertaining to the referral at the outset, and will be equipped to deliver effective, efficient and comprehensive care to the patient upon presentation. Additionally, health system stewards will be able to monitor and assess indicators reflecting the relative health and improvements to systemic referral processes provincially and regionally, such as wait times for specialty care. With this foundation of clear preparation, reliable communication and scrutinized outcomes, patients will get the support

they deserve as they navigate the complex health care system, reducing anxiety and waste, and recognizing patients as primary stakeholders in their care.

A typical conceptual eReferral workflow is illustrated in Figure 10; however, in some cases the workflow may be fast tracked when an eReferral is sent directly to a specialist. Other referral activities not depicted in the workflow diagram include:

- Referral status: updates, notification, lookup
- Communications between referrer and specialist
- Appointment booking: changes, lookup, cancellation

See Appendix D: Functional Model Representations for diagrams depicting the workflow among these functional sets.

Figure 10: Conceptual eReferral workflow

This initiative is not about automating the convoluted referral processes that are in place today. Rather, this provincial eReferral service will balance structure with ease of use, and will emphasize enhancements to the patient care journey. To achieve these goals, this initiative recognizes the critical importance of robust change management support for community-based clinicians and specialists to avail themselves of the service, and realize the benefits.

There is another, more fundamental reason to address the foundation of the eReferral ecosystem before building out in support of other specialty services. In the majority of cases today, EMR-enabled

community-based clinicians generate referral letters from their EMRs and fax these letters to their specialists of choice. Careful analysis and qualitative feedback have demonstrated that existing referral practices permit gaps in patient communication and care, and issues related to referrals management on the part of clinicians. Notwithstanding these known challenges with the status quo, community-based providers can be expected to resist new processes and methods that have unproven value with regard to any improvement in these gaps and issues. It is better to trial the building blocks of a provincial scale solution with a small number of pathways and users when changes or even failure are limited in terms of affected scope. A small number of existing pathways can allow the foundation to be tested and new outcomes to be validated with a minimal amount of new disruption. The solution can be expanded with change management and adoption supports once the value proposition for both clinicians and patients is well-proven.

4.2.1.1   Immediate Impact

As a part of this foundation being built toward the long-term, ideal vision, certain medium-term strategies which leverage or align with components of the long-term solution will address deficiencies in the current state. This approach will improve the existing fax-centred model, and will ensure service for those clinicians who either work outside of the regions with eReferral systems, or who require specialty services that are not covered by those existing solutions.

Specialist Publication and the Service Catalogue

Benefits: *The most appropriate specialist, and the right intake requirements.*

When approached by patients, most community-based clinicians refer within a circle of known specialists / specialty services. However, those same clinicians will "hunt to find the best people to provide care…for themselves or their own family members."[21] One of the clinical benefits of a comprehensive eReferral service is a service catalogue that improves a provider's ability to find the most appropriate specialist to deliver the best care for the patient. This feature and the corresponding benefits can be delivered well in advance of a broadly adopted provincial eReferral Shared Services. In the near term, the service catalogue can identify known specialists with indicators as to whether the specialist is available through eReferral. For those that are not, the service catalogue could publish intake requirements or an intake form, and identify alternative means of form submission (e.g., fax number).

Identity and Authentication

Benefits: *Streamlined registration for services, and single sign-on from the EMR.*

Implementing a provincial identity and authorization strategy such that EMR users log in to their EMRs and other services using a single, reliable log-in increases information security and streamlines registration and authentication efforts for other solution providers (e.g., eReferral). Coupled initiatives in alignment with the eReferral project that expand community-based clinician registration through ONE ID, and integrate ONE ID as an identity provider for EMR and eReferral solutions, could reduce effort on these service providers and clinicians. Ancillary benefits such as access to other ONE ID-dependent solutions may also be realized.

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[21] The Creative Destruction of Medicine. Topol, Dr. Eric. Basic Books 2012.

Referral Status Notifications

Benefits: Community-based providers will be informed as to the status of referral requests and follow-up appointments.

HIAL-based integration among eReferral systems and EMRs, premised upon the principles of the eReferral PRM, is likely to require specification-based development by EMR vendors, informed by one or more proof of concept initiatives. It will take time. As a near-term deliverable, however, the eReferral solutions can leverage existing EMR capabilities to deliver status updates and changes to EMR-based providers. While some eReferral solutions already have similar capabilities with a limited number of EMRs, an expansion of this service could improve communication between referring clinicians and recipient specialists, alerting referrers when referral requests have been accepted and appointments booked. This would address some of the key pain points identified in consultation with community-based providers.

Consultation Note Delivery

Benefits: Secure, electronic transmission of consultation reports so that they are accessible to the referring provider through EMR or clinical document repository (CDR) access.

Depending on the specialist, referral-related consultation notes are already delivered through electronic means and accessible to community-based providers through web-based repositories and EMR integration. Currently, such delivery and accessibility is largely limited to specialists based in hospitals and a limited number of large independent health facilities (IHFs) that are integrated with provincial solutions. By establishing links between eReferral solutions and the existing report delivery mechanisms, clinically relevant information that is captured in the eReferral system can also be more readily available to community-based providers. Such replacement of fax-based communications would enable electronic searching through the report content in the EMR or repository; in the case of delivery to EMRs, this can also facilitate intelligent handling based on report attributes.

<p style="text-align:center">**********</p>

In addition to delivering immediate value to referrers (e.g., access to a broader list of specialists and specific intake requirements where they exist), to specialists (e.g., the ability to publish key intake requirements and specialty services), and to patients (e.g., faster care by the right specialist, with the right preparatory activities), these near-term achievements will also provide a platform to begin change management activities to incent users toward use of a comprehensive eReferral platform.

This business case is not attempting to provide a comprehensive plan in terms of interim achievement; the preceding list is for consideration only. Project planning exercises (in collaboration with delivery partners) that will follow this business case will expand on the potential for immediate term advantages. For further details about planning stages, please see Section 4.3 Implementation Planning.

4.3 Implementation Planning

The eReferral service will be implemented in an environment with a variety of existing manual processes, legacy behaviours, and localized/regional electronic systems. The extent that the potential benefits of eReferral are realized will to a large degree depend upon the change management support given to providers to transition to the new services available to them. A "build-it-and-they-will-come" philosophy will not suffice.

4.3.1 Scope and Objectives

A summary of the scope perspectives constraining this business case[22]:

In Scope	Out of Scope

- EMR integration, meaning that the following activities are available from within the EMR, using an integrated eReferral system:
  o Launch an eReferral without the provider having to supply new/additional log-in credentials or patient context;
  o Leverage Ontario-scale common services such as a provincial catalogue of services, and corresponding access to participating specialists anywhere in the province;
  o Check on the status of an eReferral (e.g., accepted, appointment booked, appointment complete); the appointment information in scope reflects the pathways involved in the Proof of Concept, but the integration and standards developed will accommodate all future pathways that the eReferral solutions manage; and
  o Retrieve details of past eReferrals and store eReferral-related information in the EMR patient record.
- Online portal access to one or more EMR-integrated eReferral systems, and synchronization of online activities with EMR-enabled activities.
- Referrals initiated by community-based providers for services by medical specialty care, and home and community care.
- eReferral system providers with an existing provincial presence.[23]
- Supports (e.g., reporting) for health systems stewards and managers to assess key indicators (e.g., wait times).
	- Anything that is not in scope should be considered out of scope. However, subsequent to this business case, the scope of the project for eReferral implementation and integration may shift according to project and stakeholder needs, in accordance with change control procedures.

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[22] Please see section 4.3 for details around when elements are anticipated to be introduced.

[23] For clarity, this means that OntarioMD will not introduce any net new eReferral providers as part of this initiative, but also that the resulting solution will be available to eReferral providers, as identified by project stakeholders, that deliver service in Ontario.

This scope will support the following project objectives:

1. Shelter providers from the proliferation of unique referral portals for specialized needs or limited scale, localized EMR integration.
2. Empower the referring clinician with pertinent information to match the patient needs to the appropriate referral destination the first time, properly set patients' expectations, and to know and comply with the information and consultation protocol of the recipient specialist[24] [25].
3. Ensure all participants engaged in the referral process are able to fully interact and exchange information in a timely way.
4. Retain professional and clinical autonomy at the provider level, respecting their professional business judgement, choices and relationships.
5. Instill confidence and participation to realize the benefits of electronic referrals while minimizing disruption, through extensive change management support.[26] [27] [28]
6. Empower health system managers and stewards with the information required to positively affect changes in referral practices through eReferral.

4.3.2   Project Phases

This business case anticipates developing a set of shared services in collaboration with a number of partners, including:

1. eReferral system vendors (e.g., CognisantMD, Novari, Strata)
2. Local Health Integration Networks
3. Provincial service providers (e.g., eHealth Ontario, Health Shared Services Ontario and OTN)
4. OntarioMD-certified EMR vendors, and
5. Clinicians and health service provider organizations

Furthermore, this project envisions at least two phases (illustrated in Figure 11) to build the infrastructure and establish integration, and then to expand participation across the province. Deliverables will be balanced between those that deliver immediate / near-term benefits, and those that underlie long-term success and sustainability.

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[24] Alberta Referral Directory for Calgary and Edmonton https://www.albertadoctors.org/news/specialist-referral-directory

[25] Bridging General and Specialist Care Project, Winnipeg, MB, Brie DeMone

[26] ZorgDomein (Care Domain) – Dutch Referral System

[27] OntarioMD eReferral Working Group meetings to discuss current state and themes for improvements to be addressed by the future state concept

[28] OTN OTIX current business transformation initiative, 2012

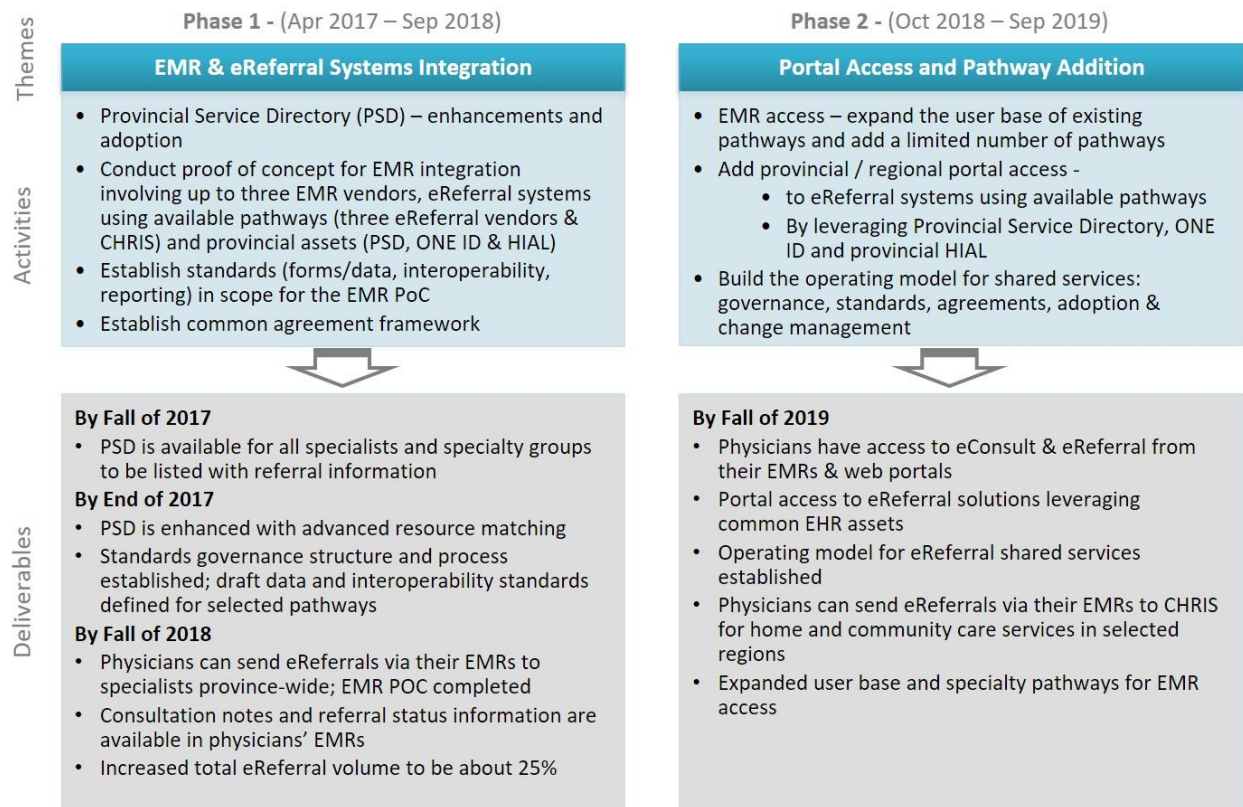| Phase 1 - (Apr 2017 – Sep 2018)	Phase 2 - (Oct 2018 – Sep 2019)
Themes	

Figure 11 - Provincial eReferral Initiative - Implementation Plan

The table below presents the LHINs that will participate in Phases 1 and 2 leveraging their existing and planned eReferral pathways, along with the corresponding eReferral solutions. Appendix E: Delivery Partner Model presents a more detailed view of the delivery partner model that will be leveraged for the implementation.

LHIN	eReferral Solution	Pathways
North West, Toronto Central & Central	Strata	• Paediatrics • Regional Joint Assessment Centre / Orthopedics • *Generic medical specialty (Phase 2 – to be confirmed)*
Central East	Novari	• Centralized Diabetes Intake (and other chronic diseases) • Cardiovascular rehabilitation service • *Orthopedics Shoulder Clinic (Phase 2 - to be confirmed)*
Waterloo Wellington	Ocean	• *Medical speciality (to be confirmed)*
North East	CHRIS	• Community agency (LTC, Assisted Living, Adult Day) eReferrals

4.3.3 Workstreams

To deliver the core functional groups, this business case supposes a series of work streams (e.g., EMR integration, identity management) overlaid with priority areas that will inform progress and ensure effective implementation (e.g., governance), presented in *Figure 12*.
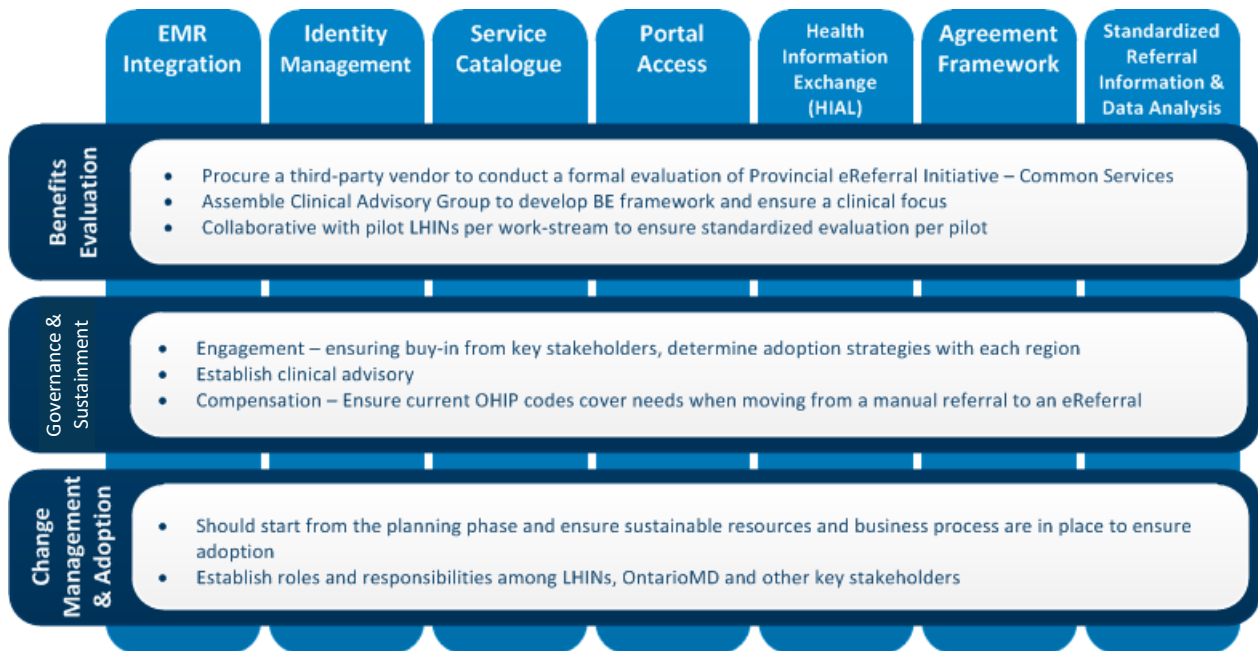

Figure 12: eReferral workstreams and priority areas

The workstreams delivering the Provincial eReferral Shared Services, known as **Shared Service Workstreams**, are depicted as vertical boxes, while activities that are required to support the execution of the entire initiative, known as **Cross-cutting Workstreams**, appear as horizontal bars in the diagram above. The following sections provide a brief overview of each workstream, including background, objective, approach and the key activities.

4.3.3.1   Shared Service Workstreams

Implementation Plan – *Support Physician Workflow*

EMR Integration
Background and Objective
The EMR Integration workstream aims to further automate the primary care to specialty care referral workflow by allowing both the primary care providers (PCP) and the medical specialists to manage electronic referrals from their EMRs (e.g., send referrals, receive referrals, update and report on status, view and update appointments, send consultation report to PCP). The workstream scope includes integrating EMR offerings with provincial eReferral common services and eReferral solution platforms.

Approach

OntarioMD will lead this stream of work, leveraging the methodology and experience in connecting EMRs with provincial digital health services, and in clinician engagement and change management. The LHINs will play a key role in planning the pathway implementation, carrying out change management activities with clinicians and in managing the engagement with the eReferral solution vendors. Key highlights of the approach for this workstream include:

- Follow OntarioMD's successful methodology on conducting EMR Proof of Concepts (POCs) – involve a selected number of EMR vendors, involve the three eReferral vendors and CHRIS with specialty care pathways available
- Leverage learnings from the eConsult–EMR Integration POC
- Establish requirements and specifications for EMR integration for eReferral (integration with Provincial Service Directory and with eReferral solutions)
- eReferral common services in scope for POC: Provincial Service Directory, ONE ID, Provincial HIAL

The exact integration approach and the functionality to be handled by the EMRs will be determined as part of the Proof of Concept activities in Phase 1. The key deliverables of this workstream are the standardized interactions, in the form of EMR Specifications, between the EMR offerings and the eReferral ecosystem, and the demonstration of these integrations through POCs and pilots with existing regional eReferral solutions.

Portal Access

Background and Objective

Similar to the EMR Integration workstream, the Portal Access workstream aims to support the referral workflow by allowing the clinicians to manage electronic referrals from their tool of choice – in this case, it will be through the web channel, likely via a clinical portal provided by a region or at the provincial level. The key objective is to provide a single gateway to initiate and manage referrals, offering features such as single sign-on integration with the Provincial Service Directory and regional eReferral solutions, and a dashboard providing users with the ability to track progress of referrals.

Approach

This workstream needs to consider the current landscape of existing LHIN-based referral websites (MH LHIN's Central Intake, WW LHIN's SCA), and regional portals (e.g., ClinicalConnect). Variations across the LHINs/regions are to be expected. The merit of a provincial portal also needs to be explored. The final approach will likely need to accommodate multiple options, and the implementation decisions will rest with the LHINs/regions based on local priorities and resources.

Workstream	Phase 1 (Apr 2017 – Sep 2018)	Phase 2 (Oct 2018 – Sep 2019)
EMR Integration	Key Activities • Conduct EMR proof of concept (POC) with regional eReferral solutions using existing pathways (approx. 6 pathways) • End-to-end workflow – PCP and specialists • EMRs to integrate with service catalogue, identity management, health information exchange and regional eReferral solutions	Key Activities • Continue into a limited production release (LPR) with more users • Continue POC with additional pathways (approx. 3) including CHRIS integration Key Deliverables • EMR LPR

Workstream	Phase 1 (Apr 2017 – Sep 2018)	Phase 2 (Oct 2018 – Sep 2019)
	• Planning for phase 2 pathways Key Deliverables • EMR POC completed • Requirements for EMR-eReferral Integration Specifications	• EMR POC continuation • Draft Specifications for EMR-eReferral Integration
Portal Access	Key Activities • Conduct current state analysis of existing and planned clinician portals that may could be leveraged for eReferral portal access • Establish the requirements and plan for portal access to regional eReferral solutions and Provincial Service Directory, e.g., centralized dashboard, access to service catalogue, integration with regional portals Key Deliverables • Requirements and implementation plan for portal access	Key Activities • Implement portal access to regional eReferral solutions using available pathways Key Deliverables • Provincial / regional portal access to eReferral solutions

Implementation Plan – *Access to Provincial EHR Assets*

Identity Management (ONE ID)
Background and Objective
The ONE ID workstream encompasses the activities to leverage eHealth Ontario's ONE ID Federation service to facilitate single sign-on (SSO) between EMRs, Provincial Service Directory, and the various regional eReferral solutions. In addition, this workstream will utilize the ONE ID certificates to establish secure communications amongst the systems involved in eReferral.

Approach
eHealth Ontario will be the key delivery partner in deploying their ONE ID solution. The EMR–eConsult Integration Proof of Concept will provide a reference implementation for leveraging the ONE ID Federation service for the EMR access channel, as well as integration with eReferral solutions.

Health Information Exchange (HIAL)
Background and Objective
This workstream involves the development activities to leverage the Provincial HIAL and the associated services to enable interoperability and be in alignment with the provincial eHealth Blueprint. Once completed, the Provincial HIAL will enforce secured access to, and integration with, provincial and regional assets, provide message orchestration, transformation, and routing services, and support the storage for, and access to, the status of an eReferral case.

Approach

eHealth Ontario will be the key delivery partner in deploying its Provincial HIAL and XDS Registry solutions. Similar to the ONE ID workstream, the successful use of the Provincial HIAL to enable interoperability between EMRs and an eHealth asset (i.e., OTN eConsult) through the Provincial eConsult Initiative will provide a solid reference for this initiative.

Service Catalogue (Provincial Service Directory)

Background and Objective

In Ontario today, a province-wide directory of consulting specialists for patient referrals currently does not exist. As envisioned in the eReferral Provincial Reference Model (and by other sources such as the Canadian Medical Association), a physician directory or health service catalogue is a critical component in helping referring clinicians to direct first-time referrals to the right specialist. The objective of this workstream is to establish a jurisdictional directory for specialty care in Ontario, the Provincial Service Directory (PSD), and offer this directory as a common service for referring clinicians in selecting specialists for referrals.

Approach

Although the OTN Directory has been in use for several years as a service catalogue for telemedicine referrals, and more recently for electronic consults, such as TeleDermatology and eConsult, further enhancements will likely be required to fully address the requirements for specialty care referrals, e.g., adding additional attributes to specialist profiles, resource matching, synchronization with eReferral solutions. The proposed approach is to conduct a current state assessment of existing regional and jurisdictional service catalogues, identify the gaps, confirm requirements with initiative stakeholders, document the enhancement requirements, and proceed with implementation. The current state assessment will examine existing implementation of provider directories, such as Waterloo Wellington LHIN's System Coordinated Access, Mississauga Halton LHIN's docSearch and South West Healtlline.ca Specialist Physicians Search.

In parallel with the EMR integration activities, the initiative will engage with clinicians to establish profiles on the Provincial Service Directory as an initial step. This simple adoption activity will provide an immediate benefit to health care providers in the province – having a single source to view available specialists and their associated information, including workups required.

Provincial Provider Registry

Background and Objective

The Provincial Provider Registry (PPR) currently provides a one-way feed of health care provider data to the Provincial Service Directory (OTN Directory). In order to support the envisioned future state, the objective of this workstream is to strengthen this integration with a tightly coupled bidirectional integration between the Provincial Provider Registry and the Provincial Service Directory, allowing relevant changes made in the PSD to be reflected within the authoritative record in the PPR.

Approach

eHealth Ontario and OTN will collaborate and plan the activities required to implement the integration enhancements.

Implementation Plan – *Access to Provincial EHR Assets*

Workstream	Phase 1 (Apr 2017 - Sep 2018)	Phase 2 (Oct 2018 – Sep 2019)
Service Catalogue (Provincial Service Directory)	Key Activities • Current state assessments, gap analysis and requirements definition • As part of the EMR integration POC, demonstrate the use of service catalogue to identify and select a specialist/specialty clinic • Allow specialists/specialty clinics to set up profiles on service catalogue – for referrer access through both manual submission and an EMR-integrated eReferral solution • Data synchronization between provincial provider registry (PPR) and service catalogue, and from catalogue to eReferral solutions Key Deliverables • Provincial Service Directory enhancements • Integration with EMRs, health information exchange and identity management service	Key Activities • Support portal integration with eReferral solutions – by using the service catalogue to identify the referral target eReferral solution • Support EMR integration LPR and expand the user base and pathways Key Deliverables • Integration with portals (provincial and/or regional)
Provincial Provider Registry (PPR)	Key Activities • Supply provider data to service catalogue (for those professional types in scope for Phase 1) Key Deliverables • Supply data to the service catalogue	Key Activities • Bidirectional flow between service catalogue and PPR • Supply additional provider data in scope for Phase 2 Key Deliverables • Bidirectional data flow with the service catalogue
Identity Management (ONE ID)	Key Activities • Integration with service catalogue, EMRs and eReferral solutions to support single sign-on (SSO) and patient/provider context sharing Key Deliverables • Integration with service catalogue, EMRs and eReferral solutions	Key Activities • Support provider context sharing with eReferral solutions via Portal Access; SSO Key Deliverables • Integration with Portals (provincial and/or regional)
Health Information Exchange (HIAL)	Key Activities • Allow EMRs to access application program interfaces (APIs) from service catalogue and eReferral solutions • Leverage system registry to maintain user-eReferral solution mapping, and XDS registry to maintain eReferral case metadata, including wait times tracking and reporting Key Deliverables • System registry and XDS registry enhancements • Single source of referral status information	Key Activities • Ongoing support of access to eReferral solutions and eReferral status

Implementation Plan – *Facilitate Interoperability*

Agreement Framework
Background and Objective
The Agreement Framework workstream aims to address a major pain point for the adoption of digital health services today, that is, clinicians are often faced with a complex set of agreements during registration for these services. The vision is to strive towards a common standard agreement framework for participation in eReferral, such that each stakeholder signs a minimal number of agreements which provides overarching coverage to exchange relevant data between required delivery partners and users.

Approach
OntarioMD is well-positioned to lead this stream of work, given the organization's experience in engaging with physicians and the Ontario Medical Association. eHealth Ontario, MOHLTC and the LHINs are expected to play a significant role in shaping the direction of this workstream and in participating in the delivery of various activities. Assessment of existing eReferral-related agreements, and previous efforts to consolidate and simplify agreement structures will inform the future state to be proposed.

Standards and Data Analytics
Background and Objective
The objective of this workstream is to achieve standardization on primary care to specialty care referrals in the areas of processes, referral forms, data sets, system integration, terminologies and reporting. The resulting standards will leverage and supplement the existing eReferral standard and reporting requirements in Ontario.

Approach
The exact organizational structure of this workstream will need to be defined with input from stakeholders. Leadership is expected to be provided by eHealth Ontario and the LHINs given their experience in establishing the current eReferral standards. LHINs have also developed measurement and reporting frameworks. OntarioMD provides leadership on EMR Specifications. The intent is to leverage, as much as possible, existing best practices, methodology, standards (pathways), standards governance and lessons learned from relevant projects and services, such as the Resource Matching and Referral (RM&R) project, WW LHIN's System Coordinated Access project, HSSO's Client Health & Related Information System (CHRIS), the Provincial eConsult Initiative and South East Health Integrated Information Portal (SHIIP). In addition, engagement with groups such as The College of Family Physicians of Canada (CFPC), Royal College of Physicians and Surgeons of Canada (RCPSC), academic health science centres and Health Quality Ontario will be important in the consultation and implementations of standardized referral forms and reporting requirements.

Workstream	Phase 1 (Apr 2017 - Sep 2018)	Phase 2 (Oct 2018 – Sep 2019)
Standards & Data Analytics	Key Activities • Establish the governance structure and ongoing process to develop and maintain specialty care referral-related standards • Support the EMR POC, develop the referral forms and data exchange standards for in-scope pathways • Identify minimum data requirements for applicable performance indicators • Initiate standardization in data collection and reporting across eReferral lifecycle • Establish standard wait time measures and reports (including tracking mechanisms) Key Deliverables • Governance structure and process established • Standards established in support of eReferral	Key Activities • Implement data governance model • Assess the needs, and establish requirements for presenting real-time referral indicators • Develop additional forms and data exchanges to support additional in-scope pathways Key Deliverables • Forms established for additional pathways • Data governance model implemented
Agreement Framework	Key Activities • Current state assessments and establish requirements for an agreement framework • Develop and implement a provincial agreement framework and ongoing governance structure and processes • Leverage the EMR POC to assess feasibility and validate model Key Deliverables • Governance structure and process established • Agreements	Key Activities • Ongoing support and maintenance of agreements
eReferral Solutions	Key Activities • Integrate with EMRs via the Health Information Exchange service using APIs and/or portlets • Support both referrer and specialist workflows Key Deliverables • Enable access to eReferral through EMRs and provincial assets	Key Activities • Integrate with portals to launch the appropriate eReferral solution; provider context will be passed Key Deliverables • Enable access to eReferral through provincial / regional portals

Implementation Plan – *Foundational Workstreams*

Benefits Evaluation
Background and Objective
The objective of this workstream is to support the change management strategy of this initiative by establishing a framework for conducting a benefits evaluation, both during the execution of the Foundation phase and for long-term benefits realization.

Approach
To ensure objectivity, a third-party vendor is proposed to assist with the framework development and to conduct the evaluation. The clinical focus of the evaluation will be guided by the Clinical Advisory Group, who will contribute to the development of the benefits evaluation framework and implementation plan. Existing benefits evaluation frameworks will be assessed and leveraged.

Governance and Sustainment
Background and Objective
The Governance and Sustainment workstream will establish the governance and operating model required to support the development and ongoing operation of the eReferral Shared Services. The agreed-upon model will need to align with governance models at the provincial and regional level, and include long-term sustainable funding mechanisms. In addition, this workstream will put in a place a long-term planning process to sustain and grow these services, including the continual development and maintenance of the standards and agreement framework with input based on a prioritization framework for future pathway developments. See Section 4.6 for additional details regarding operations and sustainment of the Provincial eReferral Shared Services.

Approach
A number of stakeholders will need to participate in this workstream to ensure an agreed-upon governance and operating model. The final list of participants will be determined through project governance. See section 4.6 for more information regarding the long-term operating model.

Change Management and Adoption
Background and Objective
Through lessons learned from previous health system integrations nationally and internationally, developing a robust, collaborative a change management and adoption strategy right from the start of a project is a key ingredient for success. The focus of this workstream is to ensure strong clinician participation in the activities of all the workstreams, along with sustained adoption of the services being delivered by this initiative.

Approach
Based on the experience of OntarioMD in assisting physicians with adoption of EMRs and digital health applications, the proposed approach centres around incorporating physician leadership and leveraging OntarioMD's change management methodology. Consultation and input from other partners will also help to tailor the strategy to incorporate local and regional characteristics. Knowing the potential barriers are another important component that will inform the change management and adoption strategy. Through a comprehensive jurisdictional review of eReferral initiatives, a list of barriers to

adoption has been established to guide this workstream. For further information on barriers and facilitators to adoption, please review section 10.3 of Appendix F: Literature Review.

Workstream	Phase 1 (Apr 2017 - Sep 2018)	Phase 2 (Oct 2018 – Sep 2019)
Benefits Evaluation	Key Activities • Engage Clinical Advisory Group to develop the benefits evaluation framework, determine scope and ensure a clinical focus • Collaborate with relevant stakeholders to ensure standardized approach • Ensure framework can be used for ongoing benefits realization Key Deliverables • Benefits Evaluation Framework • Procure third-party vendor to conduct a formal evaluation • Benefits Evaluation report(s)	
Governance and Sustainment	Key Activities • Establish Terms of Reference (TORs) for key governance bodies, identify chairs and membership to ensure oversight and guidance for provincial initiative • Assemble governance bodies to guide and support Initiative • Create the business operating model for the shared services to ensure sustainability for the long term • Create the operational governance structure required to provide direction and oversight Key Deliverables • Governance structure for the Phase 1 and Phase 2 of the initiate • Operational governance and business operating models	
Change Management and Adoption	Key Activities • Establish roles and responsibilities amongst LHINs, OntarioMD and other key stakeholdersfor the implementation of the shared services, and for long-term operation and broader eReferral adoption • Engage relevant change management resources beginning with planning and continuing to ongoing use • Develop tools to assist clinicians to adopt eReferral into their practices Key Deliverables • eReferral Adoption Toolkit (includes quick start-up guides, FAQs, eReferral fact sheets, etc.) • Ongoing change management and adoption strategy	

4.3.4 High-level Timeline

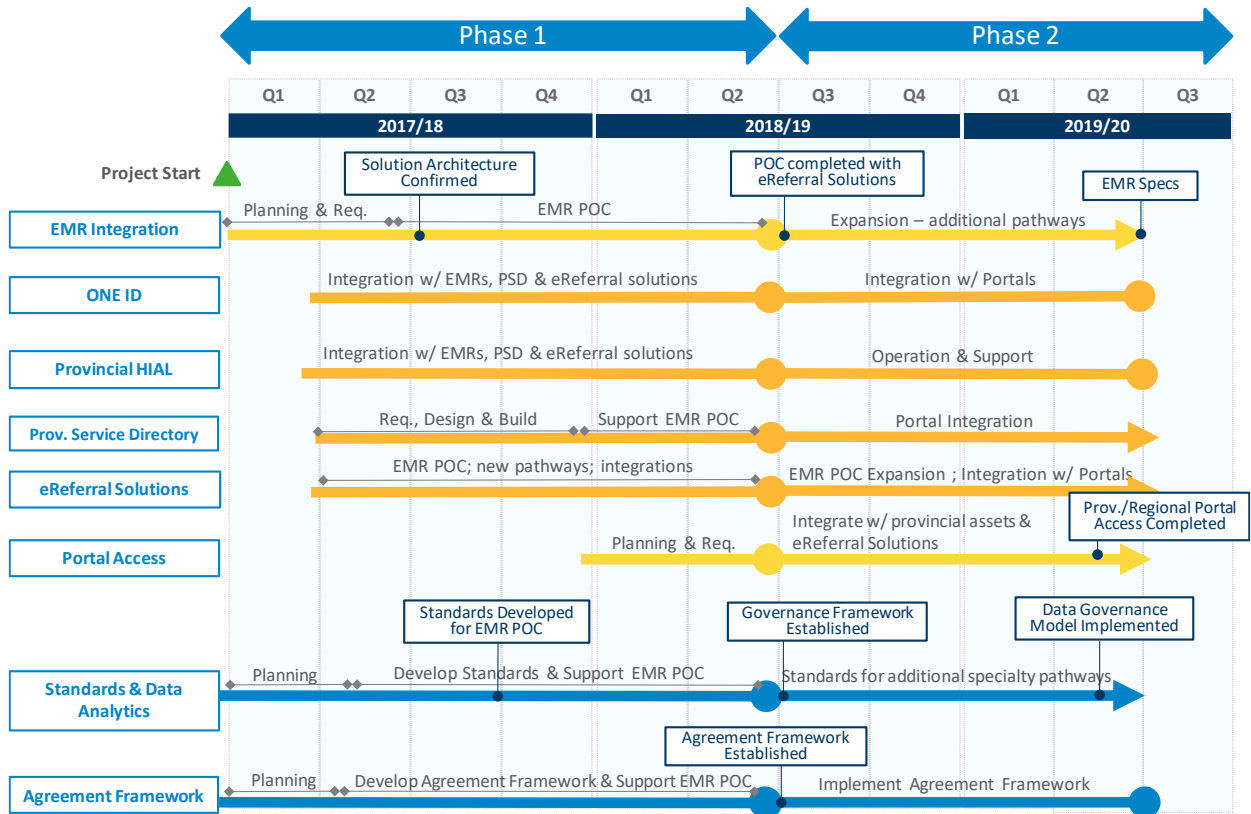The following is a high-level view of key deliverable timelines:

Figure 13 - High-Level Project Timeline

4.4 Risks and Other Considerations

Individual project-related risks pertaining to project delays, adoption, etc. will be articulated and managed as part of the project management efforts related to eReferral. At the outset, however, this business case considers high-level risks related to key areas around the project potential, scale, and scope, (e.g., whether there is a Provincial eReferral Initiative, and how the partners and stakeholders in the province can work together).

#	Risk	Probability	Impact	Mitigation
1	There is insufficient interest / support to proceed with an overarching Provincial eReferral Initiative	Medium	High – eReferral will be relegated to isolated regional efforts	• Business case is being written and presented with the input of key stakeholders (e.g., LHIN representatives) to reflect common strategy and objectives • Opportunities consider advancing existing solutions to leverage regional successes • Key clinical and patient safety benefits of a provincial eReferral service are being considered • Near-term, clinically valuable deliverables are planned as priority alongside long-term development • Strategy is informed by cost-effective and cost-conscious principles
2	Regional partners and stakeholders are divided about the best approach and don't align to support a common proposal	Medium	High – eReferral scale may be limited to subset of regions / stakeholders	• Priorities and requirements of various stakeholders are being explored and discussed from the outset to inform planning • All LHINs – including those without existing eReferral strategies – are involved through the Pan-LHIN eReferral Working Group • Broadly-accepted, clinically-valuable drivers (e.g., single sign-on from EMRs) are being prioritized as project deliverables • Initial assessments retain high-level focus on common deliverables
3	Participating vendors and service providers (e.g., eReferral systems, EMRs, provincial service providers) do not prioritize key integration requirements	Medium	High – eReferral scope may be limited to subset of functionalities	• Priorities and requirements of various stakeholders are being explored and discussed from the outset to build consensus and agree on priorities • Partner expectations are being clearly defined and accountability emphasized • Realistic goals are being set for achieving partner readiness, with supportive structures envisioned throughout the process

#	Risk	Probability	Impact	Mitigation
				• Key partners are leveraged for specific expertise (e.g., OntarioMD for EMR integration, LHINs that have eReferral solutions for lessons learned, etc.)
4	Integration among vendor products (e.g., EMRs, eReferral systems) is perceived as too complex to pursue	Low	High – eReferral scope may be limited to subset of functionalities	• Integration / connectivity strategy is to be focused on leveraging existing solutions where possible using standards-based processes • Project will prioritize near-term benefits in order to advance the clinical value of integration • Existing integrations (e.g., Ocean and TELUS Practice Solutions EMR) will be assessed for lessons learned and opportunities for enhancement • EMR integration will rely on a successful EMR Specification strategy managed by OntarioMD • Appropriate stakeholders will be involved in architectural planning • Architectural checkpoints and governance will be in place
5	Clinician stakeholders are not interested in adopting eReferral services	Medium	High – eReferral initiative may lack support from the outset	• All partners must take ownership of the initiative to promote the service offering • Clinicians will be engaged to contribute to planning and design phases to ensure the solution complements their workflow and addresses their needs • Robust change management strategy support will be in place to assist providers with the transition from the manual process to eReferral
6	Principles of best practices compared to ease of use engender a lack of support, e.g., workflow, privacy/security, etc.	Low	High – eReferral initiative may lack support from the outset	• Maintain workflow and ease of use as priorities for solution planning. Design and test processes with clinicians. • Identify clinical value of any additional requirements • Comprehensive communications plan required • Complete standard project assessments (e.g., Privacy Impact Assessment, Threat Risk Assessment)
7	Clinician stakeholders perceive solution will be onerous to access	Medium	High – eReferral initiative may lack support from the outset	• Prioritize EMR integration and seamless access • Comprehensive communications plan required

4.5 Governance

Defined governance responsibilities and decision-making authority will be required to ensure the Provincial eReferral Initiative benefits from appropriate direction setting, and to maintain smooth operations and meaningful evolution once a service is in place. A platform for open discussion among various project stakeholders that hold ultimate accountability for project direction will also most effectively address concerns around the existing eReferral investments, and will be best equipped to reinforce the ongoing support of stakeholder organizations even as the provincial scale demands compromise. If key stakeholders are invested in shaping the eReferral service, and have legitimate opportunity to give direction, challenge assumptions and decide upon the problems this initiative needs to solve, the provincial solution has the best opportunity for success.

Based on OntarioMD's experience in delivering similar initiatives, the governance structure must have recognition of the clinical and technical perspectives necessary for success, along with the support from domain-specific working groups involving project stakeholders and subject matter experts. One possible structure consisting of these key entities is depicted in Figure 14, below.

Steering Committee

Provides oversight and guidance to the initiative

Working Groups	Clinical Advisory	Technical Advisory
Domain specific groups will be formed relating to key deliverables	Advise on clinician engagement and adoption

Requirements definition | Provides technical advice and recommendations in solution implementation

Ensures alignment |

Figure 14: eReferral project governance

This flexible governance structure will provide management and direction for the project as well as ongoing oversight for the operational eReferral service. The Steering Committee will provide opportunity for the participating LHINs and other stakeholders to have a voice in shaping the initiative, while the Clinical and Technical Advisory functions will ensure that the project prioritizes clinical benefits, in alignment with sound technical planning and implementation best practices. The planning phase of the

initiative will also identify which of these bodies take on additional roles relating to the ongoing management of the project (e.g., the Steering Committee may assume a contracts management function over time). In addition, the initiative governance will need to consider alignment with applicable provincial, and possibly regional governance bodies, e.g., Digital Health Board.

4.6 Operations and Sustainment

As part of the Provincial eReferral Initiative, the business operating model for the proposed provincial eReferral technical and business services will be designed and implemented. The key components of the business operating model will include:

- Service level expectations for the shared services
- Business processes for the adoption, management and operation of the services
- Roles and responsibilities of the delivery partners and dependent entities, including the relevant agreements
- Operational governance structure required to provide direction and oversight
- Funding model to sustain the ongoing operation and enhancements
- Reporting framework, metrics and standards for aggregate assessment and monitoring of referrals

The business case is proposing to leverage several existing provincial digital health services, and therefore the focus for these shared services will be on the changes required to the current business processes, governance model and funding to address the needs of the envisioned provincial eReferral ecosystem. These existing services include:

- eHealth Ontario's ONE ID and Provincial HIAL services
- OTN's Directory and OTNhub services
- OntarioMD's EMR Certification and Change Management services

As for the other shared services that are currently not being structured on a provincial-scale, the end-state business operating model will need to identify the operational entity to be accountable for the management and delivery of these services, such as standards (referral forms and data, message exchange, reporting), planning and prioritization and change management. The operational entity may be assumed by a delivery partner, or the establishment of a new entity (perhaps through partnership of delivery partners) may be required to deliver the shared services.

Another important aspect of the business operating model is to develop a long-term, sustainable funding arrangement for the provincial eReferral ecosystem, which may include the development of a provincial approach to sustain the various regional eReferral solutions that are procured by the LHINs. The operational costs for the regional eReferral solutions will need to consider both the relatively fixed costs for support and maintenance, and the costs of new pathway implementations.

5 Appendix A: eReferrals Business Requirements

The business requirements for the Provincial eReferral Initiative will be established in consultation with various key stakeholders. Two existing business requirements documents that are expected to inform this process are:

- OntarioMD submitted to eHealth Ontario a set of business requirements for a provincial eReferrals solution in 2013. [Document attached]
- A document that contains the preliminary assumptions, constraints, and business requirements for primary care to specialist referrals. This artifact was developed in November 2016 by a subgroup of the Pan-LHIN Referral Management Working Group – those LHINs with regional referral systems. [Document attached]

6 Appendix B: eReferral Provincial Reference Model

eHealth Ontario's eReferral Provincial Reference Model is available at http://www.ehealthontario.on.ca/en/standards/view/ereferral-provincial-reference-model, and also provided along with business case.

7 Appendix C: COACH eSafety Guidelines

COACH: Canada's Health Informatics Association has published eSafety Guidelines as a reference for digital health initiatives. eHealth Ontario has purchased an Ontario-wide license for these guidelines in order to make them available to all digital health providers and stakeholders across the province

8 Appendix D: Functional Model Representations

Some example eReferral workflows are provided along with business case (as an external document) to illustrate the possible interactions amongst EMRs, eReferral solutions, and the Service Catalogue:

A. Use Case #1: Submit an eReferral and Check Ongoing Status (EMR and web versions)
B. Use Case #2: Receive an eReferral
C. Use Case #3: Process Referral

9 Appendix E: Delivery Partner Model

This business case presents a functional model of the eReferral future state with emphasis on the services that must be provided in order to achieve the desired goals. The purpose of this primarily functional perspective is to acknowledge that multiple service providers may be able to deliver on a particular service. Some may have already developed part or all of one such service, while others may be more appropriately positioned to deliver it as an integrated component of a provincial initiative. Further, comprehensive planning through the early stages of the Provincial eReferral Initiative may uncover new business requirements and/or delivery partners that have not been considered as part of this analysis.

Notwithstanding the value of this kind of flexible model, a purely functional (or generic) model faces limits in terms of costing and high-level milestone planning. The following diagram overlays the functional components with the proposed delivery partners and their associated solutions along with the eReferral solutions.

Figure 15: Provincial Referral Initiative: delivery partner model

For clarity, this model should not be construed as limiting the intention and outcomes of the eReferral initiative; rather, this represents the recommended model for the business case and a starting point for confirmation prior to the formal launch of the initiative. The costing, scope, and assumptions were developed for this business case based on the model identified in Figure 15.

In the same vein, Figure 16 expands on the delivery partner model represented above and presents a potential project governance and organizational structure for the Provincial eReferral Initiative.

Figure 16: Project Organizational Structure

A granular assessment of roles and responsibilities for each party, and in support of each relationship, aligned with the ultimate agreed-upon delivery partner model, will be delivered in the comprehensive planning phases of the Provincial eReferral Initiative. Note, the above structure does not represent the ongoing operational structure for the Provincial eReferral Shared Services – the operating model, along with governance and organizational structures, that will be delivered as part of the Initiative.

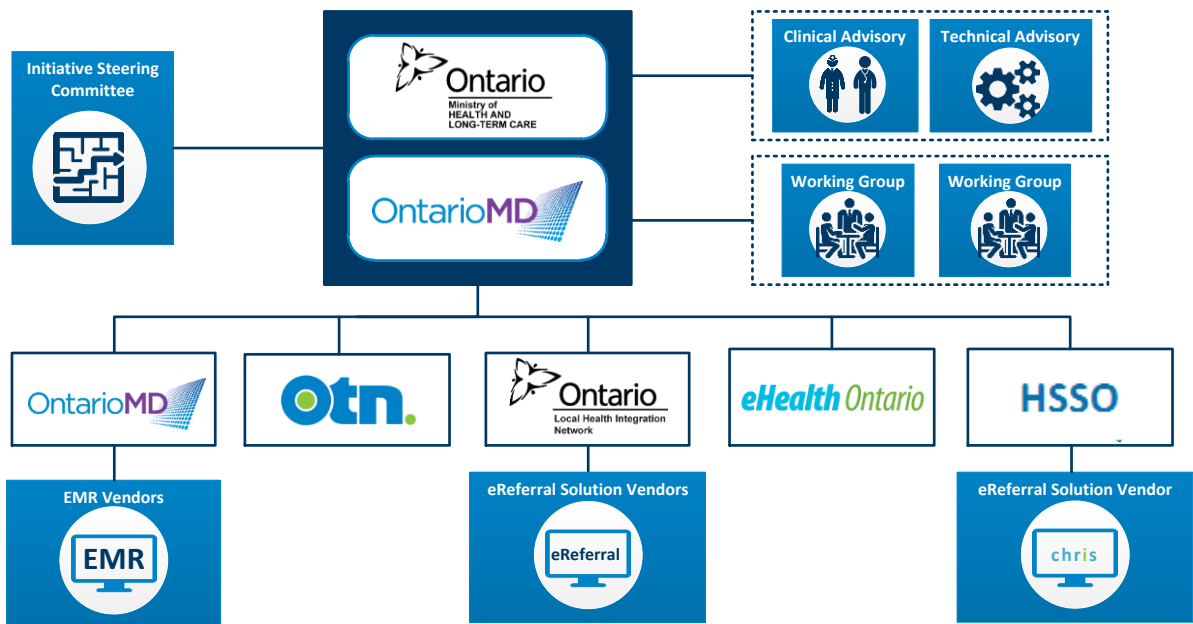The table below outlines the key roles and responsibilities for the main stakeholders of the initiative.

Stakeholders	Roles and Responsibilities (High-level)
MOHLTC	• Initiative Sponsor – defines priorities, sets direction, funds the initiative and provides approvals related to the budget, deliverables and policy decisions
OntarioMD	• Provides overall project management for the Provincial eReferral Initiative • Facilitates development activities between EMR vendors and other stakeholders • Provides change management, communications and security and privacy support
OTN	• Enhances the OTN products to meet provincial requirements, including integration with EMRs, eHealth Ontario and eReferral solutions • Participates in workstreams, advisory and working groups
LHINs	• Facilitates integration of regional eReferral solutions with provincial eReferral Shared Services • Participates in workstreams, advisory and working groups
HSSO	• Facilitates integration of CHRIS with provincial eReferral Shared Services • Participates in workstreams, advisory and working groups
eHealth Ontario	• Enables integration with and enhancements of provincial assets - ONE ID, Provincial HIAL, Provincial Provider Registry, eReferral Registry – XDS Registry • Participates in workstreams, advisory and working groups

10 Appendix F: Literature Review

Electronic referral systems have been implemented with varying degrees of success at the institutional, municipal, regional or national level in Denmark[1][2], Finland[3][4], the Netherlands[5], Norway[6][7][8], New Zealand[9][10][11][12][13][14], Sweden,[15] the United Kingdom (England[16][17][18][19] and Scotland[20][21]), and the United States (with San Francisco General Hospital[22][23][24] as perhaps the best -documented example) – among others [*a small pilot of eReferral was conducted in Brisbane, Australia[25]; however, we did not find evidence that it achieved full implementation*]. Among high-income countries with modernized health systems, Canada ranks below its comparators in this aspect of digital health capability. A 2012 Commonwealth Fund survey ranked Canada last among 11 countries for percentage of doctors able to exchange patient information electronically with other doctors.[26]

Yet, digital health momentum here has in fact led to eReferral implementations. Acknowledging the limited literature on eReferral in the Canadian context, a team of researchers conducted an environmental scan and found working eReferral systems in two provinces (Manitoba and various sites in Ontario), and activity in preparation for eReferral readiness in other provinces (Alberta, BC, Saskatchewan, Newfoundland, and Nova Scotia).[27] Since that review was undertaken, Alberta launched a pilot eReferral project in three areas: hip and knee replacement, breast cancer, and lung cancer. Although the project is still in early stages, an evaluation has been conducted which contributes to this review.[28][29] As capacity builds nationally, we can study implementations in Canada and abroad to identify the benefits we might expect from eReferral implementation across Ontario.

10.1 Alignment with Patient First: Action Plan

Below, potential outcomes are mapped against the broad goals of the Ontario health care system, as defined in the pillars of the *Patients First Act*.

eReferral's capacity to address the *Patients First* pillars
Pillar 1: ACCESS

Allows faster access to specialty care, reducing wait times. One of the clearest advantages to implementing an eReferral system is a potential reduction in wait times. For example, in the Connecting South West Ontario region, the use of the ClinicalConnect referral system was shown to reduce the waiting period for patients living with psychosis to be referred to a treatment program – avoiding an estimated 128 days of non-treatment for these patients.[30] A review of the literature on provider-to-provider electronic communication in the United States and Europe found that most reports on eReferral systems cited, among its advantages, reduced waiting time and more efficient triage.[31] Evidence from other implementations show similar results. For example, the implementation of eReferral at several clinics within San Francisco General Hospital (SFGH) found that the average wait time for an initial consult dropped from an average of 112 days (range 38186) to an average of 49 days (range 22-76);[23] this was echoed in a qualitative evaluation of the project, where interviewed physicians reported "night and day" changes to wait times – from 5-12 months pre-eReferral, to 1-2 months, for some clinics.[32] A New Zealand project to improve the process of referral from community to secondary services found that the changes they instituted significantly decreased the time from referral to triage with the eReferral system.[33] A Norwegian project designed to reduce wait times after referral by general practitioner for outpatient surgery was predicated on the fact that the intermediary step of the

outpatient prep clinic added a median wait time of 101 days, which could be avoided in cases where the referring doctor could provide the necessary information to the process. The Danish eReferral experience found that eReferrals took an average of 1.33 days less to reach the specialist compared to the former system.[1] Both the Danish and Norwegian projects note that that the reduction in wait time would likely have the result of reducing the length of sick leave taken by waiting patients, thus bringing a larger societal benefit.[6] Reductions in wait times were also reported in the cases of Finland[3] the Netherlands,[34] England[34] and Scotland.[20]

Gives family physicians easy access to a wide range of specialists outside their networks. Liddy et al.'s environmental scan of eReferral projects within Canada found a broadly recognized advantage of 'pooling' specialists to diffuse demand as far as possible, as a precursor to establishing an eReferral system. Nova Scotia, for example, has established a pre-electronic referral directory of specialists to help physicians identify the most appropriate referral path.[27] This principle appears to have been operationalized in the Manitoba eReferral system; one of the benefits identified by primary care referrers was that the system made them aware of more specialists than they had previously realized were available.[35] In practice, eReferral projects do not consistently support this benefit. A comparative study of two eReferral implementations – England's Choose and Book, and the Netherlands' ZorgDomein – considered the functionality of "choice" in each case. Both systems ostensibly offered physicians and patients the ability to choose a specialist; however, choices tended to be limited. For example, the early incarnation of Choose and Book required referrals to be made to a clinic (by type) rather than a specific named specialist.[34]

Pillar 2: CONNECT

Provides a venue for secure and effective dialogue among providers sharing in the care and treatment of the patient. Electronic referrals have been found to improve communication between PCPs and specialists. In the Manitoba system, respondents to a usage survey reported that the system helped PCPs learn more about what information specialists expect to see in a referral.[35] The Champlain BASE system allows the referring PCP to attach electronic files from EMRs for specialists to review. The specialist then has the option to request more information until they can either make a recommendation or suggest a face-to-face referral. This system was found to avoid an unneeded face-to-face visit in 43% of cases.[27] Elsewhere, the San Francisco project found PCPs reporting that specialists offered better pre-referral guidance and addressed the clinical question more effectively with eReferral, and there was a clearer sense of shared care between providers for their patient.[36] [37] [23] Evaluation of this implementation identified improvements in provider communication as a contributor to the project's success.[32] [38]

Improves the patient experience by enabling seamless transitions in care. There is, at present, scarce information on the patient experience of eReferral systems. However, some studies have incorporated patient surveys in an attempt to assess this. The Health Quality Council of Alberta (HQCA), as part of a larger survey of patient's experience of referrals, conducted interviews with a subset of patients who were participating in an eReferral pilot in a primary care network. The majority of patients surveyed reported that the system was efficient and easy to use, and that they received notifications and helpful information about aspects like the urgency of the referral (so that they could have realistic expectations for an appointment date).[28] A controlled trial of an EMR-integrated eReferral application in Boston found that patients in the intervention arm (i.e., whose PCPs were using eReferral) were significantly more likely to report that their specialists had received their information prior to the appointment.[39]

Pillar 3: INFORM

Improves access to information and status throughout the referral process. When done properly, eReferral can help keep a patient's circle of care informed as to the status of their referral. An early trial of eReferral in Boston found that clinicians using the eReferral intervention reported a significantly improved flow of information to specialists from primary care (compared to the conventional referral method) prior to the patient's first visit. This finding was validated in patient surveys conducted as part of the evaluation; furthermore, patients on the intervention arm were more likely to report alignment between information provided by their PCP and that provided by the specialist.[39] In contrast, despite the overall apparent success of the San Francisco system, the evaluation team heard PCPs note that the system's inability to confirm appointments on the spot could be a problem, especially in practices where the majority of patients were difficult to reach, for example, due to homelessness.[38] Evaluation of the Scottish system showed that physicians felt it improved the ability to track referrals, especially urgent ones, for example, investigations for cancer. and increased their confidence that follow-up was taken.[20]

Provides fast and convenient consultation reports to family physicians, allowing timely follow-up appointments with patients. While not all examples addressed in the literature focused on the end result of a referral, i.e., the referring physician's receipt of the specialist's report, the few that did noted its importance. For example, the qualitative evaluation of the Scottish project had physicians reporting that the immediate transfer of documents was a definite benefit, and that they appreciated the audit trail the system enabled.[20] Similarly, the ability to track referrals was one of the most favourably-rated features of the San Francisco system; 89% of those surveyed reported that eReferral led to "better" tracking capability.[38] The Alberta pilot featured the interesting ability for patients to track the status of their referral. Uunfortunately, many patients reported being unaware of this function, as well as feeling that the system did not allow them the option to reschedule an inconvenient appointment, or view a copy of their specialist's report. [28]

Pillar 4: PROTECT

Reduces unnecessary or inappropriate testing and referrals. Electronic referrals have been found to reduce inappropriate referrals. The Canadian environmental scan reported this result in all three systems they investigated. For example, the Manitoba system was able to recognize as inappropriate 22% of 1,000 referrals submitted and redirect 60% of those to the appropriate path.[27]   An observational study (n=27604) of the San Francisco system, which involved a specialist at the stage of reviewing the referral after submission, was able to identify 40% of submitted referrals as inappropriate or incomplete. These were then subject to iterative communication through the system. Half resulted in an appointment, the other half were found to be unnecessary referrals. [37] Qualitative evaluation of the San Francisco case indicated that clinicians perceived this benefit to save time for the care providers and the patients.[32] Evaluation of the New Zealand system likewise reported this effect. One specialist was quoted as saying that "very, very few inappropriate referrals come in any more" (p. 46).[12]

Reduces the administrative effort, coordination and potential for errors. eReferral systems have the potential to improve clinical efficiency by reducing the time taken to make referrals, and automating aspects of the referral process to control for errors. This was accomplished in the Manitoba eReferral system (among others) by semi-integrating the system with EMRs so that referral forms would auto-

populate with patient demographic data.[7] In Alberta, the system was intentionally designed to identify common errors, such as duplicate or incomplete referrals, so that these could be caught (at this early stage it is unclear whether the implementation has succeeded in reducing such errors).[29] The San Francisco system was able to achieve buy-in in part because practitioners perceived the system to improve administrative efficiency in submitting and managing referral requests and to reduce paperwork.[32][38][37] Some assessments of existing systems, however, have shown that this potential is only realized with careful design. For example, like the Manitoba system, the Scottish implementation was designed to correctly auto-populate the referral form, which was perceived as saving considerable time, but other aspects of the report were found cumbersome and affected the overall perception of system efficiency – a lesson for the impact design has on implementation.[20] Clinics in the Danish system reported a faster referral process and reduction in the risk of errors and referrals returned to the PCP (for corrections or incomplete information); however, this system did encounter technology failures that on occasion slowed the process.[1] As well, some systems found improvements, but not a total elimination of errors. Implementation in US Veterans Affairs hospitals found that some referrals were still lost to follow-up in an eReferral system.[40]

Improves workflow and convenience for both referring and consulting physicians. Asynchronous communication is cited as a clear advantage to eReferral systems in several systems, including Canada[27], the United States[39][41], and New Zealand. [14] In the San Francisco case, eReferral was found to facilitate iterative communication so that the specialist reviewing the request could get clarity from the PCP prior to scheduling with the specialist. [37][32]

10.2 Cost savings (system and practice level)

Improvements to workflow, administrative coordination, and reduction in errors have also led to an often-defined objective of eReferral implementations: reduced system costs. Denmark, for example, is widely recognized as a world leader in digital health and has already identified significant savings in staff time and costs (possibly in the millions of euros) associated with EMR implementation. The Danish system has estimated that a national implementation of eReferral could lead to an annual savings of 3,500 euros per capita, a 25% decrease in costs.[1] Surveys of clinicians using the New Zealand eReferral system found it reduced errors such as lost attachments or even referrals, assisted by features such as confirmation of receipt.[33] The San Francisco case calculated projected savings from eReferral was highly dependent on the hourly wage/salary costs of those involved in submitting and reviewing the referral. For example, across the board, more costs of this nature were incurred at the primary care point as the physician spent more time on each referral than they had previously (while administrative staff spent less). However, on the specialist side, there was variation in costs. For example, surgical referrals generally used nurse practitioners to review the referral rather than a more expensive specialist, suggesting significant annual savings ($12,237 USD). Medical departments do not have this option, suggesting additional annual costs ($2,785 USD).[38] Overall, eReferral was found to bear a net cost, which (it was argued) would be balanced by improvements to provider communication, workflow, and efficiency. Authors also noted that the evaluation was conducted only one year in, so as users improved, further financial benefits could be realized.

10.3 Barriers to/facilitators of eReferral implementation

Much of the literature cites factors that may have compromised the successful implementation of eReferral projects studied or, conversely, have contributed to their success. Tables 1 and 2 below outline barriers (not always precluding implementation, but causing problems) and facilitators, in cases where these were assessed and reported. Barriers and facilitators are grouped in terms of logistical or capacity issues. Although similar factors appear in each table, these are not mutually exclusive distinctions. For example, the SFGH evaluation reported that some physicians had technology concerns whereas others did not; therefore, the "technology" box is checked as both a barrier and a facilitator.

Table 1. Barriers to eReferral implementation

Barrier	Canada - Alberta[29]	Canada - Manitoba[35]	Denmark[1,2]	Netherlands[5,34]	NZ – Hutt Valley[12]	UK - England[42,43,34]	UK – Scotland[20]	USA - SFGH[38]
Logistical issues								
Workflow and workload concerns	o		o	o	o	o	o	o
Technology problems		o	o	o		o	o	o
Interoperability problems	o	o		o	o	o		o
Lack of financial incentives								o
Capacity issues								
Failure to involve physicians early	o					o		
Lack of executive leadership	o				o			
Absence of mandate								
Lack of clear guidelines & standards	o					o		o
Inadequate training and support		o			o	o		o

Table 2. Facilitators of eReferral implementation

Facilitator	Canada - Alberta[29]	Canada - Manitoba[35]	Denmark[1,2]	Netherlands[5,34]	NZ – Hutt Valley[12]	UK - England[42,43,34]	UK – Scotland[20]	USA – SFGH[38]
Logistical issues								
Perceived practice benefits	o	o	o		o		o	o
Usability of technology		o	o				o	o
Interoperability (e.g., auto-population)		o	o		o			o
Financial incentives (incl. reimbursement)				o		o		o
Capacity issues								
Involvement of physician champions	o	o	o	o	o		o	o
Executive leadership								o
Mandate (government or institution)			o			o	o	o
Clear guidelines			o	o			o	
Training and support	o		o	o				

Logistical issues such as those listed above could (ideally) be addressed in a more straightforward way, for example, through vendor testing for interoperability and workflow efficiencies. Capacity issues, however, may require a change management approach to ensure that the human resources required to make the system work are effectively stewarded.

Certainly, three of the larger scale implementations represented in tables 1 and 2 – Denmark, the Netherlands, and Scotland – seem to have achieved overall success and all are characterized by more capacity-facilitating factors than capacity barriers. The Danish MedCom system incorporated change management, which included national coordination and, at the local level, project coordinators, data consultants and practice consultants (similar to peer leaders) providing support.[1] The Dutch eReferral system ZorgDomein was implemented using a change management approach, which included a steering team with specialist and family physician representatives, training of physicians and office staff, a phased launch, and audit and feedback following implementation.[44] The Scottish implementation benefitted from government mandate, but also "*a sustained effort* to engage with key stakeholders and allow changes in practices, culture, and IT use" (p. 11), with health boards receiving and acting on feedback from users to improve protocols and systems.[20] In each case physician engagement and peer leadership, similar to that employed by OntarioMD, has been identified as contributing to the project's success. In contrast, England's Choose and Book electronic referral system – later abandoned – was initially plagued by slow uptake and physician resistance. A survey of GPs found that 93% felt they were inadequately consulted prior to the system's launch, suggesting a top-down approach to implementation rather than robust change management strategies.[34] Other reports suggest that primary care physicians simply refused to use the system.[43] Compare this to the success of the Scottish Care Information (SCI) Gateway system – used in almost all referrals – which led to its adoption in Wales and Northern Ireland.

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11   Appendix G: Pan-LHIN Referral Management Working Group

Membership list as of August 25, 2016.

Pan-LHIN Referral Management Working Group Member Listing as of August 25/16	
LHIN Staff Members	**Notes**
Amir Afkham, Senior Project Manager, Enabling Technologies, Champlain LHIN	
Robert Allan, Senior Program Lead, SE LHIN	
Alec Anderson, Director of Chronic Disease Prevention and Management, Erie St. Clair LHIN	
Karen Bell, Senior Manager, Health System Integration, WW LHIN	*(replaces Joyce Betchel)*
Brian Ashby, Team Lead Information Management, South West LHIN	
Rod Black, Program Manager, Electronic Health Systems, Mississauga Halton LHIN	
Cheryl Cullimore, Advisor, Access to Care, Hamilton Niagara Haldimand Brant LHIN	
Shez Daya, Program Manager, Digital Health Technologies, Toronto Central LHIN	
Karol Eskedjian, eHealth Program Manager, Central East LHIN	
Susana Hsu, eHealth Consultant, Toronto Central LHIN	
Gina Johar, Program Manager – Enabling Technologies, SE LHIN	
Sandra Lariviere, Health System Design Manager, Erie St. Clair LHIN	*(backup to Alec Anderson)*
Daniel Mainville, eHealth Program Manager, North Simcoe Muskoka LHIN	
Karen Malench, Project Manager, North West LHIN	
Jennifer Michaud, Senior Manager – Enabling Technologies, North East LHIN	
Marsha Moland, eHealth Program Manager, North Simcoe Muskoka LHIN	
Noor-Amin Noorani, eHealth Specialist, South West LHIN	
Sophie Outar, Program Manager, eHealth, Central LHIN	
Rishma Pradhan, Electronic Health Systems- Portfolio Manager, Central Ontario Cluster LHINs (Includes LHINs: C, CW, MH, CE, TC, NSM)	
Sandra Quinn, eHealth Program Manager, Central West LHIN	
Standing Non-LHIN Invited Guests	
Mel Casalino, Account Director, Connecting Northern and Eastern Ontario; Lauren Williams, eHealth Ontario	
Lori Moran, Project Manager, System Coordinated Access, The Centre for Family Medicine FHT eHealth Centre of Excellence, Waterloo Wellington LHIN	
WG (Standing) Membership Summary	
14/14 LHINs represented	
20 LHIN members plus 2 standing non-LHIN invited guests	